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STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

In re: Intent to Issue PSD Permit
City of Tallahassee
Purdom Generating Station

PUBLIC MEETING
Crawfordville Elementary School
Crawfordville, Florida
October 30, 1997
7:00 p.m.

Tape transcribed by:
CLARA C. ROTRUCK
Court Reporter

ORIGINAL

P R O C E E D I N G S

1
2 MR. RHODES: There are some cards, little blue
3 slips, and I'd ask if you would fill one of those out
4 and hand it to the lady right at the back.

5 I see a number of folks coming in, so I'm going
6 to wait just a minute until most of them get in.

7 I especially would like to thank Jim Dugger,
8 principal of Crawfordville Elementary School, and his
9 staff for providing the facilities tonight, and also
10 Alan Harvey and the Crawfordville Volunteer Fire
11 Department for helping us with the chairs and the
12 tables and getting us all set up.

13 This public meeting that is here tonight is being
14 requested by the Wakulla County Board of County
15 Commissioners pursuant to Chapter 403.508, section
16 (8), Florida Statutes, and before I get into that, let
17 me introduce myself. I'm Howard Rhodes. I'm the
18 director of the Air Resource Management Division of
19 the Department of Environmental Protection.

20 The purpose of the meeting here tonight is to
21 take public comment on air issues as they relate to
22 the prevention of significant degradation, which is
23 otherwise known as PSD, permit. That permit occurs
24 after a decision is made by the Cabinet on site
25 certification.

1 This discussion tonight is on a City of
2 Tallahassee construction of Unit 8, a 250 megawatt
3 natural gas fire combustion turbine and heat recovery
4 steam generator at the Purdom generating station in
5 St. Marks.

6 Now, if there are discussion items beyond air
7 quality issues, those will be covered at the site
8 certification hearing which is going to be held
9 November 18th at St. Marks.

10 Now, that covers a plethora of sins. It covers
11 water, siting, land use, and a number of things like
12 that, whereas the meeting here tonight is strictly an
13 air quality type meeting.

14 Tonight the Department is going to receive both
15 oral and written comments. At the door we had the
16 comment cards that were on blue paper. If you do want
17 to speak, please fill one of those out and the lady at
18 the back, Kim Tober, will hand that to me, and I'll
19 recognize you.

20 At the conclusion of the Department's
21 presentation today, we will then have comments that
22 come from the public, and then we will consider those
23 comments whenever the permit finally comes up for
24 issue. That determination will not be made until a
25 determination, affirmative determination is made by

1 the Cabinet.

2 Now, what I'd like to do is I'd like to introduce
3 the Department personnel who will be giving the
4 presentations tonight.

5 Chip Collette is the Department's attorney.
6 Chip? And he's going to talk about certification
7 under the Florida Power Plant Siting Act, and he's
8 going to explain a little bit about permitting and
9 certification from a legal point of view. He's the
10 Department's attorney for siting of power plants and
11 the provisions for public interaction in this
12 process.

13 I think first of all I'm going to recognize
14 Chip. He's going to kind of go through that process,
15 and then what we'll do is go through some of the
16 technical presentations and then I will be taking some
17 comments.

18 Chip?

19 MR. COLLETTE: Thank you, Howard.

20 Maybe I ought to talk into this anyway. If it's
21 too loud -- I've been accused of being too loud.

22 In where a power plant is being built or, as in
23 this case, adding generation, generating capacity,
24 it's required to have a permit to operate, and that's
25 called certification. You can go through individual

1 certification or you can go through a certification
2 process.

3 The certification proceeding, itself, will start
4 on November 18th, and at 7:00 p.m. on the evening of
5 November 18th in fact we'll be in St. Marks at the
6 Armory, I believe is where the certification hearing
7 is. We will have a public comment portion of the
8 certification hearing, and at that public comment
9 portion, at that public comment portion, most any
10 comment with respect to concerns for or against the
11 plant or the additional generating power can be
12 received.

13 What this process is here tonight, while we in
14 the state can permit or as you in the county can
15 permit, there are federal permits under the Clean
16 Water and Clean Air Act. The Clean Water Act is not
17 involved with the Purdom project; the Clean Air Act
18 is. The federal government has to be satisfied that
19 what's coming out of the stacks is not going to cause
20 significant deterioration of the clean air that we
21 enjoy in this part of Florida. We have great air up
22 here.

23 And that federal permit process, why we're all
24 here from the Department is that federal permit
25 process, and we're in the public portion of that, is

1 the federal government has delegated to the state of
2 Florida -- good evening -- has delegated to the state
3 of Florida the power to administer that federal
4 program, but the state, itself, in the certification
5 process, cannot say, no, you don't need a federal
6 permit. The feds get to say whatever they want; we
7 just happen to be able to run their permitting
8 program.

9 So we're here tonight to hear about the air
10 quality and air quality issues. However, any comment
11 you want to make will be noted. If it relates to air
12 quality, certainly our staff will take them back and
13 -- staff will take them back and incorporate them into
14 their final comments for considerations with respect
15 to permit. The same thing will happen at the
16 certification proceeding, the public hearing, which is
17 much farther. The certification considers everything.
18 The certification considers flood possibility,
19 hurricane possibility, water issues, land issues, air
20 issues, it considers these things as well, and those
21 comments -- standing at the back of the crowd, if
22 you'd raise your hand, is Hamilton, is Buck Oven, who
23 is director of the Office of Siting Certification, and
24 he and I will be at that certification hearing
25 starting on November 18th on behalf of the Department,

1 and I doubt if we'll see any of our air people there,
2 because principally this process has been looking at
3 the air issues. They may, but I doubt it, so I just
4 want to welcome you.

5 The process is built and the law is built to
6 really allow these public hearings, both in the
7 federal area and in the state, so that there is input.

8 The purpose of the law, and there are a lot of
9 stupid laws and I can tell you that as a lawyer, to be
10 honest with you -- I wish I'd have gotten out of my
11 tie before this. I was born and raised in a small
12 country town -- is -- there are a lot of hearings and
13 a lot of public hearings go into it, and that's
14 something I'd agree with, because I think that
15 citizens and people need to have input and need to
16 have a say, and with that, Howard, is there anything
17 else you think I can add to this? I'll be here to
18 help you.

19 MR. RHODES: Thank you, Chip.

20 Our next presentation, and we're going to try to
21 keep these fairly short, are going to be technical in
22 nature. Hopefully what we'll be able to do is give
23 you a real quick overview as what's being proposed,
24 and that way you'll have some insight into what we're
25 looking at.

1 The City of Tallahassee has prepared a number of
2 charts all around in back, and perhaps a number of you
3 have had a chance to look at those already, but with
4 that I'm going to introduce Al Linero, who is the
5 administrator of Use Source Review Section, who is in
6 charge of this particular type of permit, and he's
7 been reviewing this proposed permit for some time
8 now.

9 Al?

10 MR. LINERO: Thank you, thank you very much.

11 The City of Tallahassee submitted an application
12 to construct a 250 megawatt bi-cycle electrical power
13 unit at the Sam L. Purdom power plant in St. Marks,
14 Wakulla County. The location is about four-tenths of
15 a mile northeast of the St. Marks Wilderness Area.

16 The main unit is a General Electric MS 7231 FA
17 gas fired combustion turbine, which directly generates
18 160 megawatts of electricity.

19 A separate heat recovery steam generator will use
20 the waste exhaust heat and the gas turbine to make
21 steam. The steam will be used to generate an
22 additional 90 megawatts of electricity in the steam
23 turbine generator.

24 The project includes a new 200-foot stack and
25 cooling tower. Existing conventional steam units

1 known as 5 and 6 will be shut down. The key air
2 emissions will consist of nitrogen oxides, sulfur
3 dioxides, particulate matter and carbon monoxide. Air
4 pollution control will be accomplished through dry low
5 NOx combustion burners which will use clean natural
6 gas and low sulfur diesel oil as a backup.

7 When we shut down the units 5 and 6, the
8 allowable emissions will be substantially below the
9 previous permitted air emissions for the entire
10 facility.

11 The City has also requested a cap on emissions,
12 so that the actual sulfur dioxide and nitrogen oxide
13 emissions will be no more than the combined total over
14 the last two years. This is despite a significant
15 increase in power generation. The details of the
16 emission limits and control technology will be
17 discussed by our next two speakers.

18 The Department of Environmental Protection is the
19 permitting authority for the air construction permit
20 under Chapter 403 of the Florida Statutes, Chapter
21 62-4, 62-10 and 62-12 of the Florida Administrative
22 Code; and our delegation of authority for the heat
23 unit and prevention of significant deterioration of
24 air quality under 40 CFR 52.21U.

25 MR. COLLETTE: I've got all of that written

1 down.

2 MR. LINERO: Yes. Okay.

3 This permitting review was conducted concurrently
4 with the site certification review under the Power
5 Plant Siting Act. However, a final action on this
6 permit application will not occur until after the
7 Governor and Cabinet has considered the entire
8 project.

9 The DEP Bureau of Air Regulation in Tallahassee
10 received a four-volume site certification application
11 from the City on March 17 of this year. I saw a copy
12 of it back there. We distributed the air permitting
13 portion to the EPA Region 4 in Atlanta, the Department
14 of Interior's Fish and Wildlife Service Air Quality
15 Branch in Denver, our DEP Northeast District Office in
16 Pensacola.

17 The City also copied and invited comments from
18 the USDA Forest Service and the Refuge manager at St.
19 Marks.

20 The technical evaluation and preliminary
21 determination as well as a draft air permit are
22 complete, were completed and sent to the applicant on
23 July 1st, along with the Department's intent to issue.

24 We have copies back there which you're free to
25 take with you.

1 We provided copies of our conclusions to the
2 previously mentioned agencies. We also made copies
3 available for public inspection at our offices in
4 Tallahassee and Pensacola.

5 The Department's Notice of Intent to Issue was
6 published by the City in the Tallahassee Democrat on
7 August 7th of this year, provided a 30-day period for
8 anyone to submit comments under the Department's
9 proposed action or to request this public meeting.

10 It also provided a 14-day period for anyone whose
11 substantial interests were affected by this project to
12 file a petition for an administrative hearing.

13 We have not yet received comments in response to
14 the public notice, except for the request by Wakulla
15 County to hold this public meeting.

16 We noticed this public meeting on September 25th
17 and October 23rd in the Wakulla News, and on September
18 30th and October 28th in the Tallahassee Democrat.

19 The City also noticed the open house twice in
20 each newspaper. The open house is the activity taking
21 place behind the easels.

22 Copies again of the intent to issue are
23 available. If we run out, we'll be happy to make you
24 copies and send them to you if you'll give us your
25 address.

1 The application and the entire file will be
2 available for public review and copying in our office
3 in Tallahassee, and we'll accept additional comments
4 today until next Friday, November 7, 1997.

5 I will be accepting comments and considering them
6 specifically relating to the air emissions and
7 control. Any comments that are submitted here and
8 over the next week, those comments as well as the
9 recommendations of the administrative law judge in a
10 separate site certification proceeding and, of course,
11 the decision of the Governor and Cabinet will be
12 reviewed when issuing a final PSD permitting decision.

13 What I have here left over, this one is a
14 handout. You submit comments here, or you can send
15 them to me, Al Linero, administrator of the New Source
16 Review Section, the Bureau of Air Regulation, 2600
17 Blair Stone Road in Tallahassee. I have left my phone
18 number there, my FAX number, my Internet address and a
19 handy-dandy list here of agency contacts which include
20 the Air Permitting professional engineer, Marty
21 Costello, the meteorologist and modeling expert, Cleve
22 Holladay, compliance personnel as well as the legal
23 contact.

24 So, you know, take a copy, if you wish to make
25 additional comments if you don't make them tonight,

1 and if you mail them or get in touch with me, I'm sure
2 we'll consider them.

3 Thank you very much.

4 MR. RHODES: Thank you.

5 In the interests of time I'm going to go ahead
6 and introduce our next two speakers. The first will
7 be Marty Costello, who's going to go over the issue of
8 best available control technology. Any type of
9 facility that's built today has to have the best
10 control technology available on that facility before
11 we can permit it. He's basically been in charge of
12 that responsibility.

13 Secondly, Cleve Holladay will be giving a
14 summarization of the air quality, the impact of the
15 facility on the air adjacent to the plant.

16 With that, Marty?

17 MR. COSTELLO: I don't have a speaker in my hand,
18 okay.

19 MR. RHODES: Here's one.

20 MR. COSTELLO: I can do that. Is that better?
21 Okay.

22 My name is Martin Costello. I work for the
23 Bureau of Air Regulation. I was the engineer of
24 record on this project. I evaluated the best
25 available control technology for this project.

1 Al Linero talked about the equipment that they're
2 going to install, the gas-powered combustion turbine,
3 and it produces the bulk of the power, 160 megawatts,
4 and then the exhaust gases drive a steam generator
5 that generates an additional 90 megawatts. There's
6 no additional combustion, it's just using the waste
7 heat from the combustion turbine. This kind of unit
8 looks a lot like a jet engine on an airplane.

9 A VOICE: A little bigger, isn't it?

10 MR. COSTELLO: Yes, a little bigger, and a little
11 bit heavier, it won't fly, but it's the most efficient
12 way to generate megawatts that's commercially
13 available, and it's a pretty large unit for a
14 combustion turbine. There's only one class bigger
15 than what's going to be installed here.

16 The technology to control air emissions is dry,
17 low NOx burners which burn natural gas. This is an
18 approach that can give emissions of -- nitrogen oxide
19 emissions, very low. When they're powered with fuel
20 oil, their emissions are a little bit higher and
21 they're using water injection to control nitrogen
22 oxides.

23 The primary fuel is natural gas. It's about half
24 the cost of fuel oil, so there's -- when they can fire
25 gas, and I think that's most of the time, they're

1 going to be firing gas. It's cheaper.

2 Good combustion process will minimize other
3 emissions, products of incomplete combustion like
4 carbon monoxide, and then sulfur dioxide will be
5 minimized by firing low sulfur fuels, natural gas and
6 low sulfur diesel. That would also minimize
7 particulate emissions, which are a function of sulfur
8 content in the fuel.

9 These are the emission limits that are in the
10 permit currently, 12 p.p.m., and they're going to have
11 continuous emission monitors on that. That's the
12 lowest emission limit of any permitted power plant in
13 the state. There's only one other one with a number
14 that low, and the rest are higher than that.

15 Carbon monoxide, CO, is permitted at 25 p.p.m.,
16 and that's the worst case. Typically at full load
17 they'll will be less than half of that, so it's a very
18 low-emitting unit for COs.

19 Visible emissions, 10 percent opacity. You may
20 not be familiar with that term, but basically, you
21 won't be able to tell it's running at that low level
22 of opacity.

23 And then the other pollutants, sulfur dioxide and
24 particulate matter, are going to be minimized by
25 firing just premium fuels that have very little sulfur

1 in them.

2 If anybody has any questions along the way about
3 the equipment or the limits, feel free.

4 A VOICE: Let me ask about the opacity. How is
5 that measured, on a one meter scale with a light that
6 determines --

7 MR. COSTELLO: Yes. They're not going to have an
8 opacity monitor like you're describing, it's not
9 required. Department representatives are certified to
10 read opacity. You can actually look at a stack and,
11 if you're certified, if you've gone through the
12 training, you can make a determination of what the
13 opacity of the stack is. That training is pretty
14 extensive. Every six months you have to get an update
15 and you actually go and look at stacks, if they have a
16 generator of smoke, they calculate or eyeball every
17 six months, but there's no need for an opacity monitor
18 on this type of a unit that's only firing premium
19 fuels, which is not much smoke. Like I say, you won't
20 be able to tell it's running by looking at the stack.

21 Are there any other questions on the emission
22 limits?

23 Okay.

24 Those emission limits and the technology that
25 they're using to control the emissions constitutes

1 best available control technology. There's two
2 additional things the City has requested and we put
3 them in their permit, although they're not required.
4 They requested an emissions cap of annual emissions of
5 nitrogen oxide and sulfur dioxides to prevent any
6 increases in these emissions, and that's a pretty
7 tough thing to do when the previous emissions were
8 based on a power plant that was only putting out 100
9 megawatts, and with the new unit it's going to be
10 about 300 megawatts, yet they're not going to increase
11 emissions of these important pollutants, and part of
12 the way they're doing that is they're shutting down
13 two older boilers that currently run.

14 And that's all I had. If anyone has any
15 additional questions, you can grill me.

16 A VOICE: Is the increase in megawatts from 50 to
17 250 or some other number? The documents say 50 to
18 250, you're saying 320. Which is it?

19 MR. COSTELLO: I'm talking about the entire
20 facility currently puts out, what is it, 112
21 megawatts, is that right? And after the new unit is
22 installed, it will be about 300 or just over that, so
23 it's about tripling the amount of electrical output,
24 yet emissions won't change, they won't increase.

25 Any other questions?

1 Okay.

2 MR. HOLLADAY: I'm Cleve Holladay and I'm the air
3 modeler for the Air Resources Management Division in
4 the Permitting Section.

5 Air quality dispersion modeling was done for all
6 pollutants that were emitted -- that are expected to
7 be emitted by this project, and I will -- what goes
8 into this modeling, it's computer modeling, it's
9 meteorological input, stack parameters like emission
10 rates, stack heights; and based on these modeling
11 runs, we try to estimate the maximum impacts predicted
12 not only for this project but all sources located
13 within 150 kilometers of the project, so I'm going to
14 summarize the results of the key pollutants, and I'll
15 start with sulfur dioxide.

16 We have three different standards. We've got the
17 ambient air quality standard which protects public
18 health and welfare, and then the Class II and Class I
19 increments which protect clean air and -- the Class II
20 would protect the clean air within the vicinity of the
21 facility, except in this case the St. Marks National
22 Wildlife Refuge is extremely close, less than a mile
23 away, so the more stringent increments from the Class
24 I area apply. This is a sensitive area, so this
25 project would have to meet those.

1 As you can see, all the numbers are well below
2 the standards of increments, and actually this, these
3 numbers here include all of the sources within 30 to
4 50 miles.

5 The Purdom project, itself, is practically, is
6 less than two percent in each case here, so it's a
7 very small amount.

8 This is the PM impacts. Again, the PM numbers of
9 the project are much, much less than these numbers.
10 They include all sources.

11 Okay, the blue, the blue represents the all
12 sources impact and the yellow is the standards.

13 These are the nitrogen dioxide impacts. Again,
14 these numbers are well below the standards and
15 increments.

16 And then carbon monoxide and lead do not have
17 increments, they have standards only, and most of the
18 numbers here, the 8153 and the 5307 have to do with
19 mobile sources, just monitoring values, and again, the
20 project's impact is very small.

21 That concludes my presentation.

22 A VOICE: Mobile service sources, do you mean
23 (INAUDIBLE)?

24 MR. HOLLADAY: Yes. Yes.

25 MR. RHODES: Just for those of you that may not

1 know, the M is particulate matter, little small
2 particles, and those are the general criteria which
3 would measure some of the air quality that may be
4 coming out of some of the stacks.

5 Tonight I would like to recognize any elected
6 officials. Commissioner Stewart, glad to have you
7 here, glad you could make it out. Are there other
8 elected officials here?

9 A VOICE: (INAUDIBLE).

10 MR. RHODES: Commissioner Long, we're glad you
11 could come out tonight. Thank you very much.

12 A VOICE: The mayor, Chuck Shields of St. Marks
13 is here.

14 MR. RHODES: Mayor Shields, of course. That goes
15 back several years, but I was serving in a different
16 capacity and the mayor was trying to get a wastewater
17 plant in St. Marks and we spent many hours together.
18 It's good to see you again.

19 I only have three people who have requested to
20 speak tonight. If there's any others, please fill out
21 a little blue slip in the back.

22 The first speaker I would recognize is
23 Commissioner Stewart.

24 COMMISSIONER STEWART: I didn't ask to speak.
25 I'm just here collecting some facts.

1 MR. RHODES: Would you like to make any comments,
2 Commissioner?

3 Mayor Shields?

4 MAYOR SHIELDS: I'd just like to offer our
5 support, since the City of St. Marks will be the
6 really closest neighbor and have to look at all the,
7 the air pollutions and the standards of what's
8 emissible -- or permissible are so much the
9 (INAUDIBLE) we feel like the air quality here we have
10 now with the generating plant the way it is, we feel
11 like the new plant won't increase or decrease any
12 pollution.

13 MR. RHODES: Thank you very much, Mayor.
14 And Mr. Ed Mills?

15 MR. MILLS: Is it okay to ask questions?

16 MR. RHODES: Oh, please do.

17 MR. MILLS: My name is Edward Mills, IV. I'm
18 with the Wakulla County Planning Department, I'm
19 planning director for the county. I guess you know
20 we're opposed to the plant, but you know how rumors
21 are. The rumor that we were going to stuff a mullet
22 in the mouth of anybody that was in favor of the plant
23 is completely unfounded. We'd never do that with
24 mullet, never.

25 A VOICE: We had one down at Spring Creek just a

1 little while ago. It was real good.

2 MR. MILLS: Let me jump into the front end.
3 Under the summary, I understand that the last line
4 here, you're saying that with this new generating
5 capacity that there was not going to be any
6 significant increase in the emissions of air
7 pollution, but yet in the back we're describing this
8 as a significant contributor of air pollution. I'm
9 just unfamiliar with how we jump from that it isn't to
10 where it is. As I see it, there's about a 500 percent
11 increase. Apparently that's not significant. I don't
12 know, I'm asking the question, if anybody can help me
13 with that.

14 MR. LINERO: Okay. Well, significant,
15 significant in one context. It's significant in that
16 we would take notice in that we would have to model a
17 particular pollutant. These are the obvious
18 pollutants, that's the meaning of "significant," the
19 first meaning.

20 The second one is simply from a legal point of
21 view, within the context of something called
22 prevention of significant deterioration, and that's,
23 that's a, that's a very specific amount of pollution,
24 and "significant" means something very different
25 there. It means typically numbers like one-fourth of

1 what the ambient air quality limits are.

2 So we have two contexts, significant in that I'm
3 thinking of controlling sulfur dioxide, nitrogen
4 oxide, carbon monoxide, particulate matter, okay.
5 Significant in the second context is a 25 percent of
6 the standard of (INAUDIBLE), roughly speaking.

7 A VOICE: What you're saying, Al, you just got
8 ahold of the word significant and changed its
9 meaning?

10 MR. LINERO: And some other words.

11 MR. RHODES: Let me make sure if I can
12 reinterpret your question because I didn't know
13 whether you got the answer you were looking for.

14 You indicated that there was a 500 percent
15 increase in something?

16 MR. MILLS: Just taking a round shot at it, I was
17 trying to add up the percentages, I realized some of
18 them are in parts per million per day, per week, per
19 year, per month, annually. Some go back to it
20 monthly. I got lost, maybe, maybe that's just me, but
21 it looks like that there's actually an increase in
22 most of these things, and further back in the book, it
23 identifies the plant as a major or a significant
24 polluting -- pollution-generating facility.

25 MR. RHODES: Let me, I think I can address the

1 latter.

2 If a source is above a certain limit,
3 irrespective of anything, how clean it is, it's
4 determined to be significant in terms of the size of
5 the source, so that's how you can determine
6 significant.

7 Now, on the other question that is there, I was
8 under the impression that we're not talking about
9 those changes, other than what the existing source
10 was. Is that correct?

11 MR. COSTELLO: I think you have to look at what
12 pollutants you're talking about. There are, I think,
13 two pollutants that are projected to increase slightly
14 above the current plant's emissions. That's carbon
15 monoxide and particulate matter.

16 MR. MILLS: Sulfur dioxide, too, or --

17 MR. LINERO: No. Like I mentioned before, the
18 City has requested a (INAUDIBLE) cap on emissions of
19 what I would call the major pollutants, sulfur dioxide
20 and nitrogen oxide, so they won't go up at all from
21 the description in the permit that I have here.

22 MR. MILLS: Down in Section 1.2, it quotes that,
23 "The plant was built in 1952 but it has operated
24 infrequently in recent years." Are we basing that
25 determination on the fact that the plant hasn't been

1 running or what it's permitted to generate?

2 MR. LINERO: We based the limit from they cannot
3 recede on emissions that they actually put out, I
4 think it's two years.

5 MR. MILLS: I was just trying to figure out if
6 the comparison was to what was, what was actually
7 permitted to be dumped into the air and what is
8 actually being dumped in the air on a -- let's say an
9 annual basis now with this thing running infrequently,
10 or are -- are we comparing apples to apples or apples
11 to oranges?

12 MR. LINERO: I think it's apples to apples.
13 We're comparing what the actual emission cap is with
14 what they will be after the new unit is installed, so
15 they're not going to increase NOx or SO2.

16 MR. RHODES: Yes?

17 A VOICE: Sir, if I may add, one of the things
18 that they're going to do, for example, on sulfur
19 dioxide, the present limit is about 9,000 tons per
20 year, and in the past two years, they've emitted about
21 80 tons per year because they've been running these
22 units so infrequently and using cleaner fuels than
23 they're allowed to. What they're committing to is
24 that in the future they will not even be allowed to go
25 up above 80 tons per year, so the permitted emissions

1 will come way down and their actual emissions will
2 stay about the same on SO2 and on nitrogen oxides.

3 MR. HOLLADAY: I've got a slide that shows this,
4 basically. The blue is zero, it's the current
5 allowables, and the red represents the historical
6 actual, which is the last couple of years, and then
7 the future allowable here on the NOx will be capped at
8 467, and on SO2 at 80, so there's no increase.

9 MR. RHODES: Pull it up a little bit and make
10 sure everybody can see you.

11 MR. HOLLADAY: Okay, up this way?

12 A VOICE: Yes.

13 MR. HOLLADAY: The other way?

14 A VOICE: All right.

15 MR. HOLLADAY: Can y'all see that?

16 A VOICE: Okay.

17 MR. MILLS: Still on that first page, I see
18 where we have some, some hydrocarbons, fugitive dust
19 and what have you that's going to be coming from
20 vehicles and heavy equipment. We're going to use
21 various methods to make sure that the emissions or the
22 dust are held down. Maybe I missed it, but I didn't
23 see where or how that, that spraying, whatever we're
24 going to be using to hold that dust down, is going to
25 be separated from the stormwater such that the

1 stormwater that's discharged into the river doesn't
2 carry those same pollutants back to it. Is that, do
3 you feel comfortable with the way that has been
4 addressed in the submittals so far?

5 MR. LINERO: Those emissions -- I assume you're
6 talking about during construction?

7 MR. MILLS: Yes.

8 MR. LINERO: Truck traffic and so on?

9 MR. MILLS: What have you.

10 MR. LINERO: I think will be relatively minor,
11 it's just temporary. They will be doing it, I don't
12 know how long, a year or so during construction.

13 (INAUDIBLE) dust whether they spray the roads down,
14 whether that makes into the river, it's probably
15 insignificant.

16 MR. MILLS: On the top of the second page where
17 you have, "Increased hours of operation due to lower
18 fuel costs will not significantly increase the total
19 emissions," I was wondering if you could explain that
20 sentence to me, how the cost is going to get to the
21 emissions standards.

22 *costello* MR. LINERO: Power plants are dispatched based on
23 -- this is a little bit out of my area of expertise,
24 if I have one -- but as I understand it, power plants
25 are dispatched based on the cost to generate a

1 megawatt of electrical power, and if you can generate
2 megawatts more cheaply than another plant that might
3 have a more expensive fuel, that you will be able to
4 sell your power until the demand becomes sufficient
5 to, for that more expensive plant to come on line, so
6 you'll, you'll sell all the power you can generate at
7 that point, because you're cheaper.

8 MR. MILLS: Yes, sir.

9 MR. LINERO: Yes, the City knows this a lot
10 better than I do. They --

11 MR. MILLS: So the cost of the fuel has a
12 relationship to the emissions of air pollutants?

13 MR. LINERO: Just because it has --

14 MR. MILLS: Because higher priced fuel has lower
15 sulfur, is that --

16 MR. LINERO: Actually, the highest priced fuel is
17 No. 2 fuel oil, but it's got higher sulfur than
18 natural gas, so that's not --

19 MR. MILLS: That would seem to contradict that
20 statement, then.

21 MR. LINERO: Well, I think that because you'll
22 use the plant more, it's cheaper to run, and the more
23 you use it the more emissions you generate. Does that
24 make sense?

25 MR. MILLS: No.

1 MR. LINERO: No?

2 MR. MILLS: No.

3 MR. LINERO: That's what happens.

4 A VOICE: Perhaps, Mr. Oven, would you be able to
5 add to this a little bit from the power plant siting
6 certification?

7 MR. OVEN: I'm not sure where you're talking to.
8 Actually, we --

9 MR. MILLS: On the second page of the summary
10 report, at the top of the page, I don't know if you
11 have one handy here, it starts off on the page before
12 saying, "Increased hours of operation due to lower
13 fuel costs will not significantly increase the total
14 emissions of air pollutants." I was wondering how
15 running it longer on lower cost fuels was going to
16 increase the emissions.

17 MR. OVEN: The fuel cost is irrelevant. You're
18 taking out older units that are less efficient,
19 normally less efficient, replacing them with a more
20 highly efficient unit so you can save fuel. You're
21 capping the emissions, you'll operate the unit more,
22 the new unit more often, produce more electricity for
23 the same amount of air pollution that you're emitting
24 now, so you've got a more efficient unit, a clean
25 unit, so you, you're thermally more efficient, you're

1 electrically more efficient, and you're more efficient
2 in the sense that you're getting more hours of
3 electricity, more megawatt hours out for the same or
4 less air pollution.

5 So it's a better deal for the environment, a
6 better deal for the economy.

7 MR. MILLS: I've been reading Buck's reports off
8 and on for probably about the last seven or eight
9 years, and --

10 MR. OVEN: You're actually, you're asking
11 questions from the staff analysis report.

12 MR. MILLS: Yes, sir.

13 MR. OVEN: But these folks didn't write it.

14 MR. MILLS: That was yours?

15 MR. OVEN: Yes.

16 MR. MILLS: I notice in here, this report doesn't
17 seem to track the usual course that you have with your
18 reports. It looks like pieces of it got chopped on.
19 Maybe that was in the printing, or --

20 MR. OVEN: You need to get into Chapter 3 before
21 you get into the (INAUDIBLE) that these people wrote.

22 MR. MILLS: We're sticking just to the air
23 quality stuff tonight, right?

24 MR. OVEN: Right, and like I say, there's a
25 whole section in Chapter 3 of that report that these

1 fellows wrote, the pervasiveness of deterioration, or
2 stuff, that is in that report, and that is what these
3 people are responsible for. You're asking questions
4 that are outside the scope of this hearing.

5 MR. MILLS: Okay. I thought we were dealing with
6 the air quality -- and running through the summary
7 here, it looks like this is leading up to the
8 conclusion that this isn't going to have a major air
9 pollution increase.

10 MR. OVEN: Ed, as a layman, I think I basically
11 understand your question, and I kind of have that
12 question, too, is -- all of you may have heard about
13 retail wheeling which is coming some day soon. The
14 bottom line, for an example, in another part of
15 Florida, FP&L has a series of plants. They run --
16 Florida Power & Light -- they run the plants the most
17 where they have the cheapest fuel. They have the
18 other plants they call peaking plants that they don't
19 run like they run on low sulfur fuel oil which is more
20 expensive, say, than coal or natural gas, they run
21 those when, say, it's 100 degrees outside or it's
22 freezing and everybody is sucking power out of it, and
23 that increases it, so the plants with the lower fuel
24 cost, as natural gas low fuel cost versus -- and it's
25 more efficient, in other words, say, a kilowatt hour

1 might be a penny versus -- I'm just giving you a
2 hypothetical -- versus a kilowatt power being five
3 cents, the power plant, because that savings is also
4 passed on to the customers, and you're going to keep
5 your customers the rate charge passes right on to us
6 when we pay our electric bill.

7 The power companies, including Tallahassee, are
8 going to run the most their plants where their fuel
9 costs are the cheapest, because they can pass on the
10 savings, and oftentimes in that statement you will see
11 when they're running a change in a peak plant, peaking
12 plant which is high load, you know, everybody is
13 drawing electricity --

14 A VOICE: This facility was --

15 A VOICE: Well, you could say --

16 MR. OVEN: Ed, the purpose of this hearing is to
17 discuss the basis of the significant deterioration
18 permit. It's a separate permitting process from the
19 power plant site certification process. Now, there is
20 a parallel between the two, and they can be combined
21 in certain cases.

22 There are certain portions of the PSD permit that
23 occur in that report, but materials and conclusions in
24 the front of the report you're reading from are not
25 from the PSD, are not a part of the (INAUDIBLE)

1 resources management, so although they are valid
2 questions, you're about two weeks premature in asking
3 them.

4 MR. MILLS: Okay.

5 MR. OVEN: The PSD permit is based on will this
6 facility comply with the air pollution -- the ambient
7 air quality standards and the emissions limitations
8 which are placed on the Department and on EPA. It
9 also has to be demonstrated that they're utilizing the
10 best available control technology, which is part of
11 the PSD process, so energy efficiency, things of that
12 nature, would only apply if you were trying to really
13 decide which air pollution control technology would
14 apply to this power plant.

15 There is a process where the Department would
16 have to consider the cost of the air pollution control
17 equipment, the efficiency of the air pollution control
18 equipment and the overall cost as it might impact the
19 project.

20 When we start talking about other factors as far
21 as, let's say, the site certification desirability of
22 the facility, that is beyond the purview of the PSD
23 permit. That's why I said, you're a little ahead of
24 yourself. From a PSD point --

25 (End of tape 1, side 1.)

1 MR. MILLS: -- that report, then, which, reading
2 through the Agency comments, the 2.3 section, as I
3 understand it, DCA has made a recommendation for
4 approval for the project subject to conditions to
5 bring it into compliance with the State Comprehensive
6 Plan.

7 MR. OVEN: That's possible, sir, but that's not a
8 part of the PSD permit.

9 MR. MILLS: Even though it's part of it?

10 MR. OVEN: No.

11 MR. MILLS: No.

12 MR. OVEN: The PSD permit is a separate
13 permitting act than the site certification. It will
14 be granted only after certification is granted. If
15 certification is denied, then the PSD permit goes
16 away.

17 I think you're referring to the Agency analysis?

18 MR. MILLS: Yes, sir.

19 MR. OVEN: That's actually a certification report
20 for the certification process. It's not -- it has air
21 issues contained in it because there has to be
22 coordination with air on the PSD, but that's actually
23 not a PSD report. The notice of intent to issue PSD
24 permit would be what really would be the substance of
25 this proceeding, so the air section in there has the

1 PSD issues because we have to consider air issues in
2 the certification process as well, but that is a
3 certification report rather than a PSD report.

4 MR. MILLS: So, in other words, jump out of that
5 front section, jump back to the air quality impact
6 section?

7 MR. OVEN: That would probably be better,
8 correct.

9 MR. MILLS: There again, under 432 under the
10 facility category, that's the part where I was telling
11 you, the Purdom power plant station is classified as a
12 major air pollution emitting facility. That was,
13 that's how I was drawn back to that other statement.
14 The statement up front says it is not, but yet this
15 one says that it is. Therein was my question, how we
16 made that, that leap.

17 MR. OVEN: I think as Howard tried to indicate,
18 you have different categories of sources, and a source
19 that emits or has the potential for emitting more than
20 a certain tonnage of air pollutants is considered a
21 major source, and therefore is given a particulate
22 permitting scrutiny in review.

23 MR. MILLS: I see.

24 MR. OVEN: It has its own special meaning for
25 that particular area. In this case the Purdom unit is

1 a major air pollution source under the federal
2 definition of air pollution sources.

3 MR. MILLS: And I notice under the rule
4 applicability where it talks about which rules apply
5 to the air pollution and whatever, it states that
6 Wakulla County is an area designated as an attainment
7 area for critical pollutants. Would you explain what
8 that statement means to me?

9 MR. OVEN: Sure. Howard, do you want to --

10 MR. RHODES: I'll start. There's ways of
11 determining whether or not an area meets standards.
12 If an area does not meet standards, it's determined to
13 be non-attainment. Any other area is determined to be
14 an attainment area.

15 We have no non-attainment areas in Florida, so
16 Wakulla County is a part of the massive whole of
17 Florida that is in the attainment category.

18 MR. MILLS: Now, do you gather up credits for
19 attainment, is that --

20 MR. RHODES: No.

21 MR. MILLS: If you have a facility that's real
22 clean and one that's real dirty, do you get air
23 quality --

24 MR. RHODES: No.

25 MR. MILLS: -- attainment?

1 MR. OVEN: Ed, to answer your question a
2 different way, if your attainment -- if air quality in
3 that county is equal to or cleaner than ambient
4 quality standards, Wakulla County, you're cleaner than
5 the ambient air quality standard, based on -- to my
6 knowledge. It has nothing to do with the facility
7 itself; it's what people out here breathe.

8 MR. MILLS: Well, that's where I'm coming from.
9 I have folks telling me that the air isn't clean
10 enough for them now. I was wondering how, when they
11 put in a power plant that generates more, it's going
12 to make that better. It's just a question.

13 Whenever we get back over into the BAC
14 determination, under the general impact analysis on
15 page 16, we're talking about even with the BAC being
16 in place, it will exceed allowable rates? Can you,
17 can you shed a little light on that subject?

18 That's dealing with air quality and that's where
19 I was coming from with the credits routine. I didn't
20 know if there was some increment of air quality that
21 we were using up or if we were using up something
22 that's allocated as an excess in another area, or how
23 we were --

24 MR. OVEN: I'm not sure what your question is
25 totally, now. We're talking -- in Wakulla County

1 where the air quality is cleaner than standard, the
2 prevention of significant deterioration rules and
3 regulations say that you can only degrade that air
4 quality so much. There is a certain increment you're
5 allowed to degrade, you cannot exceed that increment,
6 and that is something that Mr. Holladay and the people
7 in the Bureau of Air Regulation have reviewed and
8 determined that this particular power plant, because
9 of the shutdown of the old sources, the replacement
10 with this new Unit 8, that the air quality impact
11 increment consumption is very little and within the
12 allowable increments. I think they have some charts
13 that illustrate that, and they're not due a credit
14 from anywhere else.

15 MR. MILLS: Okay.

16 MR. OVEN: There are --

17 MR. MILLS: It's an allowable area that you're
18 allowed to get it up to --

19 MR. OVEN: It'll never get, the cleaner the
20 standard, you can never get up to the standard. If
21 you're using something that's called emission credits
22 and this deals with other power plants in other areas
23 that are apart and existing, I -- that doesn't apply
24 here.

25 MR. MILLS: That doesn't apply?

1 MR. OVEN: No.

2 MR. MILLS: Thank you.

3 We were also talking about the oxides and
4 nitrogen and the BACT, best available control
5 technology, is what we're going to be using to scrub
6 these things out, but yet the BACT that we're going to
7 be using on this facility is not the primary, not the
8 top rate, we're going to take a step down from that.
9 In other words, by taking that step down, we're still
10 going to be able to produce clean air, we're not going
11 to dirty it up to the point where we're exceeding that
12 increment?

13 MR. COSTELLO: I think I can answer that. There
14 is a technology for controlling nitrogen oxide
15 emissions that can get you a little bit lower than the
16 dry low NOx burners. There are some trade-offs,
17 though. There are other emissions. You have to
18 inject ammonia, there's some ammonia (INAUDIBLE).
19 There are some trade-offs and there are some big cost
20 differences, and the Department made the determination
21 that dry low NOx burners is best available control
22 technology for this project.

23 MR. OVEN: This is where you get back at the
24 economics. You can put something like the equivalent
25 of a catalytic converter on the unit. It's a very

1 large catalytic converter and you do use ammonia,
2 which means you then have to ship a hazardous
3 substance into the city of St. Marks in order to
4 operate this chemical factory equivalent back in the
5 power plant. It costs a lot to do that, and the cost
6 for the tons of pollutant that we remove by putting it
7 on this that we feel are not warranted in this case;
8 that the dry low NOx burners will achieve an
9 acceptable low level of nitrogen emissions and they
10 are affordable. This is where some economics are
11 looked at by the Bureau of Air Regulation as it
12 applies to the air pollutant control technology.

13 A VOICE: These low NOx burners, you had
14 mentioned earlier that you use some kind of water --
15 what was the term you used, water --

16 MR. COSTELLO: There's water injection when
17 they're firing with fuel oil, basically diesel.

18 A VOICE: What kind of water? Fresh water from
19 the river, or --

20 MR. COSTELLO: Fresh water.

21 A VOICE: Will that still be used if we use this
22 other method? Obviously, it emits lower emissions.

23 MR. COSTELLO: No, no. In fact, it's a small
24 quantity of water. Whenever they have to fire the
25 diesel, the dry low NOx burners are not effective for

1 reducing NOx for that fuel, so they have to the use
2 water injection.

3 A VOICE: When the diesel is working?

4 MR. COSTELLO: When they're firing diesel.

5 A VOICE: But not --

6 MR. COSTELLO: When they fire natural gas, it's
7 dry low NOx burners, it doesn't use any water, it
8 gives much lower emissions.

9 A VOICE: What's the likelihood of having to fire
10 diesel?

11 MR. OVEN: It will happen on certain rare
12 occasions when you have some very cold weather and
13 domestic customers are utilizing natural gas for home
14 heating, things like that. They have first priority,
15 and industrial customers could be bumped off of
16 natural gas. In that case, it's kind of a (INAUDIBLE)
17 decision, in that case they would then switch to oil.

18 A VOICE: But the emissions would go up
19 considerably?

20 MR. OVEN: Emissions will go up slightly, yes,
21 when that happens, but generally you get bumped off
22 from natural gas probably -- maybe two or three, four
23 days in a year's time, if that. I mean, it's -- it's
24 a rare occurrence if it does happen.

25 A VOICE: So the justification, then, for going

1 to the second best technology is, and you're quoting
2 here, "The total levelizing of cost is estimated at
3 1.5 million per year for 20 years resulting in an
4 incremental cost effectiveness of about \$7,225 per ton
5 of nitrous oxide removed. This incremented cost
6 effectiveness value is considered higher than those
7 determined to constitute BACT for other projects in
8 Florida of a similar nature. Therefore, SRC is deemed
9 to be too expensive for this application."

10 What -- you're comparing it to other projects in
11 Florida, and it's, it's been a kickout at a cleaner
12 rate than what the other projects in Florida are, but
13 yet it's going to have some adverse effect to it?

14 MR. COSTELLO: I think I can address that.

15 Power plants similar to this one that
16 have combustion turbines, generally dry low NOx are
17 used, that's the state of the art for this type of
18 power plant. There are no power plants of this nature
19 that have what you're talking about, SCR, selected
20 catalytic reduction.

21 There's two large coal-fired units in Florida
22 that have them. They came on line in the last three
23 years or so.

24 MR. OVEN: Actually there are three.

25 MR. COSTELLO: Three years ago?

1 MR. OVEN: No, no, three plants. Cedar Bay and
2 OUC and (INAUDIBLE).

3 MR. COSTELLO: Cedar Bay is (INAUDIBLE).

4 MR. OVEN: (INAUDIBLE). It's --

5 MR. COSTELLO: What I'm saying is there's no
6 precedent in Florida for firing SCR; in fact, there
7 are some drawbacks in terms of other emissions that
8 you'd want to consider before (INAUDIBLE) technology.
9 We have it in Florida.

10 MR. MILLS: The concern that we're, that all of
11 this is stemming from is, you know, the wind is here
12 in the community generally from the southwest to the
13 northeast, so the plume of steam and whatever it
14 carries with it is going to be traveling across
15 Wakulla County up into Leon and then Jefferson
16 Counties.

17 We're concerned that because, even though this is
18 better than many of the other facilities, we still
19 feel that having no facility there at all for economic
20 reasons and for environmental reasons, seems like it
21 would be a better idea than taking two down that were
22 real bad and putting one up that's just a little bit
23 bad. Why do that at all? Why settle for a second
24 best when -- a majority of that land in between, in
25 Wakulla County, anyway, is owned by the St. Joe Land

1 Development Corporation. Maybe they don't have a
2 problem with that, but just immediately north of this,
3 you have a 200-unit residential subdivision that's
4 just been annexed into the city. You're going to have
5 a bunch of neighbors that it's going to blow right
6 across it. One of the concerns we have is they're
7 come at us, why didn't you say something about all of
8 this back whenever it was going through the siting
9 program, and hence the concern.

10 MR. OVEN: You're really now getting into a
11 siting issue because --

12 MR. MILLS: Right, it's the air pollution that --

13 MR. OVEN: Right.

14 MR. MILLS: -- that concerns us --

15 MR. OVEN: Well, the air pollution happens to be
16 well within the standards, and since it's well within
17 the standards, then the Department would recommend
18 approval of the project.

19 MR. MILLS: We're still concerned that "well
20 within the standards" is going to be adverse to both
21 the environment and the people out in that area, even
22 though it is within the Department's --

23 MR. OVEN: Okay.

24 A VOICE: Could I interject a question?

25 MR. RHODES: Yes, sir.

1 A VOICE: What's the comparison -- what's the
2 cost, then, compared to \$7,225 using SCR, compare that
3 to the cost using the dry NOx removal. Compare the
4 cost with it. What is the cost?

5 A VOICE: (INAUDIBLE).

6 A VOICE: Yes, I would guess it's close to a
7 thousand dollars per ton. I don't know the number
8 offhand, but it's significantly less than \$7,000.

9 A VOICE: A thousand difference or 1,000 tons?

10 A VOICE: The cost is likely less than \$1,000 per
11 ton.

12 MR. OVEN: It's about one-seventh of the cost of
13 the SCR system.

14 A VOICE: But you also mentioned that there may
15 be some other effects from SCR, but you're proposing
16 to use the NOx burner technology and you referenced
17 the G.E. ZON-2.6.

18 A VOICE: Right.

19 A VOICE: Yet, it's not, it's not, it's not been
20 currently demonstrated. How do you know what it's
21 going to do? Aren't you gambling there?

22 A VOICE: You said G.E. has guaranteed an
23 emission rate of less than nine percent parts per
24 million for (INAUDIBLE)

25 A VOICE: Yes.

1 A VOICE: But what happens if that guarantee
2 ain't no good?

3 MR. COSTELLO: The unit that's been chosen for
4 this project is a relatively new model unit. There
5 are two. There's one in Colorado and I think there's
6 one in Texas. Those -- that class of unit
7 specifically puts out about 15 parts per million.
8 They're developing that burner technology. You know,
9 the unit in Colorado, I spoke to G.E. this week about
10 it, this summer they demonstrated that they can get
11 down to nine parts per million, so I have reasonable
12 assurance that by the time they install this unit,
13 you'll meet a 12 parts per million limit.

14 A VOICE: It has to be above that 50 percent load
15 range and all that, how do you predict that?

16 MR. COSTELLO: Well, these type of units
17 particularly aren't operated below a 50 percent level.
18 Usually they run them typically at a full load.

19 MR. MILLS: But the lower it runs the higher the
20 emissions, right? It needs to run the higher --

21 MR. COSTELLO: No. The limit will be met
22 throughout the range of operations, again.

23 MR. MOWREY: It says it will be higher at lower
24 loads, it will be higher at lower loads. That's what
25 your report says, that's your report. "If the energy

1 is based on operation above the 50 percent load rates,
2 then emissions p.p.m. will be higher at loads below
3 this." Now, which is it?

4 MR. MILLS: Our concern was how often would it be
5 running at less than 50 percent so that we have some
6 idea.

7 MR. COSTELLO: Right. Only the City can answer
8 that. We don't restrict how they can operate the unit
9 in terms of what load, but we could give them a limit
10 that they have to meet whenever they're operating it,
11 so the limit as measured by continuous emission load
12 is 12 parts per million, so at whatever load they're
13 at, it's got to be below that.

14 MR. MILLS: Does the Department do that
15 monitoring?

16 MR. COSTELLO: We require installation of the
17 monitors and we require them to report any time
18 emissions exceed the limit.

19 MR. MOWREY: Are those logged somehow? I mean,
20 is there a log reading, or --

21 MR. COSTELLO: Yes. Concentrations --

22 MR. MOWREY: How do you know if this goes out a
23 week. How do you determine whether they go out of
24 parameters? I mean, can a plant operator, maybe that
25 goes a little over and they fix it and nobody ever

1 knows the difference? How do we know that? How many
2 days before you have to report a, something that's out
3 of parameters?

4 MR. COSTELLO: We require quality assurance of
5 the monitor to make sure that it's reading what the
6 actual concentrations are. Simply, dishonest things
7 can be done and we would have to catch them, and it
8 would be a criminal violation, falsifying records or
9 something of that nature.

10 MR. OVEN: Marty, isn't it true that each of
11 these monitors is required to have a recorder attached
12 to it, and that there is a paper product they can be
13 examined?

14 MR. COSTELLO: Yes. They have recorders so it's
15 a written -- printed out. It's also reported
16 electronically, and they use computers to store the
17 data and then they can report the emissions.

18 MR. MOWREY: You're going to measure your p.p.m.
19 based on a 30-day rolling average, which you
20 specifically say excludes any malfunctions or shutdown
21 or start-up time?

22 MR. COSTELLO: Yes, sir.

23 MR. MILLS: Or if the data is --

24 MR. MOWREY: That's the worst time. Why would
25 you exclude that in getting an average?

1 MR. RHODES: Sir, I think this gentleman here has
2 the floor. I'll be glad to recognize you as soon as
3 he's through.

4 MR. MOWREY: I think he yielded, for the record.
5 Certainly, I'll wait. Thank you.

6 MR. COSTELLO: I can answer the question, I
7 think.

8 The unit is designed to produce a certain peak
9 emission below a certain limit. In this case we've
10 set the limit at (INAUDIBLE). It's not designed to
11 meet that limit during transient periods, such as
12 start-up. Really, it's just start-up. Shutdown
13 emissions won't go up. Malfunction means something
14 breaks, so that's -- you can't anticipate that.

15 I will say that if there's some way to prevent a
16 malfunction and they didn't employ that, then it's a
17 violation of our rules. But it -- each time they
18 start up their emissions may exceed 12 p.p.m. It's a
19 provision in our rules.

20 MR. LAWHON: You spoke earlier (INAUDIBLE)
21 emissions. If it gets to the level of (INAUDIBLE),
22 will they shut the plant down at that time?

23 MR. COSTELLO: They will monitor their emissions
24 throughout the year, and if they've mismanaged those
25 emissions, we would certainly have to shut down and --

1 MR. LAWHON: Would that be on a yearly basis or
2 would it be like on a monthly basis or daily basis, or
3 -- I think they're going to run 11 months and then
4 shut down for the last month of the year. Who's going
5 to monitor that? Is it going to be the fox guarding
6 the chicken pen, or what -- I mean, what's the deal
7 here?

8 MR. COLLETTE: I might add, it would be helpful
9 to the court reporter if you'd state your names.

10 MR. LAWHON: My name is Lawhon.

11 MR. MOWREY: And who was the gentleman back there
12 as well?

13 MR. MOWREY: I'm Ron Mowrey.

14 MR. COLLETTE: Oh, Ron, okay, I should have
15 recognized you, Ron. Sorry.

16 MR. MOWREY: That's all right.

17 MR. COSTELLO: Your question was who was going to
18 monitor the (INAUDIBLE)?

19 MR. LAWHON: Well, first, of course, was are they
20 going to shut down when they reach a certain level
21 that they want to cap?

22 A VOICE: They would have to, sir, they would
23 have to -- the way the permit is written --

24 MR. LAWHON: If they want to be nice. Maybe
25 something (INAUDIBLE).

1 A VOICE: They would shut down, and this is a
2 good question, and, you know, we'll take that as a
3 comment, and we'll ask, you know, we'll ask ourselves
4 that question, ask them that question, and include in
5 any provisions that apply in the permit an answer to
6 that question, exactly what, what provisions there are
7 to provide reasonable assurance that it will never
8 exceed that cap, and we'll include that in the final
9 decision.

10 That's an excellent question, but realistically,
11 if they get their cap and it's 467 tons per year of
12 nitrogen oxide, they would have to shut down, and our
13 tools on that are a standard compliance assurance
14 benefits and so forth.

15 MR. COLLETTE: And legally the Department of
16 Environmental Protection has an enforcement section
17 and tools and ability to go into circuit court, and we
18 never have to use them because we get cooperation, but
19 can get an injunction by the judge that says you're
20 not operating because you're out of compliance.

21 But your question raises really a good example of
22 the purpose of this type of hearing. This is
23 something we need to consider, we need to take back
24 and take it into consideration.

25 MR. OVEN: If the unit is determined to violate

1 (INAUDIBLE), they can be fined (INAUDIBLE)
2 violation.

3 MR. MILLS: It won't necessarily stop the output,
4 but they would be fined after the fact?

5 MR. COLLETTE: Well, we, in other situations
6 we've taken dual enforcement actions when we have --
7 violations say in any particular enforcement area, one
8 we've sought injunction to shut it down, but for a
9 certain period of days there have been violations and
10 secondarily imposed administrative fines as well.
11 Usually dual course; we go in, you've already been in
12 violation two or three or four days in a week, and by
13 the way, Mr. Judge, Circuit Judge, shut them down,
14 we're not going to let them run any more, so you won't
15 -- so you get a double.

16 MR. MILLS: The concern maybe from these folks
17 was our emergency management director tells us there's
18 been a couple of spills at the site that were cleaned
19 up after the fact and nobody heard about it for a
20 while afterwards. We're concerned about that same
21 scenario coming down again, especially with air
22 quality, something that blows in the breeze. It's a
23 toughie.

24 A VOICE: I want to just make one comment. This
25 really concerns me, and (INAUDIBLE) about cost

1 effectiveness. I know that doesn't have anything to
2 do with air quality, but if the City of Tallahassee
3 wants to be a good neighbor to Wakulla County, coming
4 down here against most of our wishes to do this thing,
5 I would think you'd spend a little bit of extra money
6 to make sure it's very (INAUDIBLE) just for the
7 standards.

8 MR. MILLS: It's kind of in our front yard. I
9 realize it might be in their back yard, but that's our
10 front yard. That coastal area is what attracts the
11 entire world (INAUDIBLE).

12 MR. COLLETTE: I'm not sure legally how we can
13 ask for that. It's just simply beyond the scope,
14 constitutionally of what I can address. I understand
15 your concern.

16 MR. MOWREY: I think he's saying that since they
17 are in a certain environment, they would like to see
18 it be as clean as possible to minimize adverse impact
19 to air quality.

20 MR. LINERO: Well, the best example I've seen and
21 I'm not, you know, I don't work for the City, I'm
22 (INAUDIBLE), the best example that I've seen is the
23 willingness to forever forego that permitted emission
24 limit of 9,000 tons per year of SO₂, and forever take
25 a limit of 80 tons a year on SO₂. I would share with

1 you that some of the projects that I've been working
2 on recently, we're talking plants that are talking of
3 increasing emissions 10,000, 20,000 tons a year and
4 some of these plants emit 150,000 tons a year.

5 This kind of brings it into the real world.
6 We're talking about cap abating, and they voluntarily
7 entered into that cap. If we had done our job and
8 issued a best available control technology like we
9 did, we probably could only have limited them to, to
10 some number higher, certainly higher than 80, but they
11 voluntarily came in with that cap, and that seemed a
12 pretty good sign to us that they did more than what we
13 required of them. You know, only they can make that
14 attempt to convince you of the same, and I think
15 they're (INAUDIBLE) here.

16 A VOICE: And that's what I'm saying, we'll
17 (INAUDIBLE) a little more in the (INAUDIBLE).

18 MR. LINERO: Yes.

19 A VOICE: (INAUDIBLE). We're not benefiting
20 anything from this. We're going to get the acid rain
21 or whatever comes out of this thing. That's about the
22 only benefit we're going to get, so whatever the City
23 of Tallahassee can do, this thing is going to get
24 crammed down our throats one way or the other, so do
25 us a favor and do whatever you can do to help us.

1 MR. OVEN: I think what Mr. Linero was saying,
2 acid rain is a result principally of the sulfur
3 dioxide emissions, and the fact that the City of
4 Tallahassee has agreed to not keep those emissions at
5 or below what they're meeting presently, which is
6 beyond what we could have required on BACT analysis,
7 means that there will not be any increased acid rain.

8 A VOICE: And I understand that, but they said
9 there was another step they could to go make it even
10 better. I'm asking that y'all do that. It will cost
11 you a little more. We really need (INAUDIBLE).

12 MR. LINERO: We will, we'll certainly consider
13 the comment, but I did want to tell you, of course, in
14 making it better, when you talk about this limit of 12
15 parts per million NOx, limiting it to there, what will
16 happen is when we try to make it better and get that
17 down to, say, six parts per million NOx, then we have
18 to add another problem, which is 20 parts per million
19 ammonia, and suddenly you're saying, well, what was
20 the real benefit? We got the NOx down, but now we
21 have an additional pollutant into the air, so there's
22 a point at which, in trying to get, you know, one
23 pollutant down with technology that exists and the
24 chemical process which would require the storage tanks
25 and these chemicals moving in and out, that we thought

1 for environmental reasons as well as energy and
2 economics, that the minuses would have outweighed the
3 pluses on it.

4 We still, you know, the final decision on that
5 has certainly not been made. You know, we consider
6 the comments.

7 MR. OVEN: For example, you put the chemical
8 process off, it's (INAUDIBLE) reduction, like a
9 catalytic converter plus ammonia, you'll be smelling
10 ammonia from time to time in the plant. With the
11 system they plan on now, you won't smell that plant
12 operating ammonia. So, you might, as Al said, you
13 will reduce the nitric oxide to go to the atmosphere,
14 but you're replacing it with ammonia, which you will
15 smell, will notice, and it may bother some people,
16 plus you have a problem of trucks carrying a hazardous
17 material, ammonia, through Wakulla County and into the
18 city of St. Marks.

19 So -- and that's a risk. You know, if somebody
20 gets careless and you have an accident with that truck
21 bringing the ammonia in, then you have a real public
22 health problem.

23 A VOICE: It is not dangerous over (INAUDIBLE)
24 all of the gas (INAUDIBLE).

25 MR. OVEN: I just have one of those (INAUDIBLE)

1 ammonia trucks.

2 A VOICE: (INAUDIBLE).

3 MR. MILLS: Getting back to the cost
4 effectiveness, we're also talking about a carbon
5 monoxide level that's going to be increased, but the
6 statement here that the catalyst may also result in an
7 increase in oxidation of sulfur dioxide, sulfur
8 trioxide, which, combined with the moisture, this is
9 going to crank out a million gallons of steam a day,
10 creates a sulfuric acid mist, but I notice your
11 statement is this impact is not considered
12 significant. We disagree, we think sulfuric acid mist
13 is very significant, no matter how small it is.

14 People in Leon and Franklin and Jefferson County
15 have no idea that this is going to be blowing towards
16 them 24 hours a day.

17 MR. COSTELLO: I can address that question,
18 because I wrote that language. That's if we install
19 the SCR system that we at this point have decided is
20 not justified.

21 MR. MILLS: If you install the SCR you would not
22 have that, right, but you would --

23 MR. RHODES: You would have it.

24 MR. MILLS: You would have it?

25 MR. OVEN: The catalyst oxidizes the sulfur

1 dioxide and the sulfur trioxide. That's one of the
2 down sides of putting on that extra unit, so a
3 catalyst helps convert --

4 MR. MILLS: Carbon dioxide? Carbon monoxide?

5 MR. OVEN: No, it helps convert the sulfur
6 dioxide to sulfur trioxide. You add that to the
7 moisture, you get sulfuric acid mist.

8 MR. MILLS: All right.

9 MR. OVEN: So you put the catalytic system on,
10 not only do you have the ammonia, you also have an
11 acid mist. So that's one of the reasons why we say,
12 don't put that catalyst on there. We don't think it's
13 warranted.

14 MR. COSTELLO: In this case.

15 MR. OVEN: In this case.

16 MR. MILLS: We do.

17 MR. OVEN: You want acid mist?

18 MR. MILLS: No, we don't. What we're trying to
19 say we don't want the carbon monoxide and/or the
20 sulfuric acid mist. Either/or.

21 MR. OVEN: They are two different things, and
22 they're from two different parts of the process.

23 We're saying that if you put the catalytic system
24 on to remove the nitrogen oxides, you're going to
25 increase sulfuric acid mist, okay?

1 Carbon monoxide is a function of a different part
2 of the (INAUDIBLE) process and (INAUDIBLE). The
3 catalytic system has no effect on carbon monoxide.
4 The catalytic system will affect the nitrogen oxide,
5 it will affect the sulfuric acid mist and it will also
6 produce the ammonia, so if you want ammonia and you
7 want sulfuric acid mist, put the catalytic system on.

8 MR. MILLS: So, and maybe I'm wrong, if you take
9 that nitrogen oxide and mix that with water, you don't
10 make any nitric acid mist out of that?

11 MR. OVEN: You might get nitrous. You won't have
12 nitric.

13 MR. MILLS: I note that under the BAC
14 determination rationale that selected catalytic
15 reduction, the SCR we were talking about, was not
16 considered cost-effective for the City of Tallahassee.
17 SCR is an add-on nitrous oxide technology.

18 Can you explain that a little bit better,
19 please?

20 MR. COSTELLO: The dry low NOx burners, they are
21 actually the combusters that burn the fuel, and they
22 burn it in a manner that minimizes the formation of
23 nitrogen oxides. SCR, the catalytic technology, is
24 something you put on the back end in the stack, is a
25 catalyst and we get ammonia at that point. It's

1 something you add on, if it's warranted. In this case
2 we didn't think it was.

3 MR. MILLS: Maybe I'm wrong, this is saying you
4 can use either ammonia or water usage, but that the
5 water usage would increase the gallonage by 136,000
6 gallons per year annually if we were to use water?

7 MR. COSTELLO: When you use an SCR system, you
8 also mix water with the ammonia, so you do increase
9 the water usage.

10 MR. MILLS: Noting also in here that this BAC
11 will also ensure that ambient SO2 impacts on the
12 nearby St. Marks Class I area are minimized to the
13 greatest extent possible, and I don't know which one
14 of y'all could explain that to me, but does the St.
15 Marks Wildlife Refuge have a higher classification
16 than the balance of the county?

17 A VOICE: Yes.

18 A VOICE: Yes, sir.

19 MR. MILLS: So you have to meet these higher
20 standards for the plants and the animals out there,
21 but yet the civilians, that, that goes down for the
22 civilians?

23 MR. LINERO: Yes, sir, that's the federal law and
24 it's actually, it's actually ironically a good thing,
25 because you're near one of those, one of those areas,

1 so consequently, if it was a plant that had any kind
2 of, you know, impact on the populated area, it would
3 have an impact that, at least based on the way the law
4 exists, it would be unacceptable inside the St. Marks
5 part, so, so ironically, in an effort to protect this
6 scenic area, you have a desirable co-effect that the
7 populated areas are even more protected. That's true.

8 MR. MILLS: I'm the county's tree-hugger, I'm
9 concerned about the trees myself. I just wondered how
10 that worked out in the long run. If we hadn't had
11 that there, we wouldn't have to the meet that
12 criteria, if we hadn't had the Wildlife Refuge?

13 MR. LINERO: If you didn't have, if you didn't
14 have the St. Marks Wilderness Area nearby, we could
15 reasonably be talking instead of caps of 467 tons per
16 year, we could be talking of caps of 20,000, 30,000
17 tons per year of NOx, and that's right out of my own
18 experience.

19 MR. MILLS: Your guys in the environmental
20 section would be jumping and screaming about the
21 outstanding Florida waterway, you know, and the
22 seagrass preserve offshore, the whole nine yards on
23 that one, right? You couldn't win.

24 One of the questions I had on the CO2
25 determination that you have on page 25, it's

1 expressing that other pollutants, visible emissions
2 that are going to be limited to 10 percent opacity,
3 you were saying earlier that that's a visual thing,
4 and I was wondering, from where and how far? That's
5 determined from somebody just standing on site,
6 visualizing the stack, seeing what the --

7 MR. COSTELLO: Basically, yes, it's an eyeball
8 (INAUDIBLE). A trained eyeball.

9 MR. MILLS: The nitrous oxide that I'm averaging,
10 then, going back to the question about the 30-day
11 rolling average, I'm still not, I'm not familiar with
12 that 30-day rolling average routine. Would you
13 explain that a little bit to me?

14 MR. LINERO: Yes, I'll give it a try. What it
15 means is that over the period of 30 days -- now, I
16 think I heard that G.E. is going to guarantee this
17 thing something like nine, but let's say
18 realistically, it could mean that their emissions
19 might vary from nine to 15, but it can't spend too
20 much time, too much time significantly above 12, or
21 otherwise they could never get it low enough to
22 average it out to 12, so the limit to 30-day, 30-day
23 rolling average, that's something that's there in the
24 statutes, that they can request a 30-day rolling
25 average. If they had requested --

1 MR. MILLS: Is that lifted from EPA?

2 MR. LINERO: No, it's not lifted.

3 But if we wanted a 24-hour rolling average, the
4 number would probably be higher than 12, you know, it
5 might be 13 or 14 or 15. It's a matter of you put
6 together the standard with the averaging time, but
7 realistically, since they can't get down below nine to
8 speak of, then they're not going to spend much time
9 above 15 and have to make that up.

10 MR. MOWREY: Excuse me, is that 30 days that you
11 pick or is that 30 days, consecutive days?

12 MR. LINERO: 30 -- 30 days rolling. That
13 means --

14 MR. MOWREY: Any 30-day period?

15 MR. LINERO: Day in, day out, 30 days, for the
16 last 30 days what was your average, and those averages
17 are comprised of increments that are probably seconds
18 long.

19 In other words, these aren't, these aren't just
20 samples that are taken by technicians. This is just
21 continuous monitored automatic equipment that's data-
22 logged and so --

23 MR. LAWHON: So we're going to pull their records
24 and --

25 MR. LINERO: You can definitely pull their

1 records, I don't even -- I'm sure they wouldn't even
2 object.

3 MR. MOWREY: Does that exclude (INAUDIBLE) all
4 periods? I think I read in there it excludes those.

5 MR. LINERO: It excludes the --

6 MR. MOWREY: Which are the highest times of
7 emissions.

8 MR. LINERO: Start-ups, shutdowns. We could
9 discuss with them the possibility of including those
10 areas, but then the average, then the number might be
11 more like 13 or 14 instead of 12.

12 MR. LAWHON: That's what I was asking as a
13 citizen, that you would include those light-off
14 periods in those days or 30 days or whatever you call
15 them, rolling days. I mean, that's important. You
16 shut down, light off and break down, I mean, those are
17 days that you're dumping your most contaminants, those
18 are the days you should include, and try to avoid
19 those, that should be included in the picture.

20 MR. LINERO: We'll, you know, we'll take your
21 comment and we'll discuss it with them and we'll do
22 some research and see what the impacts are. In fact,
23 we're doing that at some other power plants, looking
24 at what happens if we bundle, you know, bundle the
25 regular operation with the shutdowns and malfunctions

1 and so forth.

2 MR. LAWHON: Well, they're not going to want to
3 do that. I mean, I wouldn't if I was running it,
4 because I'm more likely to go over my number.

5 MR. LINERO: I believe, realistically speaking, I
6 believe that they're going to do everything possible
7 to keep these units running. They don't want to shut
8 them down, they don't want to start them up, they want
9 to keep them running. That's the only way to run them
10 efficiently.

11 MR. LAWHON: That's the way they make money, we
12 know that.

13 MR. LINERO: And so realistically, I mean, I
14 could expect maybe a, maybe a start-up and shutdown in
15 a month, but we'll ask them those questions before we
16 take action on it, and we'll have an answer for you.

17 MR. MILLS: Lastly, I see that a statement here
18 after the footnotes, after Table 2, on 29, that,
19 "Based on the required analysis the Department has
20 reasonable assurance that the proposed project as
21 described in the report and subject to the conditions
22 of approval proposed herein will not cause or
23 significantly contribute to a violation of any AAQS
24 or PSD increments."

25 Further on, they go into talking about the EPA

1 directed stack height. "In approving this permit, the
2 Department has determined that the application
3 complies with the applicable provisions of the stack
4 height regulations as revised by EPA July 8, 1985,
5 50 FR 2789(2). Portions of that regulation have been
6 remanded by a panel of the U.S. Court of Appeals to
7 the District Court in NRDC versus Thomas, 838 F.2d
8 Edition 1224, DC Circuit, 198. Consequently, this
9 permit may be subject to modification if and when EPA
10 revises that regulation."

11 Can you tell me, just give me a ballpark, what's
12 going to happen with that? Do you have any idea?

13 MR. LINERO: We don't know what is going to
14 happen with it. I can tell you that we're required by
15 EPA to put that language in all PSD permits, whether
16 we understand it or not. We're required to put it
17 into all of those permits and it's a condition of the
18 delegation of this program to the state. It's also a
19 condition of our grant and so forth, but again, you
20 know, realistically, there are elements of that that
21 have to do with, with, you know, not just raising
22 stacks to, to, to dilute pollution and also how you
23 model the -- how the pollution disperses, but that's
24 not a concern in this project that I'm aware of.

25 MR. MILLS: Is there a concern with the height of

1 the stack in this area. There are cypress trees down
2 there that are a hundred foot tall, this would only
3 been two times that height? Is it better to have a
4 higher stack or a lower stack?

5 MR. LINERO: Depending on the application, but
6 200 is a fairly normal size for a power plant stack.
7 I think the highest in Florida, in fact, the highest
8 point in Florida is at the Seminole power plant in
9 Palatka, I think that's pushing 700 feet.

10 MR. OVEN: The stack is about 600.

11 A VOICE: I know there's a big stack and I forget
12 the name of the project now, but it was an Orlando
13 Utilities Commission project out, way out in between
14 Broward and, Brevard County and the city of Orlando.

15 MR. OVEN: Stanton.

16 A VOICE: Stanton, that's it. We flew the stack
17 with a chopper and the chopper pilot was telling us we
18 were at the upper limits that he could run that, I
19 mean, it was way on up there.

20 MR. OVEN: The -- you would like to have a tall
21 stack, but the federal regulations and
22 environmentalists prohibit it being excessively tall.
23 You want a stack that is high enough so that it, the
24 wind blowing over the nearby associated buildings
25 don't cause enough turbulence to bring that stack

1 effluent back to the ground too quick, so they have
2 what they call a good engineering practice stack. I
3 think this is designed in that range, where you want
4 it high enough so you don't get your building
5 turbulence effect on ground level concentrations, so
6 you want to have a stack high enough to meet those
7 criteria, but not excessively high where they can't
8 take credit for it. This is within that range of good
9 engineering practice.

10 MR. MILLS: If I can, one more. We were talking
11 about an air shifting controlling device of some sort
12 on top of the stack, or -- if I could find that one
13 section, we're talking about an air -- let me see, I
14 thought it was like a wind shifting device of some
15 sort to control the emissions. Is that whether the
16 stack is high and low, do you know what I'm talking
17 about?

18 Thank you very much for the opportunity to
19 address you.

20 MR. RHODES: Thank you very much, Mr. Mills.

21 Mr. Mowrey?

22 MR. MOWREY: I can talk from here.

23 Have you measured the effects of the discharge,
24 that is the plume from the plant up into the
25 microenvironment, including CO, NOx, particulate and

1 sulfuric acid? If so, what were your findings?

2 MR. LINERO: Well, we certainly haven't measured
3 it because it's not built yet, but it's been modeled,
4 it's been modeled as extensive reports, the experts
5 that did the work are here, Mr. Foley, who is a
6 consultant to the City, and Mr. Holladay. That would
7 be kind of a difficult question just to answer, but, I
8 mean, we'd like to spend time with you separately and
9 discuss it with you. I think we'd just had to take
10 your comment at this point, but, you know, get in
11 touch with us any time and we'll talk it over with you
12 in detail, and --

13 MR. MOWREY: You referenced other plants for
14 other things you used for comparisons. Have you found
15 comparable plants where you can make any kind of
16 conclusions that you can use as a basis for your
17 recommendations?

18 MR. LINERO: I think we could look at some other
19 plants and, you know, if you'd like, we will.

20 MR. MOWREY: Okay, thank you.

21 Is there indication that, since you're not going
22 to do SCR for the NOx -- excuse me, sulfuric acid,
23 there's not going to be sulfuric acid clouds or rain,
24 but on what I was given today as an update it still
25 shows, on page 29 under the PSD applicability summary,

1 under sulfuric acid mist, an increase, from 3.0 to
2 8.6. I mean, that's, that's almost a 50 percent
3 increase, so can you explain that to us?

4 MR. COSTELLO: Why the increase?

5 MR. MOWREY: Yes. You said there wouldn't be
6 unless you went to SCR, yet -- and we're not, but yet
7 there still is, so I'm just troubled how to --

8 (End of tape 1, side 2.)

9 A VOICE: Give me the chart number, because this
10 means no --

11 A VOICE: Chart number?

12 A VOICE: Yes.

13 A VOICE: Table 2 there.

14 A VOICE: Yes.

15 A VOICE: It says back here --

16 A VOICE: It's just the same as the (INAUDIBLE).

17 A VOICE: I (INAUDIBLE).

18 A VOICE: Is that your chart?

19 MR. COSTELLO: The sulfur in the fuel
20 predominantly forms sulfur dioxide when it's
21 combusted. Some small fraction, a couple of percent
22 of that, will go to sulfur trioxide and that becomes
23 sulfuric acid mist, and it's purely a function of the
24 amount of sulfur that's in the system, so -- from here
25 to the past (INAUDIBLE) where the sulfuric acid mist

1 was three tons per year, it will go up a little bit,
2 but not significantly in terms of PSD. They didn't
3 trigger a rule requirement.

4 MR. MOWREY: Let me just suggest that from three
5 tons to 8.6 tons --

6 MR. COSTELLO: Right.

7 MR. MOWREY: I mean, that's more than twice as
8 much.

9 MR. LINERO: Let me help out, let me help out.

10 Realistically, realistically, there will probably
11 be no change. What they -- perhaps what they have
12 there is a limit. I think what's happening is it's
13 lower, in the lower numbers, in the lower numbers it
14 may have to do, we've talked about so numbers that the
15 method of estimating, the inherent error, the method
16 of estimating may be later in the magnitude of the
17 number that's being estimated, but we'll look into
18 that and we'll reconcile that. I believe it's just,
19 it's just the methods that are being used to
20 estimate. I don't think there is a technical
21 explanation for that. I would expect the emissions to
22 be -- sulfuric acid to be no more after than before,
23 probably about the same.

24 MR. MOWREY: And on that same chart, while we're
25 looking at it, it appears that everything, with the

1 exception of SO2/NOx, do increase. Most
2 dramatically, CO increases by 127 tons a year, as well
3 as the VOC, fluorides, mercury, et cetera. So there
4 are significant increases most -- in every one of
5 those with the exception of the two you've indicated,
6 NOx and CO. Does that trouble you or concern you?

7 A VOICE: Well, they're just relative and it
8 doesn't matter.

9 MR. LINERO: Yes, from an absolute point of view,
10 those increases, those increases are very -- are
11 actually small. They sound like big numbers but
12 they're actually small. Realistically, those, the
13 actual numbers that they will measure will probably be
14 about the same as in the past, maybe lower. What
15 happens is that when you write a permit on certain
16 things, you have to have, you have to have a number
17 that you're certain you won't exceed, and I think
18 that's probably, again, that's probably the estimated
19 maximum compared to perhaps the actual historical
20 emission.

21 But the numbers, you know, we're concerned about
22 all air pollution, but those numbers are actually
23 very, very low, and I'd be happy to share with you
24 some typical numbers of clean facilities that are ten
25 times as high as those.

1 MR. LAWHON: You have to see our concern when
2 all we're hearing is this new modern facility --

3 MR. LINERO: Yes.

4 MR. LAWHON: -- is going to be better for
5 everyone, better for the environment, for the
6 atmosphere, but by the chart that you have given us,
7 it's worse, and yet now you say the chart's not right,
8 so it's a real concern for us.

9 MR. MILLS: With this in the air mixing with the
10 groundwater, this may actually run former Governor
11 Kirk off from stealing the water here because we're
12 going to pollute it with all this --

13 MR. LAWHON: We're already got warnings from the
14 State that, every week from not eating fish for
15 mercury (INAUDIBLE) because of the mercury.

16 MR. COSTELLO: I'd like to say something. You've
17 got to keep in perspective, they're just firing
18 predominantly natural gas at this plant, so these
19 plumes that you've talked about, they don't exist in
20 the field to begin with, to a measurable degree. I
21 mean, you burn a lot of it over --

22 MR. LAWHON: So this chart is not burning natural
23 gas?

24 MR. COSTELLO: I think this reflects burning
25 natural gas and some quantity of fuel oil. I don't

1 recall what it --

2 MR. LAWHON: Why have we got this chart? If this
3 is not what the City of Tallahassee is going to do,
4 why even put this up here? It doesn't make sense.

5 MR. COSTELLO: What it is, it's a conservative
6 estimate of the worst tonnage per year of each of
7 these pollutants that we regulate in the PSD program,
8 if that unit was operated completely, all year round,
9 never shut off. Past actuals are best guesses for a
10 lot of these pollutants. No stack test has been
11 used.

12 MR. LAWHON: Back up just a second. Now, you
13 said if it runs year-round. Now, you said it may only
14 have a shutdown maybe once a month for one day, or --
15 pretty much it's going to run 24 hours a day, 360 days
16 a year, 350 days a year. Is this, this worst case
17 scenario, is that with natural gas?

18 MR. COSTELLO: No equipment can run continuously
19 like that. They will have to, particularly once a
20 year they shut it down for probably a week for an
21 annual outage.

22 MR. OVEN: Marty, how was this chart derived?
23 Was it derived solely on natural gas, solely on --

24 MR. COSTELLO: It was derived --

25 MR. OVEN: -- the oil, or a combination of both?

1 MR. COSTELLO: A combination of both. A small
2 amount of oil, mostly gas.

3 MR. OVEN: And are you saying that the
4 predominant source of mercury and certain things like
5 that will primarily come from the oil and not the gas?

6 MR. COSTELLO: Yes. Yes. And again, these
7 numbers are relatively small.

8 MR. LAWHON: Well, there again, everybody has
9 tried to voice this sulfuric acid mist, I have several
10 problems. If that's true, you know, we don't need
11 that. We don't need that. Even if it's not a
12 significant amount to you, it's more than double what
13 we've got now, whatever that may be. We don't need
14 that.

15 MR. MOWREY: Could I ask one more question?

16 A VOICE: Sure thing.

17 MR. MOWREY: We notice -- it appears from the
18 material that about a million gallons of water a day
19 that evaporates into the atmosphere, an air quality
20 issue.

21 Could you tell us, if you know, approximately how
22 much of that might come from the river as opposed to
23 the wastewater plant? Is it going to be mixed in the
24 cooling tower, and then -- (INAUDIBLE) question, one
25 more part to it -- certainly coming, the effluent from

1 the wastewater system is going to have a chlorine
2 additive, what's the effect of heating chlorine and
3 dispersing it into the air?

4 MR. COSTELLO: I think I can answer that
5 question.

6 The cooling tower will predominantly be fed by
7 river water, and I think it's about 1,000 gallons an
8 hour, is that right?

9 A VOICE: A minute.

10 MR. COSTELLO: 1,000 gallons a minute from the
11 river. About one percent of that flow is going to
12 come from the St. Marks wastewater treatment plant.
13 All of the effluent in that plant will go to this
14 cooling tower, and that will represent about one
15 percent of the total flow going to the cooling tower.

16 MR. MILLS: Except when it's shut down for these
17 maintenance periods?

18 MR. COSTELLO: Yes, I think when it's shut down
19 they have a storage tank on site where they're going
20 to pump the wastewater from St. Marks (INAUDIBLE) and
21 then pump (INAUDIBLE).

22 MR. MOWREY: We had a little difficulty
23 converting gallons per minute to gallons per hour,
24 gallons per day, but we think, the little committee
25 we've met, we think we determined that just under a

1 million gallons a day. You've talked about water
2 you're going to pull from the river to use for
3 cooling, out of which approximately one million
4 gallons will evaporate. It seems like that's
5 increased from approximately .9 million gallons per
6 day to 60 million gallons a day. Is that reasonably
7 accurate? Withdrawn from the river, not returned.

8 MR. COLLETTE: That's almost a certification
9 issue.

10 MR. OVEN: It is a certification issue, really.
11 These air people haven't looked at how much water
12 came from downstream --

13 MR. LINERO: But let's, we'll take the question
14 down and forward it to the --

15 MR. OVEN: Well, it's not a PSD issue.

16 MR. MOWREY: Well, it only was in the event that
17 it -- that water is part of the water going in the air
18 and mixes with the wastewater, it is relevant to the
19 air quality, certainly.

20 A VOICE: And if it --

21 MR. MOWREY: If most of it is river water as
22 opposed to being mixed with wastewater, then we won't
23 worry about it.

24 MR. OVEN: Most of it is river water. Now, I
25 believe that the treated effluent from the City of St.

1 Marks sewage treatment plant is probably going to go
2 into the on-site water treatment system, before it
3 ever gets to the cooling tower.

4 MR. MILLS: Which is the chlorination process.

5 MR. COSTELLO: No, I don't think that's
6 accurate. I think it's treated by the City and then
7 it will be put in --

8 MR. OVEN: I doesn't necessarily go directly to
9 the cooling tower. Maybe that's --

10 MR. COSTELLO: Yes, I asked that (INAUDIBLE).

11 MR. LAWHON: Did you ever give an answer, I
12 didn't understand it if you did, on what effect it
13 has, the chlorine would have in the cooling tower.

14 MR. LINERO: The chlorine would be heated in the
15 water and evaporate then, the heated air, into those
16 plumes floating around.

17 MR. MOWREY: What would the medical effect of
18 that be?

19 MR. COSTELLO: It's a wash, because the City of
20 St. Marks chlorinates the water now and they dump it
21 in the river, and it evaporates eventually, so whether
22 you do it --

23 MR. LAWHON: But it's not being heated and thrown
24 up into the --

25 MR. COSTELLO: Yes, but chlorine is pretty

1 volatile. I mean, like a swimming pool, you have to
2 keep adding chlorine every week -- it doesn't stay in
3 water. It makes its way to the atmosphere, basically.

4 A VOICE: Howard (INAUDIBLE).

5 MR. RHODES: There may be, I don't know. Most
6 plants do --

7 MR. MILLS: Yes, that's what people are asking,
8 because of the smell around pools of chlorine. I
9 mean, are they going to smell like a chlorine cloud up
10 there?

11 MR. RHODES: No.

12 MR. MILLS: It will be that dispersed?

13 MR. RHODES: Well, first of all, the chlorine
14 tends to react with the various organic compounds in
15 the treated sewage effluent to start with. That
16 consumes a lot of it. But because of concerns of
17 chlorinated hydrocarbons getting into our surface
18 waters, in recent years the Department has been
19 requiring sewage treatment systems to dechlorinate
20 before discharge, then it's chemically treated before
21 discharge, so if this is done before it ever comes to
22 the, the Purdom unit, there may be zero if any
23 chlorine to speak of coming over there, so you will
24 not be dealing with a, a free, you should not be
25 dealing with free chlorine radicals coming into the

1 cooling tower.

2 MR. LAWHON: But you don't know if that's true?

3 MR. RHODES: At this point I don't know. I don't
4 know how it's treated, but that's something we could
5 check.

6 MR. COSTELLO: I asked that question this evening
7 and the answer I was given was it's not dechlorinated
8 coming from the wastewater treatment plant
9 (INAUDIBLE).

10 A VOICE: Okay.

11 MR. MOWREY: One more question, just one more.

12 I believe you said that your concern in the
13 report dealing with air quality that we're not dealing
14 in this case with anybody doing any tradeoff or --
15 like you might do in zoning, swap off some density,
16 having to purchase increments of air quality as a
17 tradeoff for emissions which you'd see getting to
18 safe levels. We're looking instead at measuring, and
19 I would assume you're measuring in accordance with the
20 standards in Chapter 62 of the Administrative Code.
21 Those are maximum permissible rates, I would guess.
22 Is that how y'all apply those?

23 MR. LINERO: The increment is based solely upon
24 air -- computer dispersion modeling. It was totally
25 based on that. It's not based -- it's based on actual

1 -- it's based on what, for SO2 and PM, what happened
2 in 1977 is considered a baseline date, so you're
3 taking emissions of 1977, from whatever, all these
4 sources in this area, and it slows them to a certain
5 level, and then any new sources or modifications would
6 be modeled against that baseline and this, the
7 increases in the ground level concentrations cannot be
8 greater than these numbers, but it has -- it doesn't
9 have anything to do with based on buying on things and
10 it's not made, it's based on modeling.

11 MR. MILLS: And this modeling has shown you that
12 this plant has been put out a clear discharging
13 background in 1977?

14 MR. LINERO: Well, what it's showing is -- in
15 some cases, it is showing that, for SO2 and PM, in
16 many cases, it's very low, it's barely above zero.
17 For one reason, they -- the SO2 is being frozen at 80
18 tons a year, whereas it had permitted allowable for
19 much higher, and I'm not sure exactly what the numbers
20 were, but back in 1977 it would have been higher,
21 possibly. I'm not sure what -- but that's where the,
22 why the numbers are extremely low.

23 MR. RHODES: Well, in 1977 the plant was burning,
24 say, two and a half percent sulfur oil. It probably
25 could have been used four, five, and six, seven, you'd

1 be putting out quite a bit of SO2. You shift to
2 natural gas, you would come down a whopping amount,
3 and here you stay with natural gas, you're staying
4 down at that low level. This is why you, you do cap
5 on SO2, it's a tremendous drop from 1977 numbers.

6 By the same token, though, you'd have to look at
7 the impact of Hopkins Unit No. 2, which has been built
8 since '77, (INAUDIBLE) in '77, and that was a source
9 that would be consuming air quality, and that would
10 have been looked at in meteorological situations.

11 MR. LAWHON: Where is that located?

12 MR. RHODES: It's on Getty Road, west of
13 Tallahassee.

14 MR. COLLETTE: About three miles.

15 MR. RHODES: Close to Lake Talquin.

16 A VOICE: -- what source was included in this
17 modeling.

18 MR. RHODES: Yes. I mean, part of the analysis,
19 you look at all the new air pollution sources that
20 have been built in this area since, say, 1977.

21 A VOICE: You say the area is a about 50
22 kilometer circle around --

23 MR. RHODES: Yes.

24 A VOICE: Basically, there were very few, if any,
25 air pollution generators down in this neck of the

1 woods back during that time (INAUDIBLE).

2 MR. RHODES: You also have to look at what else
3 the City of Tallahassee added up around Tallahassee.
4 That's been looked at, so --

5 MR. MILLS: So the air quality that you're
6 allowed to meet now is based on the air quality in the
7 Tallahassee-Leon area figured in with this area of
8 mine, even though the site is going to be generating
9 here, we're using --

10 MR. RHODES: Well, like I say, federal
11 regulations require the Department consider all the
12 sources that have been constructed, put in operation
13 in the area of influence. Certainly what Tallahassee
14 built up in Tallahassee in the '70s has an impact down
15 in Wakulla County.

16 MR. COLLETTE: The way I understand it.

17 A VOICE: Yes.

18 A VOICE: Air quality-wise, yes.

19 A VOICE: When the wind is from southwest to
20 northeast.

21 MR. LINERO: Well, the model takes into account
22 more than just the prevailing wind. It's going to
23 look at winds every hour. If we use a data set of
24 five years, we don't look at one that's every hour of
25 the day for a whole year, plus it goes out to five

1 years, so it's not just prevailing wind that has an
2 impact, but -- count more than that.

3 MR. RHODES: If you look at actual wind rows,
4 wind, and just go around the clock, it goes with
5 seasons. I mean, it goes around the compass, I should
6 say, because of the seasons. There are certain times
7 of the year, like right now, you start getting a lot
8 more northwesterly flow. I mean, different times of
9 the year you will get winds from the north, from the
10 northwest, north-northeast, and other times of the
11 year in the summer months you're going to get a
12 southerly flow because of the sea breeze effect. Of
13 course, at nighttime you have a reversal of that
14 seabreeze effect, you get the land breeze, so we have
15 to, the Department has to look at the entire suite of
16 winds that are available throughout the year, look at
17 the meteorology.

18 This is why we have to look at air quality impact
19 and sources, in let's say Leon County, on Wakulla
20 County as part of the (INAUDIBLE).

21 MR. COLLETTE: From a lay perspective, my
22 understanding, and I stand to be corrected by the air
23 people and the engineers, but the purpose for this
24 requirement was that -- you can eat up a whale by
25 little nibbles at a time, and the purpose of PSD is

1 we're going to look, and if somebody else has added
2 pollutants to the air, we're not going to allow them
3 to have another little nibble until eventually there's
4 a bunch of little nibbles adding pollutants in an area
5 and all of a sudden the air is out of quality, so
6 we're consider everything that's discharged and limit
7 this new discharge by what's in the air already.

8 A VOICE: Let me ask --

9 A VOICE: Yes.

10 MR. LINERO: (INAUDIBLE) the City of Tallahassee,
11 the allowable air pollution that's allowed on the
12 ground in that area, in the Tallahassee area, the
13 additional pollution since, say, 1977 can be a factor
14 of at least 10 times the amount that's allowed in this
15 general area, and the amount that's allowed in this
16 area has to consider whatever, whatever sources are
17 around here within 50 miles, so basically this is an
18 area that the law requires us to, to scrutinize a lot
19 more carefully, to be a lot more conservative in the
20 modeling and, again, this is where, this is where I'd
21 want to be, right next to that park. You've got a
22 (INAUDIBLE) burning natural gas, you've got caps on
23 emission, and I would be more than happy if you want
24 to visit me sometime at the office, it's not too far
25 away, I'll show you some other projects, I'll show you

1 the cleanest projects in the state, and --

2 MR. MILLS: Where I was coming from is it seems
3 like this county is getting penalized for the very air
4 that's in the Tallahassee and Leon area. We're being,
5 that's dropping the quality here because they have
6 problems with the air up there. You're taking in this
7 area for that, to actually clean that sampling up.
8 You're using some of this air and some of that air,
9 and over the urban areas you can have more pollution.

10 MR. LAWHON: That was the question I have. I
11 mean, say that Wakulla County wants to build a power
12 plant in a couple of years. We're going to be held to
13 restrictive guidelines because you're already using
14 some of our air quality here.

15 MR. OVEN: Try to make it -- when we look at,
16 say, the impacts on the St. Marks Wildlife Preserve,
17 which is basically south of the Purdom plant, right,
18 south and east?

19 A VOICE: Very little south, mostly east. Mostly
20 ocean to the south.

21 MR. OVEN: Yes, but there is a strip of it that's
22 to the south, so south and east. The Purdom plant has
23 a certain air quality impact there. We don't look
24 just at that impact. I mean, we do look at that
25 impact, but we also have to consider the air that's

1 coming down from Tallahassee.

2 MR. MILLS: That a good three or four times a
3 year that that does that.

4 MR. OVEN: Whatever. It doesn't make any
5 difference, it happens, we are forced to look at that.
6 So there are certain meteorological days when the
7 plume from the Arvah Hopkins power plant west of
8 Tallahassee will come directly over the Purdom plant,
9 going to the St. Marks Wildlife Refuge.

10 We have to evaluate that with the air quality
11 dispersion model to see whether or not the air quality
12 increment, Class I air quality increment which is the
13 most restrictive in the St. Marks Wildlife Preserve,
14 is complied with.

15 We've done that, and it does not violate it,
16 under those worst case conditions. We don't look at
17 the best case, we have to look at the worst case, and
18 line up the major sources, and does it pick up
19 something from what -- not necessarily that DuPont
20 puts out any sulfur or anything like that, or any
21 other oil companies in the area or anybody else
22 generating something. They don't like to be looked
23 at, and that's part of this PSD process.

24 So you're not necessarily getting penalized by
25 what Tallahassee has done up in Leon County. In some

1 cases it may help you. It's -- may prevent other
2 people from coming in.

3 Now, as far as whether or not you want to build
4 your own power plant, it depends on where you want to
5 build it as to whether or not, what the City will do,
6 St. Marks, will either help or hurt it.

7 A VOICE: The last comment about the keeping
8 other people (INAUDIBLE) they're going to take action
9 (INAUDIBLE) City of Tallahassee.

10 MR. LINERO: If you wanted to build your own
11 power plant, they, I believe I'm not mistaken if I
12 were to say that they have just put some of that
13 increment back onto the table because they've given up
14 their permanent right to pollute with 9,000 tons a
15 year of sulfur dioxide, and they have put that back on
16 the table. That wasn't there before. Even if they
17 didn't use that, those permitting words, they
18 basically said, here, we're giving them back again and
19 you know you can try to tap them and so forth, we just
20 don't want to exceed the increments (INAUDIBLE) in the
21 national ambient air quality standards, so --

22 MR. OVEN: Or some electric co-op or somebody
23 else who wants to build a power plant, now, hey, maybe
24 here's a place they can put one, because there's --
25 that's what might be your revenue stream.

1 A VOICE: (INAUDIBLE) federal and state statutes
2 are. They're taking that increment of dirty air and
3 setting it out on the table. It doesn't go away, it's
4 out there for everybody else to use, to bid on.

5 MR. MOWREY: Not bid on.

6 MR. LINERO: It would still have to be modeled
7 and you still, you still can't increase the national
8 ambient air quality standards, and I can tell you, it
9 would wind up being clean facilities like this one.
10 Nobody is going to come here and use that increment
11 with a, you know, with a very polluting facility, but
12 the increment is back on the table and that's probably
13 the thing that surprised me the most about this
14 project, that that happened, and that usually doesn't
15 happen. These rights are guarded jealously by the
16 people that I have dealt with throughout the industry.

17 MR. RHODES: I don't want to preempt anyone, but
18 are there any additional questions?

19 In that case, I will declare the public meeting
20 over. I appreciate all of you coming out tonight. We
21 really appreciate the opportunity to try to address
22 some of your questions.

23 (End of tape 2.)

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C E R T I F I C A T E

STATE OF FLORIDA)
COUNTY OF LEON)

I hereby certify that the foregoing transcript is of a tape-recording taken down by the undersigned, and the questions and answers thereto were reduced to typewriting under my direction;

That the foregoing pages 2 through 89 represent a true, correct, and complete transcript of the tape-recording;

And I further certify that I am not of kin or counsel to the parties in the case; am not in the regular employ of counsel for any of said parties; nor am I in anywise interested in the result of said case.

Dated this 8th day of June, 1998.

Clara C. Rotruck



CLARA C. ROTRUCK
MY COMMISSION # CC412184 EXPIRES
November 7, 1998
BONDED THRU TROY FAIN INSURANCE, INC.

CLARA C. ROTRUCK
Court Reporter



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW
ATLANTA, GEORGIA 30303-8909

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OCT 20 1997

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AIR REGULATION

4ARB-APT

Martin Costello, P.E.
New Source Review Section
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

SUBJ: City of Tallahassee Utility Services Purdom Unit 8
(PSD-FL-239)

Dear Mr. Costello:

By letter dated September 15, 1997, you requested that U. S. Environmental Protection Agency (EPA) Region 4 provide comments on the proposed custom monitoring schedule as highlighted on pages 8 and 9 of the draft Prevention of Significant Deterioration (PSD) permit. Additionally, you asked for comments on the proposed specific condition F1 which would allow the use of the title IV required NO_x CEMS for demonstrating compliance. After reviewing the conditions and the applicable guidance, our comments are as follows.

SO₂ Custom Monitoring Schedule

The currently applicable guidance for custom monitoring schedules is the memorandum dated August 14, 1987, from John Rasnic to Air Branch Chiefs entitled "Authority for Approval of Custom Fuel Monitoring Schedules Under NSPS Subpart GG" (enclosed). The proposed PSD permit is not consistent with this guidance in that the permit does not require sampling twice per month for six months and once per quarter for six quarters prior to going to semi-annual testing. Although the guidance acknowledges a growing trend toward the use of pipeline quality natural gas and the possible need to re-evaluate the sulfur monitoring requirement, the guidance has yet to be updated. C

Alternative NO_x Monitoring

The currently applicable guidance for alternative NO_x monitoring for sources subject to NSPS Subpart GG is found in the memorandum dated March 12, 1993, from John Rasnic to Karl Mangels, entitled "Approval of the Use of NO_x CEMS as an Alternative Method to the Water-fuel Ratio Monitoring under NSPS Subpart GG" (enclosed). The proposed permit is not consistent with this policy since the permit does not require that the results used to verify compliance with the NSPS limit be expressed in ISO standard conditions. The proposed NO_x emissions limits (12 ppm gas/42 ppm oil, 30-day average) appear to be lower



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

AUG 14 1987

OFFICE OF
AIR AND RADIATION

MEMORANDUM

SUBJECT: Authority for Approval of Custom Fuel Monitoring
Schedules Under NSPS Subpart GG

FROM: John B. Rasnic, Chief *John B Rasnic*
Compliance Monitoring Branch

TO: Air Compliance Branch Chiefs
Regions II, III, IV, V, VI and IX

Air Programs Branch Chiefs
Regions I-X

The NSPS for Stationary Gas Turbines (Subpart GG) at 40 CFR 60.334(b)(2) allows for the development of custom fuel monitoring schedules as an alternative to daily monitoring of the sulfur and nitrogen content of fuel fired in the turbines. Regional Offices have been forwarding custom fuel monitoring schedules to the Stationary Source Compliance Division (SSCD) for consideration since it was understood that authority for approval of these schedules was not delegated to the Regions. However, in consultation with the Emission Standards and Engineering Division, it has been determined that the Regional Offices do have the authority to approve Subpart GG custom fuel monitoring schedules. Therefore it is no longer necessary to forward these requests to Headquarters for approval.

Over the past few years, SSCD has issued over twenty custom schedules for sources using pipeline quality natural gas. In order to maintain national consistency, we recommend that any schedules Regional Offices issue for natural gas be no less stringent than the following: sulfur monitoring should

be bimonthly, followed by quarterly, then semiannual, given at least six months of data demonstrating little variability in sulfur content and compliance with §60.333 at each monitoring frequency; nitrogen monitoring can be waived for pipeline quality natural gas, since there is no fuel-bound nitrogen and since the free nitrogen does not contribute appreciably to NO_x emissions. Please see the attached sample custom schedule for details. Given the increasing trend in the use of pipeline quality natural gas, we are investigating the possibility of amending Subpart GG to allow for less frequent sulfur monitoring and a waiver of nitrogen monitoring requirements where natural gas is used.

Where sources using oil request custom fuel monitoring schedules, Regional Offices are encouraged to contact SSCD for consultation on the appropriate fuel monitoring schedule. However, Regions are not required to send the request itself to SSCD for approval.

If you have any questions, please contact Sally M. Farrell at FTS 382-2875.

Attachment

cc: John Crenshaw
George Walsh
Robert Ajax
Earl Salo

Enclosure

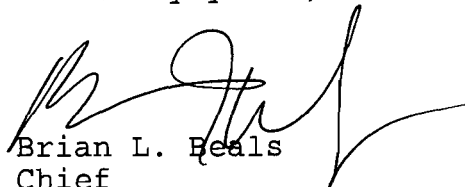
Conditions for Custom Fuel Sampling Schedule for Stationary Gas Turbines

1. Monitoring of fuel nitrogen content shall not be required while natural gas is the only fuel fired in the gas turbine.
2. Sulfur Monitoring
 - a. Analysis for fuel sulfur content of the natural gas shall be conducted using one of the approved ASTM reference methods for the measurement of sulfur in gaseous fuels, or an approved alternative method. The reference methods are: ASTM D1072-80; ASTM D3031-81; ASTM D3246-81; and ASTM D4084-82 as referenced in 40 CFR 60.335(b)(2).
 - b. Effective the date of this custom schedule, sulfur monitoring shall be conducted twice monthly for six months. If this monitoring shows little variability in the fuel sulfur content, and indicates consistent compliance with 40 CFR 60.333, then sulfur monitoring shall be conducted once per quarter for six quarters.
 - c. If after the monitoring required in item 2(b) above, or herein, the sulfur content of the fuel shows little variability and, calculated as sulfur dioxide, represents consistent compliance with the sulfur dioxide emission limits specified under 40 CFR 60.333, sample analysis shall be conducted twice per annum. This monitoring shall be conducted during the first and third quarters of each calendar year.
 - d. Should any sulfur analysis as required in items 2(b) or 2(c) above indicate noncompliance with 40 CFR 60.333, the owner or operator shall notify the State Air Control Board of such excess emissions and the custom schedule shall be re-examined by the Environmental Protection Agency. Sulfur monitoring shall be conducted weekly during the interim period when this custom schedule is being re-examined.
3. If there is a change in fuel supply, the owner or operator must notify the State of such change for re-examination of this custom schedule. A substantial change in fuel quality shall be considered as a change in fuel supply. Sulfur monitoring shall be conducted weekly during the interim period when this custom schedule is being re-examined.
4. Records of sample analysis and fuel supply pertinent to this custom schedule shall be retained for a period of three years, and be available for inspection by personnel of federal, state, and local air pollution control agencies.

than the NSPS limit (150 ppm, 1-hour average). Accordingly, if the source is in compliance with the PSD limit, it should also be in compliance with the NSPS limit. If, however, the source is in violation of the PSD limit, there would be a point at which the data would have to be corrected to ISO standard basis in order to tell whether or not the NSPS limit had been violated also.

Thank you for the opportunity to review and comment on this package. If you have any questions on these comments, please contact David McNeal of my staff at (404) 562-9102 or Gregg Worley of my staff at (404) 562-9141.

Sincerely yours,



Brian L. Beals
Chief
Preconstruction/HAP Section
Air & Radiation Technology
Branch

Enclosure

cc: Jile
S. Sheplak, BAR
M. Harley, BAMMS
g. Curtis, C of T

THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

In the Matter of an
Application for Permit by:

OGC CASE NO. _____

City of Tallahassee, Utility Services
300 South Adams Street
Tallahassee, FL 32301

DRAFT Permit No.: PSD-FL-239
Sam O. Purdom Generating Station
Wakulla County

**NOTICE OF WITHDRAWAL OF REQUEST
FOR EXTENSION OF TIME**

The City of Tallahassee (Tallahassee), by and through undersigned counsel, hereby withdraws its Request for Extension of Time to file a petition for formal administrative proceedings in accordance with Chapter 120, Florida Statutes. Tallahassee filed its third Request for Extension of Time on August 13, 1997, in response to the "Intent to Issue PSD Permit" (Permit No. PSD-FL-239) for the Sam. O. Purdom Generating Station located in Wakulla County, Florida, to negotiate certain changes in the draft proposed PSD permit and Best Available Control Technology (BACT) Determination with the Department of Environmental Protection (Department). Tallahassee withdraws its Request because the Department has agreed to issue the final permit and BACT Determination with changes negotiated with Tallahassee, as reflected in the revised draft permit and BACT Determination received August 28, 1997, (attached as Exhibit A).

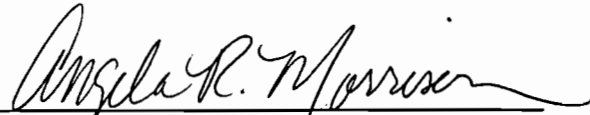
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Respectfully submitted this 29th day of August, 1997.

HOPPING GREEN SAMS & SMITH, P.A.

A handwritten signature in cursive script, reading "Angela R. Morrison". The signature is written in black ink and is positioned above a horizontal line.

Angela R. Morrison, Fla. Bar No. 0855766
123 South Calhoun Street
Post Office Box 6526
Tallahassee, FL 32314
(904) 222-7500

**Attorney for CITY OF TALLAHASSEE, UTILITY
SERVICES**

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of the foregoing has been furnished to the following
by U.S. Mail on this 29th day of August, 1997:

Clair H. Fancy, P.E.
Chief
Bureau of Air Regulation
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2600

Charles T. Collette, Esq.
Office of General Counsel
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2600



Attorney

Permittee:

City of Tallahassee
Utilities Services
300 South Adams Street
Tallahassee, FL 32301

FID No.	1290001
PSD No.	PSD-FL-239
SIC No.	4911
PPS No.	PA97-36
Expires:	5 years from issuance

Authorized Representative:
Jennette Curtis
Environmental Administrator

Project and Location:

Permit for the construction of Unit 8, a combined cycle combustion turbine generating system at the Purdom Generating Station, located on the north end of the City of St. Marks on SR 363, Wakulla County, Florida.

UTM: Zone 16 ; 769.611 km E ; 3339.767 km N

Statement of Basis:

This construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and the Florida Administrative Code (F.A.C.) Chapters 62-4, 62-204, 62-210, 62-212, 62-296, 62-297. The above named permittee is authorized to modify the facility in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

Attached appendices and Tables made a part of this permit:

Appendix BD	BACT Determination
Appendix GC	Construction Permit General Conditions

Howard L. Rhodes, Director
Division of Air Resources
Management

Subsection A. Facility Description

The City of Tallahassee is authorized to install a new combined cycle combustion turbine system, Unit 8, at the existing Purdom facility consisting of a 160 MW (nominal rating) GE MS7231FA combustion turbine with DLN-2.6 (or later version) dry low NO_x (gas) and water injection (diesel) burners and a nonfired heat recovery steam generator (HRSG) with a nominal 90 MW steam turbine. The compressor inlet air will be conditioned by an evaporative cooler when needed. The turbine will be started using the generator and a static start system. A new 200 foot stack and a cooling tower will be added to the facility for Unit 8.

Unit 8 will be located at the City's Sam O. Purdom Generating Station in St. Marks, Wakulla County. Existing steam generating Units 5 and 6 will be permanently shut down once Unit 8 has completed the initial performance test for natural gas firing. Other existing units at the plant consist of: Unit 7, a pre-NSPS boiler with a nominal rating of 44 MW fired by natural gas, residual fuel oil or distillate fuel oil; two pre-NSPS distillate fuel oil or natural gas fired combustion turbines with a nominal rating of 12.3 MWs each (GT1 and GT2); and a Subpart Dc auxiliary steam boiler fired by natural gas.

Subsection B. Regulatory Classification

The Purdom Generating Station is classified as a major air pollutant emitting facility. Air pollutant emissions are over 100 TPY for nitrogen oxides (NO_x) and carbon monoxide (CO).

This facility is on the list of the 28 Major Facility Categories in Table 62-212.400-1. This facility is also classified as a Title IV and Title V facility.

Subsection C. Relevant Documents:

The documents listed below are the basis of the permit. They are specifically related to this permitting action. These documents are on file with the Department.

Application (as revised 7/16/97)

Department's letter dated 5/1/97

Department of Interior's letter dated 1/21/97

[EPA's letter dated ...]

[Third party's letters dated ...]

Subsection A. Administrative

1. Regulating Agencies: All documents related to applications for permits to operate, reports, tests, minor modifications and notifications or for permits to construct or modify an emission unit(s) *subject to the Prevention of Significant Deterioration (PSD) or to Nonattainment Areas (NA) Review requirements* should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (FDEP) located at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, Mail Station 5505, and phone number (850) 488-1344.
2. General Conditions: The owner and operator is subject to and shall operate under the attached General Permit Conditions G.1 through G.15 listed in *Appendix GC* of this permit. General Permit Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. [Rule 62-4.160, F.A.C.]
3. Terminology: The terms used in this permit have specific meanings as defined in the corresponding chapters of the Florida Administrative Code.
4. Forms and Application Procedures: The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. [Rule 62-210.900, F.A.C.]
5. Expiration: This air construction permit shall expire five years from the date of issuance.

Subsection A. Specific Conditions:

A. General Operation Requirements

Applicable Regulations: Unless otherwise indicated in this permit, the construction and operation of the subject emission unit(s) shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of Chapter 403, F.S. and Florida Administrative Code Chapters 62-4, 62-103, 62-204, 62-210, 62-212, 62-213, 62-214, 62-296, 62-297; and the applicable requirements of the Code of Federal Regulations Section 40, Part 60 including Subpart A and GG (1997 version), adopted by reference in the Florida Administrative Code regulation [Rule 62-204.800 F.A.C.]. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting requirements or regulations. [Rule 62-210.300, F.A.C.]

2. The maximum heat input rates, based on the lower heating value (LHV) of each fuel to Purdom Unit 8 at ambient conditions of 95°F temperature, 60% relative humidity, and 14.7 psi pressure shall not exceed 1,467.7 mmBtu/hr when firing natural gas, nor 1,659.5 mmBtu/hr when firing No. 2 fuel oil. These maximum heat input rates will vary depending upon ambient conditions and the combustion turbine characteristics. Manufacturer's curves corrected for site conditions or equations for correction to other ambient conditions shall be provided to the Department of Environmental Protection (DEP) within 45 days of completing the initial compliance testing. These curves or equations shall be used to establish the maximum allowable heat inputs at other ambient conditions for compliance determinations.
3. Purdom Unit 8 may operate continuously (i.e., 8760 hours per year).
4. Only natural gas or No. 2 fuel oil with a maximum sulfur content of 0.05% by weight shall be fired in the combined cycle combustion turbine.
5. The permittee shall install duct module(s) suitable for possible future installation of SCR equipment on the combined cycle generating unit.
6. Dry low NOX combustors shall be used on Unit 8 when firing natural gas and water injection shall be used when firing No. 2 fuel oil for control of NOX emissions.
7. During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary.
8. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the owner or operator shall notify the Permitting Authority as soon as possible, but at least within (1) working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; the steps being taken to correct the problem and prevent future recurrence; and where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit and the regulations. [Rule 62-4.130, F.A.C.]
9. Operating Procedures: Operating procedures shall include good operating practices and proper training of all operators and supervisors. The good operating practices shall meet the guidelines and procedures as established by the equipment manufacturers. All operators (including supervisors) of air pollution control devices shall be properly trained in plant specific equipment. [Rule 62-4.070(3), F.A.C.]

10. The dry low NOX burner system shall be tuned upon initial operation to optimize emissions reductions and shall be maintained to minimize NOX emissions and CO emissions. While firing natural gas, operation of the unit when the dry low NOX burner system is in the diffusion firing mode shall be minimized.
11. Circumvention: The owner or operator shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rules 62-210.650, F.A.C.]

B. Emission Limits and Standards

The following shall apply upon completion of the initial compliance tests:

1. Best Available Control Technology. The following is a summary of the BACT determinations by DEP:

Table 1. Emission Limits

Pollutant	Fuel	BACT Standard
NOx	Gas	12 ppmvd @ 15 % O2 (a) (d)
	Oil	42 ppmvd @ 15 % O2 (a) (b) (d)
SO2	Gas	Good combustion
	Oil	Good combustion of low (0.05%) sulfur fuel oil
PM/PM10	Gas	Good combustion
	Oil	Good combustion of low (0.05%) sulfur fuel oil
Visible Emissions	Gas	10 percent opacity
	Oil	10 percent opacity
CO	Gas	25 ppmvd (c)
	Oil	90 ppmvd (c)

(a) 30-day rolling average excluding startup, shutdown, malfunction, and fuel switching.
 (b) Plus an allowance for fuel bound nitrogen using the formula provided in Condition B4.
 (c) By testing concurrent to RATA testing or by 3 one hour runs of Method 10.
 (d) Not corrected to ISO conditions.

2. Visible Emissions. Visible emissions shall not exceed 10 percent opacity when firing either natural gas or No. 2 fuel oil. Drift eliminators shall be installed on the cooling tower to reduce PM/PM10 emissions.
3. Oxides of Nitrogen. Oxides of nitrogen emissions when firing natural gas shall not exceed 12 ppmvd at 15% O2 on a 30-day rolling average basis (except during periods of startup, shutdown, malfunction or fuel switching), as measured by CEMS. When monitoring data is not available, substitution for missing data shall be handled as required by Title IV (40 CFR 75) to calculate of the 30 day rolling average.
4. Oxides of Nitrogen. Oxides of nitrogen emissions when firing No. 2 fuel oil shall not exceed 42

ppmvd at 15% O2 on a 30-day rolling average basis (except during periods of startup, shutdown, malfunction or fuel switching), as measured by CEMS, when fuel bound nitrogen(FBN) values are less than or equal to 0.015 percent. For fuel bound nitrogen values up to 0.03 percent, the allowance (and the adjusted standard) shall be determined, recorded, and maintained upon each new fuel delivery by the following formula:

$$\text{STD} = 0.0042 + F \text{ where:}$$

STD = allowable NOX emissions (percent by volume at 15 percent O2 and on a dry basis).

F = NOX emission allowance for fuel-bound nitrogen defined by the following table:

Fuel-Bound Nitrogen (% by Weight)	F (NOX % by Volume)
$0 < N \leq 0.015$	0
$0.015 < N \leq 0.03$	$0.04 (N - 0.015)$

where: N = the nitrogen content of the fuel (% by weight) Note: 0.0042 percent = 42 ppm

5. Oxides of Nitrogen. Beginning with the calendar year following successful completion of the initial performance test for Unit 8, annual emissions of NOX shall not exceed 467 tons per year from the Purdom facility (Unit 8, Unit 7, GT1, GT2, and the auxiliary boiler) on a calendar year basis, as measured by applicable compliance methods. [Requested by the applicant]
6. Sulfur Dioxide. Beginning with the calendar year following successful completion of the initial performance test for Unit 8, annual emissions of SO2 shall not exceed 80 tons per year from the Purdom facility (Unit 8, Unit 7, GT1, GT2, and the auxiliary boiler) on a calendar year basis, as measured by applicable compliance methods. [Requested by the applicant]
7. Carbon Monoxide. Carbon monoxide emissions when firing natural gas shall not exceed 25 ppmvd as measured by Method 10.
8. Carbon Monoxide. Carbon monoxide emissions when firing No. 2 fuel oil shall not exceed 90 ppmvd as measured by Method 10.

C. Excess Emissions

1. Excess emissions resulting from startup, shutdown, malfunction or fuel switching shall be permitted provided that best operational practices are adhered to and the duration of excess emissions shall be minimized but in no case exceed four hours in any 24-hour period for cold startup or two hours in any 24-hour period for other reasons unless specifically authorized by DEP for longer duration.
2. Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown or malfunction shall be prohibited pursuant to Rule 62-210.700, F.A.C
3. Excess Emissions Report: If excess emissions occur due to malfunction, the owner or operator shall notify DEP's Northwest District office within (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Department may request a written summary report of the incident. Pursuant to the New Source Performance Standards, excess emissions shall also be reported in accordance with 40 CFR 60.7, Subpart A. [Rules 62-4.130 and 62-210.700(6), F.A.C.]

D. Compliance Determination

1. Compliance with the allowable emission limiting standards shall be determined within 60 days after achieving the maximum production rate, for each fuel, at which this unit will be operated, but not later than 180 days of initial operation of the unit for that fuel, and annually thereafter as indicated in this permit, by using the following reference methods as described in 40 CFR 60, Appendix A (1997 version), and adopted by reference in Chapter 62-297, F.A.C.

Initial (I) compliance tests shall be performed on Unit 8 while firing each fuel (gas, oil). Annual (A) compliance tests shall be performed during every federal fiscal year (October 1 - September 30) pursuant to Rule 62-297.340, F.A.C., on Unit 8 as indicated. The following reference methods shall be used:

- Method 9 Visual Determination of the Opacity of Emissions from Stationary Sources (I, A); annual on oil if greater than 400 hours of oil firing; however, testing on gas is required only once every five years.

- Method 10 Determination of Carbon Monoxide Emissions from Stationary Sources (I, A). Testing may be conducted at less than capacity. Annual compliance testing may be conducted concurrent with the annual RATA testing required pursuant to 40 CFR 75 (gas only).

- Method 20 Determination of Oxides of Nitrogen and diluent emissions from Stationary Gas Turbines (I only, for compliance with 40 CFR 60 Subpart GG)

Determination of Oxides of Nitrogen emissions will be by a Continuous Emissions Monitoring System (CEMS). A CEMS operated and maintained in accordance with 40 CFR 75 may be used. Compliance with the NOX emissions standards in Table 1 shall be demonstrated with this CEMS system based on a 30 day rolling average. Based on CEMS data at the end of each operating day, a new 30 day average emission rate is calculated from the arithmetic average of all valid hourly emission rates during the previous 30 operating days.

Note: No other methods may be used for compliance testing unless prior DEP approval is received in writing. The DEP may request a special compliance test pursuant to Rule 62-297.340(2), F.A.C., when, after investigation (such as complaints, increased visible emissions, or questionable maintenance of control equipment), there is reason to believe that any applicable emission standard is being violated.

2. Notwithstanding the requirements of Rule 62-297.340, F.A.C., the exclusive use of fuel oil with a maximum sulfur content limit of 0.05% or less, by weight, is the method for determining compliance for SO₂ and PM₁₀. For the purposes of demonstrating compliance with the 40 CFR 60.333 SO₂ standard and the 0.05% S limit, fuel oil analysis using ASTM D2880-71 or D4294 (or equivalent) for the sulfur content of liquid fuels and D1072-80, D3031-81, D4084-82 or D3246-81 (or equivalent) for sulfur content of gaseous fuel shall be utilized in accordance with the EPA approved custom fuel monitoring schedule in Condition F.3. However, the permittee is responsible for ensuring that the procedures above are used for determination of fuel sulfur content. Analysis may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency pursuant to 40 CFR 60.335 (e) (1997 version). For the purposes of demonstrating compliance with the emissions caps (Conditions B5 and B6), natural gas and fuel oil supplier data for sulfur content may be submitted or the natural gas sulfur content referenced in 40 CFR 75 Appendix D may be utilized.
3. An initial test for CO, concurrent with the initial NOX test, is required. The initial NOX and CO test results shall be the average of three valid one-hour runs. The DEP's Northwest District office shall be notified, in writing, at least 30 days prior to the initial compliance tests and at least 15 days

before annual compliance test(s). Testing of emissions shall be conducted with the combustion turbine operating at permitted capacity. Permitted capacity is defined as 95-100 percent of the maximum heat input rate allowed by the permit, corrected for the average ambient air temperature during the test (with 100 percent represented by a curve depicting heat input vs. ambient temperature). If it is impracticable to test at permitted capacity, the source may be tested at less than permitted capacity. In this case, subsequent operation is limited by adjusting the entire heat input vs. ambient temperature curve downward by an increment equal to the difference between the maximum permitted heat input (corrected for ambient temperature) and 105 percent of the value reached during the test until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purposes of additional compliance testing to regain the permitted capacity. Compliance test results shall be submitted to the DEP's Northwest District office no later than 45 days after completion of the last test run.

E. Notification, Reporting and Recordkeeping

1. All measurements, records, and other data required to be maintained by the City of Tallahassee shall be retained for at least five (5) years following the date on which such measurements, records, or data are recorded. These records shall be made available to DEP representatives upon request.
2. Emission Compliance Stack Test Reports: A test report indicating the results of the required compliance tests shall be filed with the DEP NW District Office as soon as practical, but no later than 45 days after the last sampling run is completed. [Rule 62-297.310(8), F.A.C.]. The test report shall provide sufficient detail on the tested emission unit and the procedures used to allow the Department to determine if the test was properly conducted and if the test results were properly computed. At a minimum, the test report shall provide the applicable information listed in Rule 62-297.310(8), F.A.C.

F. Monitoring Requirements

1. The permittee shall install, calibrate, maintain, and operate a continuous emission monitor in the stack to measure and record the nitrogen oxides emissions from Unit 8. Thirty day rolling average periods when NOX emissions (ppmvd @ 15% oxygen) are above the BACT standards (12/42 ppmvd for gas/oil) shall be reported to the DEP Northwest District Office pursuant to Rule 62-4.160(8), F.A.C. The continuous emission monitoring systems must comply with the certification and quality assurance, and other applicable requirements from 40 CFR 75. Periods of startup, shutdown, malfunction, and fuel switching shall be monitored, recorded, and reported as excess emissions when emission levels exceed the standards in Table 1 following the format of 40 CFR 60.7 (1997 version). Subject to EPA approval, the NOx CEMS will be used in lieu of the water/fuel monitoring system and fuel bound nitrogen (FBN) monitoring required for reporting excess emissions in accordance with 40 CFR 60.334(c)(1), Subpart GG (1997 version). Subject to EPA approval, the calibration of the water/fuel monitoring device required in 40 CFR 60.335 (c)(2) (1997 version) will be replaced by the 40 CFR 75 certification tests of the NOX CEMS.
2. The following monitoring schedule for No. 2 fuel oil shall be followed: For all bulk shipments of No. 2 fuel oil received at the Purdom Station, an analysis which reports the sulfur content and fuel bound nitrogen content of the fuel shall be provided by the fuel vendor or other sources which follow the appropriate fuel test methods listed in Specific Condition D2. The analysis shall also specify the methods by which the analyses were conducted and shall comply with the requirements of 40 CFR 60.335(d).
3. The following custom monitoring schedule for natural gas is approved (pending EPA concurrence) in

lieu of the daily sampling requirements of 40 CFR 60.334 (b)(2).

- a. Monitoring of natural gas nitrogen content shall not be required.
- b. Analysis of the sulfur content of natural gas shall be conducted using one of the EPA-approved ASTM reference methods for the measurement of sulfur in gaseous fuels, or an approved alternative method. Once Unit 8 becomes operational, monitoring of the sulfur content of the natural gas shall be conducted semiannually.
- c. Should any sulfur analysis indicate noncompliance with 40 CFR 60.333, the City shall notify DEP of such excess emissions and the customized fuel monitoring schedule shall be reexamined. The sulfur content of the natural gas will be monitored weekly during the interim period while the monitoring schedule is reexamined.
- d. The City shall notify DEP of any change in natural gas supply for reexamination of this monitoring schedule. A substantial change in natural gas quality (i.e., sulfur content variation of greater than 1 grain per 100 cubic foot of natural gas) shall be considered as a change in the natural gas supply. Sulfur content of the natural gas will be monitored weekly by the natural gas supplier during the interim period when this monitoring schedule is being reexamined.
- e. Records of sampling analysis and natural gas supply pertinent to this monitoring schedule shall be retained by the City for a period of five years, and shall be made available for inspection by the appropriate regulatory personnel.
- f. The City may obtain the sulfur content of the natural gas from the fuel supplier provided the test methods listed in Specific Condition D2 are used.

4. Determination of Process Variables:

- (a) The permittee shall operate and maintain equipment and/or instruments necessary to determine process variables, such as process weight input or heat input, when such data is needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.
- (b) Equipment and/or instruments used to directly or indirectly determine such process variables, including devices such as belt scales, weigh hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value. [Rule 62-297.310(5), F.A.C]

5. Compliance with the annual facility-wide NOX cap shall be determined by adding the annual NOX emissions in tons per year determined by the CEMS required by 40 CFR 75 for Unit 8 along with existing Unit 7 to annual NOX emissions calculated for existing units GT1, GT2 and the auxiliary boiler determined by the following formulas:

$$\text{GT 1 \& GT 2 NOX(natural gas)} = (\text{Fuel Usage}) \times (\text{Heating Value of Natural Gas}) \times (0.44 \text{ lb/mmBtu}) \times \text{units conversion factors}$$

Fuel Usage shall be measured by fuel meter, recorded daily when unit is operated
Heating Value of Natural Gas will be determined from fuel supplier data
0.44 lb/mmBtu = AP-42 emission factor

$$\text{GT 1 \& GT 2 NOx (fuel oil)} = (\text{Fuel Usage}) \times (\text{Heating Value of Fuel Oil}) \times (0.698 \text{ lb/mmBtu}) \times$$

units conversion factors

Fuel Usage shall be measured by fuel meter, recorded daily when unit is operated
Heating Value of Fuel Oil will be determined from fuel supplier data
0.698 lb/mmBtu = AP-42 emission factor

Aux. Boiler NOX(natural gas)= (Fuel Usage)X (140 lb/mmCF) X units conversion factors

Fuel Usage shall be measured by flow meter, recorded daily when unit is operated
140 lb/mmCF = AP-42 emission factor

6. Compliance with the annual facility-wide SO₂ cap shall be determined by adding the annual SO₂ emissions in tons per year determined by the methods required by 40 CFR 75 for Unit 8 along with existing Unit 7 to annual SO₂ emissions calculated for existing units GT1, GT2 and the auxiliary boiler determined by the following formulas:

GT 1 & GT 2 SO₂ Emissions (natural gas)= (Fuel Usage) X (Heating Value of Natural Gas) X (0.0006 lb/mmBtu) X units conversion factors

Fuel Usage shall be measured by fuel meter, recorded daily when unit is operated
Heating Value of Natural Gas from fuel supplier data
Sulfur Content default of NADB = 0.0006 lb-SO₂/mmBtu

GT 1 & GT 2 SO₂ Emissions (fuel oil) = (Fuel Usage) X (Fraction Sulfur in the fuel oil) X (Molecular weight SO₂ / Molecular weight of S) X (Conversion factor) X units conversion factors

Fuel Usage shall be measured by fuel meter, recorded daily when unit is operated
% Sulfur will be determined from fuel oil analysis each time fuel is delivered (i.e., 0.05% S = 0.0005 in the above formula)

Molecular weight of SO₂ = 64
Molecular weight of S = 32
Conversion factor of 95% = 0.95

Aux. Boiler SO₂ Emissions (natural gas)= (Fuel Usage) X (Heating Value of Natural Gas) X (0.0006 lb/mmBtu) X units conversion factors

Fuel Usage shall be measured by fuel meter, recorded daily when unit is operated
Heating Value of Natural Gas from fuel supplier data
Sulfur Content default of NADB = 0.0006 lb/mmBtu

G. Rule Requirements

1. The emission unit shall be operated in compliance with all applicable requirements of 40 CFR 60, Subpart A, Appendix A and Appendix B (1997 version), Subpart GG - Standards of Performance for Stationary Gas Turbines (1997 version), and Rule 62-204.800 (7) (b) 38, F.A.C., except as otherwise specified herein. The Subpart GG requirement to correct test data to ISO conditions applies. However, such correction is not used for compliance determinations with the BACT

standard(s). All notifications and reports required by this specific condition shall be submitted to the DEP's Northwest District office.

2. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting requirements and regulations (Rule 62-210.300(1), F.A.C.).
3. Except as otherwise specified herein, the emission unit shall be operated in compliance with all applicable provisions of Rule 62-210.650, F.A.C.: Circumvention; Rule 62-210.700, F.A.C.: Excess Emissions; Rule 62-204.800 (7) (b) 38, F.A.C.: Standards of Performance for New Stationary Sources (NSPS); Chapter 62-297, F.A.C.: Stationary Sources - Emissions Monitoring; and, Rule 62-4.130, F.A.C.: Plant Operation - Problems.
4. If construction does not commence within 18 months of issuance of this permit, the permittee shall obtain from the DEP's Bureau of Air Regulation a review and, if necessary a modification of the BACT determination and allowable emissions (40 CFR 52.21(r)(2) (1997 version)).
5. Quarterly excess emission reports, in accordance with 40 CFR 60.7 (7) (c) (1997 version), shall be submitted to the DEP's Northwest District office.
6. Pursuant to Rule 62-210.370(2), F.A.C., Annual Operation Reports, the permittee is required to submit annual reports on the actual operating rates and emissions from this facility. Annual operating reports shall be sent to the DEP's Northwest District office by March 1st of each year.
7. Stack sampling facilities shall be installed in accordance with Rule 62-297.310(6), F.A.C.
8. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (Rule 62-4.090, F.A.C.).

H. Modifications

1. The permittee shall give written notification to the Department when there is any modification to this facility. This notice shall be submitted sufficiently in advance of any critical date involved to allow sufficient time for review, discussion, and revision of plans, if necessary. Such notice shall include, but not be limited to, information describing the precise nature of the change; modifications to any emission control system; production capacity of the facility before and after the change; and the anticipated completion date of the change.

**Purdom Generating Station/ Unit 8
City of Tallahassee**

Facility ID No. :1290001

Unit No. 8
Tallahassee, FL
Wakulla County

Air Construction Permit No. PSD-FL-239
Power Plant Siting No. PA97-36

The City of Tallahassee plans to install a new combined cycle combustion turbine system, Unit 8, at the existing Purdom facility consisting of a 160 MW (nominal rating) GE MS7231FA combustion turbine with DLN-2.6 (or later version) dry low NO_x (gas) and water injection (diesel) burners and a nonfired heat recovery steam generator (HRSG) with a nominal 90 MW steam turbine. The compressor inlet air will be conditioned by an evaporative cooler when needed. The turbine will be started using the generator and a static start system. A new 200 foot stack and a cooling tower will be added to the facility for Unit 8.

Unit 8 will be located at the City's Sam O. Purdom Generating Station in St. Marks, Wakulla County. Existing steam generating Units 5 and 6 will be permanently shut down once Unit 8 has completed the initial performance test for natural gas firing. Other existing units at the plant consist of: Unit 7, a pre-NSPS boiler with a nominal rating of 44 MW fired by natural gas, residual fuel oil or distillate fuel oil; two pre-NSPS distillate fuel oil or natural gas fired combustion turbines with a nominal rating of 12.3 MWs each (GT1 and GT2); and a Subpart Dc auxiliary steam boiler fired by natural gas.

A process description is included in the Technical Evaluation and Preliminary Determination.

BACT DETERMINATION REQUESTED BY THE APPLICANT:

See Table 4-8 (ATTACHMENT A) for the BACT requested by the applicant.

The Sam O. Purdom facility is among the major facilities listed in Florida Administrative Code (F.A.C.) Chapter 62-212, Prevention of Significant Deterioration (PSD), Table 62-212.400-1, "Major Facilities Categories." A BACT determination is required for each pollutant exceeding the significant emission rates in Table 62-212.400-2, "Regulated Air Pollutants Significant Emissions Rates," which in this case are particulate matter (PM/PM10), sulfur dioxide (SO₂), carbon monoxide (CO), and nitrogen oxides (NO_x),

This facility is also subject to:

- o 40 CFR 60, Subpart GG
- o 40 CFR 75

Date of Receipt of a BACT Application:

03-17-97

Review Group Members:

Martin Costello, P.E., A. A. Linero, P.E., Administrator of the New Source Review Section.

BACT Determination Procedure:

In accordance with Chapter 62-212, F.A.C., this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department of Environmental Protection (Department), on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that, in making the BACT determination, the Department shall give consideration to:

- (a) Any Environmental Protection Agency determination of BACT pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 - Standards of Performance for New Stationary Sources or 40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants.
- (b) All scientific, engineering, and technical material and other information available to the Department.
- (c) The emission limiting standards or BACT determination of any other state.
- (d) The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical emission unit or emission unit category. If it is shown that this level of control is technically or economically infeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

The air pollutant emissions from this facility can be grouped into categories based upon the control equipment and techniques that are available to control emissions from these emission units. Using this approach, the emissions can be classified as follows:

o **Combustion Products** (e.g. NOX and SO2)

Nitrogen Oxides (NOX)

Oxides of nitrogen (NOX) are generated during fuel combustion by oxidation of chemically bound nitrogen in the fuel (fuel NOX) and by thermal fixation of nitrogen in the combustion air (thermal NOX). As flame temperature increases, the amount of thermally generated NOx increases. Fuel type affects the quantity and type of NOX generated. Natural gas is very low in fuel bound nitrogen and therefore the dominant mechanism for NOX formation is thermal NOX. On combustion turbines, controls for NOX include Selective Catalytic Reduction (SCR) systems, wet injection or dry low NOX burner systems.

Sulfur Dioxide (SO2)

In a combustion turbine (CT) sulfur dioxide emissions result from the oxidation of fuel bound sulfur. Natural gas has very low levels of sulfur and low sulfur distillate fuel oils have 0.05% sulfur by weight which is also low compared to heavy fuel oils or coal. Add on controls (e.g. wet scrubber or spray dryer absorber systems) are not feasible nor are they needed when low sulfur fuels are fired in combustion turbines. SO2 emissions are minimized solely by firing low sulfur fuels. As discussed below, sulfur dioxide (and sulfuric acid mist) emissions will be controlled on unit 8 by firing low sulfur fuels.

o **Products of Incomplete Combustion** (e.g., PM10, CO, VOC).

Particulate Matter less than 10 micrometers aerometric diameter (PM10)

Particulate Matter is generated by various physical and chemical processes during combustion. The particulate matter emitted from this combustion turbine will predominately be less than 10 micrometers in diameter (PM10). Common control devices for stack gases include settling chambers, inertial separators, impingement separators, wet scrubbers, fabric filters, and electrostatic precipitators. These add on control devices have not been used on combustion turbines mainly due to the low particulate loadings and the increased back pressure. Filtering of the compressor inlet air and good combustion practices constitute the top control option for combustion turbines firing natural gas or low sulfur distillate fuel oil.

The cooling tower will emit PM/PM10 as particulate laden water is emitted and evaporated from the tower. A single BACT determination for a cooling tower was identified in the technology review. The BACT in this case specified drift eliminators to control PM/PM10 emissions from the cooling tower drift losses.

Carbon Monoxide (CO)

Carbon monoxide (CO) is a pollutant formed by the incomplete combustion (oxidation) of hydrocarbons in the turbine's combustors. The most stringent control technology for CO emissions is the use of an oxidation catalyst. This control option is not considered cost effective as discussed in the next section. The second most stringent control option, combustion controls and good combustion practices is considered BACT for this project.

o *Other Pollutants:*

VOC is also a pollutant formed by the incomplete combustion of fuel. It will be controlled in the same manner as chosen for CO control. Other pollutants (sulfuric acid mist, heavy metals) will be minimized by the exclusive use of clean fuels and the same good combustion practices listed above.

Grouping the pollutants in this manner facilitates the BACT analysis because it enables the equipment available to control the type or group of pollutants emitted and the corresponding energy, economic, and environmental impacts to be examined on a common basis. Although all of the pollutants addressed in the BACT analysis may be subject to a specific emission limiting standard as a result of PSD review, the control of "non-regulated" air pollutants is considered in imposing a more stringent BACT limit on a "regulated" pollutant (i.e., PM10, NOX, SO2, etc.), if a reduction in "non-regulated" air pollutants can be directly attributed to the control device selected as BACT for the abatement of the "regulated" pollutants.

BACT POLLUTANT ANALYSIS

Nitrogen Oxides (NOX)

A review of EPA's RACT/BACT/LAER Clearinghouse (RBLC) information indicates that NOX emissions for most new combustion turbines in attainment areas for ozone and nitrogen dioxides are controlled by either wet injection or dry low NOX burner technology. The applicant has proposed dry low NOX burner technology for gas firing and water injection for fuel oil firing. It is compared below with previous determinations documented by the BACT Clearinghouse.

BACT Clearinghouse Determinations

<u><i>BASIS:</i></u>	<u><i>Limit</i></u>	<u><i>Technology</i></u>	<u><i>Facility ID</i></u>
<i>LAER- gas fired</i>	<i>3.5 ppm</i>	<i>SCR</i>	<i>NY-0044</i>
<i>LAER- oil fired</i>	<i>10 ppm</i>	<i>SCR</i>	<i>NY-0044</i>
<i>BACT-gas</i>	<i>9ppm</i>	<i>DLNB</i>	<i>NY-0047</i>
<i>BACT-oil</i>	<i>42ppm</i>	<i>water injection</i>	<i>NY-0047</i>

The most stringent or top control option for controlling NOX emissions from a combustion turbine is the above listed facility (NY-0044) from EPA's RACT/BACT/LAER Clearinghouse Information System (RBLC). The Brooklin Navy Yard Cogeneration Partnership L.P. facility consists of two CTs which are gas/oil fired cogeneration units rated at 240 MW total (160 MW simple cycle) and is located in a nonattainment area for ozone. In addition to SCR add on controls for NOX emissions, offsets (reductions in NOX emissions at a nearby facility) were purchased when this unit was permitted.

The city analyzed the feasibility of installing a SCR system for Purdom unit 8. The initial capital cost based on a vendor quote was \$1,676,000 based on a design which would meet 3.5 ppm on gas and 10 ppm on fuel oil. The total levelized annual cost was estimated to be \$1.5 million per year for 20 years resulting in an incremental cost effectiveness of \$7,225 per ton of NOX removed. This incremental cost effectiveness value is considerably higher than those determined to constitute BACT for other projects in Florida of similar nature. Therefore SCR is deemed too expensive in this application.

The most stringent emission limit for a large industrial combustion turbine with dry low NOX burners is listed in the table above (NY-0047). This unit is located in Holtsville New York at the PASNY Holtsville Combined Cycle Plant. This unit is a Siemens model V84.2 rated at 150 MW simple cycle. This unit uses a single vertical silo combustor in contrast to the GE frame 7FA unit which uses a can annular combustor. The silo design allows for longer residence time in the combustor and may operate at lower peak flame temperatures (which reduces thermal NOx). It was permitted in 1992 and has recently demonstrated emissions less than 9 ppmvd except during startup (up to 3 hours) /shutdown/malfunction and is required to demonstrate compliance using the NOX CEMS. The firing temperature and the reliability of this unit are not known as this time. The majority of the 9 ppm units listed in EPA's database employ both SCR and dry low NOx burners.

The current level of dry low NOX burner technology which can be reliably achieved over a long time period appears to be approximately 15 ppm of NOX at full load firing natural gas. This standard is shown on at least 10 units listed in EPA's RACT/BACT/LAER Clearinghouse. The actual emissions level achieved from dry low NOX burner technology is dependent on firing temperature, size of the unit and type of combustor (silo vs. annular combustor designs). In general the smaller aeroderivative designs have not been able to achieve 15 ppm without having problems with reliability. Several units in Florida have been granted extensions for the deadline to attain 15 ppm. Some of the smaller industrial turbines (frame units) are able to achieve less than 15 ppm today. For instance, Unit 2 at the Kissimmee Utility Authority's Cane Island plant has actual emissions of 6 to 12 ppm at full load on this GE frame 7 EA unit. It is rated at 80 MW and has a firing temperature of about 2025 F. Because the city requested compliance to be demonstrated on a continuous basis (by CEMS) using a 30 day rolling average, the Department considered a BACT limit below 15 ppm to compensate for the longer averaging time. An additional consideration in determining BACT for NOX was the fact that the technology for this dry low NOX system is still under development, even though it has been demonstrated on a lower firing temperature unit.

Dry low NOX technology is a combustion staging technology which reduces the formation of thermal NOX by keeping peak flame temperatures as low as possible. But higher firing temperatures enable higher thermal efficiencies because these hotter exhaust gases have more energy to turn the turbine blades. Because thermal NOX can be higher for the higher firing temperature units (e.g. the unit proposed by the City of Tallahassee) it is more difficult to achieve low NOX emissions on these units with firing temperatures of 2400 F. Compensating for this is the higher electrical power output for a given heat input, therefore on a (lbs of NOX emissions) / (KW-hr) basis, the more efficient units may not be at a disadvantage to the lower firing temperature units.

Dry low NOX burner technology is the next most stringent control technology (after SCR) for combustion turbines. The applicant proposes to use GE's DLN-2.6 (or later version) controls which is a third generation dry low NOX burner technology that was first demonstrated in commercial operation in 1996. Emissions from this unit were less than 9 ppm. This application was a Frame 7FA unit with a firing temperature of 2350 F. The first application of a Frame 7FA with a 2400 F firing temperature is scheduled for operation this summer and has a contract for less than 15 ppm. Although not currently demonstrated on the higher firing temperature unit which the city of Tallahassee will purchase, the contractor has guaranteed an emission rate of less than 9 ppm for Purdom Unit 8. This guarantee is based on operation above the 50-55% load range since emissions (ppm) will be higher at loads below this.

Nitrogen Oxides (NOX) emissions will be controlled by using GE's DLN-2.6 (or later version) with a BACT standard of 12 ppmvd corrected to 15% oxygen, compliance by CEMS and using a 30 day rolling average. The firing temperature on this Frame 7FA combustion turbine is 2400 F. When firing natural gas, the combustor operates in a diffusion mode at low loads (less than about 50% of capacity) and in a premixed mode at high loads. When firing fuel oil, the combustors are operated in a diffusion mode at all loads and diluent injection (water) is used to control NOX formation. The DLN-2.6 control system regulates fuel distribution to the primary, secondary, tertiary and quaternary fuel systems for each of the five combustors. As the combustion turbine is started and operated through the full range, the diffusion, piloted premix, and premix flames are established by changing the distribution of fuel flow in the combustors. Fuel and air flow to the combustors are controlled by GE's Speedtronic control system. GE's Mark V control system will be used to continuously maintain the NOX concentration in the exhaust at the specified level throughout a range of loads and ambient conditions. This system receives inputs from a compressor inlet temperature and humidity sensor, load sensors, speed sensors, and ambient pressure sensors.

Sulfur Dioxide (SO₂)

SO₂ control processes can be classified into five categories: fuel/material sulfur content limitations, absorption by a solution, adsorption on a solid bed, direct conversion to sulfur, or direct conversion to sulfuric acid.

A review of the BACT determinations for combustion turbines as contained in EPA's Clearinghouse shows that the exclusive use of low sulfur fuels constitutes the top control option for SO₂. The applicant has proposed the exclusive use of natural gas or distillate fuel oil with sulfur content limited to 0.05% by weight. This is considered BACT for this project.

Particulate Matter (PM/PM10)

A technology review indicated that the top control option for PM₁₀ is a combination of good combustion practices, fuel quality, and filtration of inlet air. The applicant has proposed this top control option. In addition, GE indicates that the PM₁₀ emissions will not exceed 9 lb/hr (0.0058 lb/mmBtu) for natural gas and 17 lb/hr (0.0096 lb/mmBtu) for low sulfur distillate fuel oil exclusive of background dust loadings. Because these low emission levels are difficult to reliably measure by EPA reference methods over a one hour test period, BACT is not an emission limit but is based on good combustion practices and the exclusive use of clean, low sulfur fuels. The emission control technology for PM₁₀ will be good combustion practices and the use of only low sulfur, and low ash content fuels including natural gas and distillate fuel oil containing no more than 0.05% sulfur by weight. The inlet air for the combustion turbine will be filtered to protect the internal components from wear. This filtration may also reduce PM₁₀ emissions. Good combustion practices shall be implemented by using computer monitored and controlled systems with appropriate alarms for improper operating parameters. Proper tuning and operation of the dry low NOX burner system shall be employed to minimize products of incomplete combustion (PM₁₀, VOC, and CO) while meeting the NOX emission limit.

BACT for the cooling tower is the use of drift eliminators to control PM/PM₁₀ emissions from the cooling tower drift losses.

Carbon Monoxide(CO)

The most stringent control technology for CO emissions is the use of an oxidation catalyst. The city evaluated the use of an oxidation catalyst designed for 90 percent reduction and having a two year catalyst life. The oxidation catalyst control system is estimated to increase the capital cost of the project by \$1.5 million and results in an incremental cost effectiveness of \$7,720 per ton of CO reduced. In addition, there will be a reduction in the unit's output by as much as 0.5% or 1.25 MW due to the increased pressure drop across the catalyst. The catalyst may also result in an increase in the oxidation of SO₂ to SO₃ which combines with moisture in the exhaust to form sulfuric acid mist. This impact is not considered significant. The catalyst life is limited and may result in an additional solid waste load to the local landfill if the catalyst can not be rejuvenated by the manufacturer. This control option is not considered cost effective. The second most stringent control option, combustion controls and good combustion practices is considered BACT for this project. Carbon monoxide (CO) will be controlled by proper tuning of the dry low NOX burner system and good combustion practices. Operation of the dry low NOX burner

system shall be optimized in order to minimize CO emissions while keeping NOX emissions below the emission limit. Low load operation will result in the highest levels of CO emissions (ppm and lb/hr). The BACT emission limit for CO, 25 ppm for gas and 90 ppm for fuel oil, was set at the level which could be achieved for worst case operation i.e., low load operation (50% load) so that the full range of operation of this unit could be employed. It may be cost effective to conduct annual CO emission tests concurrent with the annual relative accuracy test audits (RATA) which are conducted at 50 % load or higher. According to GE's data, operation at higher loads should result in CO emissions which are at or below 10 ppmvd when firing natural gas.

BACT Determination Rationale:

The BACT emission level chosen for NOX, 12 ppm and compliance by CEM, is similar to the basis for the 165 MW units (simple cycle rating) at for FPC's Hines Energy Center and is the lowest NOX limit (ppm level) to date in Florida. In contrast to Unit 8, the Hines Energy Center units are not required to demonstrate compliance on a continuous basis but EPA Method 20 is required once per year. Selective Catalytic Reduction (SCR) was not considered cost effective for the city of Tallahassee. SCR is an add on NOX control technology which requires ammonia injection and the installation of a catalyst bed downstream of the combustion turbine. Because combustion turbines pump large volumes of exhaust gases, the pressure drop introduced by the catalyst causes energy losses on these large industrial combustion turbines. Water usage associated with an SCR system would increase by 136,000 gallons per year.

BACT for SO2 emissions from the combustion turbine was based on the top control option which is the exclusive use of low sulfur distillate fuel oil and pipeline quality natural gas. These fuels are among the lowest sulfur fuels available. This BACT will also insure that ambient SO2 impacts on the nearby St. Marks Class I area are minimized to the greatest extent possible.

BACT for PM10 was determined to be good combustion practices, inlet air filtering, and clean, low ash and low sulfur fuels which is currently the only feasible PM10 control technology for combustion turbines. Particulate matter is generated by various physical and chemical processes during combustion and will be affected by the design and operation of the NOX controls. The particulate matter emitted from this unit will mainly be less than 10 micrometers in diameter (PM10). Common control devices for stack gases include settling chambers, inertial separators, impingement separators, wet scrubbers, fabric filters, and electrostatic precipitators. Fabric filters (baghouses) and electrostatic precipitator (ESPs) have not been used on combustion turbines mainly due to the low particulate loadings and the increased back pressure. Filtering of the compressor inlet air and good combustion practices constitute the top control option for combustion turbines firing natural gas or low sulfur distillate fuel oil. The applicant has proposed this top control option. This is considered BACT for this project.

The city evaluated the use of an oxidation catalyst designed for 90 percent reduction of CO

and a two year catalyst life. The oxidation catalyst control system is estimated to increase the capital cost of the project by \$1.5 million and results in an incremental cost effectiveness of \$7,720 per ton of CO reduced. In addition, there will be a reduction in the unit's output by as much as 0.5% or 1.25 MW due to the increased pressure drop across the catalyst. The catalyst may also result in an increase in the oxidation of SO₂ to SO₃ which combines with moisture in the exhaust to form sulfuric acid mist. This impact is not considered significant. The catalyst life is limited and may result in an additional solid waste load to the local landfill if the catalyst can not be rejuvenated by the manufacturer. This control option is not considered cost effective. The second most stringent control option, combustion controls and good combustion practices is considered BACT for this project. The BACT emission limit for CO, 25 ppm for gas and 90 ppm for fuel oil, was set at the level which could be achieved for worst case operation i.e., low load operation (50% load) so that the full range of operation of this unit could be employed. It may be cost effective to conduct annual CO emission tests concurrent with the annual relative accuracy test audits (RATA) which are conducted at 50 % load or higher. According to GE's data, operation at higher loads should result in CO emissions which are at or below 10 ppmvd when firing natural gas.

BACT Determination by DEP:

Based on the information provided by the applicant and the information searches conducted by the Department, lower emissions limits can be obtained employing the top-down BACT approach for SO₂ , NOX , PM₁₀ , and CO.

PM₁₀ DETERMINATION

Filtering of the compressor inlet air and good combustion practices while firing low sulfur fuels (natural gas or distillate fuel oil with no more than 0.05% sulfur content).

BACT for the cooling tower is the use of drift eliminators to control PM/PM₁₀ emissions from the cooling tower drift.

SO₂ DETERMINATION

The exclusive use of pipeline quality natural gas or distillate fuel oil with sulfur content limited to 0.05% by weight is considered BACT for this project.

NO_x DETERMINATION

An emission limit of 12 ppmvd corrected to 15% oxygen firing natural gas and 42 ppmvd corrected to 15% oxygen firing fuel oil is considered BACT. The NOX standard for firing fuel oil shall be adjusted from 42 ppm up to 48 ppm based on fuel bound nitrogen (FBN) levels above 0.015 percent according to the equation submitted by the applicant and incorporated into the draft PSD permit (Section III Condition B4). This adjustment, upward or downward between 42 and 48 ppm, shall be made only at the time of each new

fuel shipment. Compliance shall be demonstrated on a 30 day rolling average basis using the NOX CEMS system. Emissions during startup (including fuel switching), shutdown and malfunction shall be excluded from the calculation of these 30 day rolling averages provided the operator minimizes the occurrence, magnitude, and duration of excess emissions pursuant to 62-210.700 Florida Administrative Code (version dated 10/15/96). Excess Emissions during these transient periods shall be reported quarterly to the Department pursuant to 40 CFR 60.7. Subject to EPA approval, excess emissions shall be reported based on the NOX CEMS data in lieu of the water/fuel monitoring specified in 40 CFR 60.334. When monitoring data is not available, substitution for missing data shall be handled as required by Title IV (40 CFR 75) to calculate of the 30 day rolling average.

CO DETERMINATION

Carbon monoxide (CO) will be controlled by proper tuning of the dry low NOX burner system and good combustion practices. Operation of the dry low NOX burner system shall be optimized during the initial compliance test and at other times as needed in order to minimize CO emissions while keeping NOX emissions below the emission limit. The BACT emission limit for CO, 25 ppm for gas and 90 ppm for fuel oil, was set at the level which could be achieved for worst case operation i.e., low load operation (50% load) so that the full range of operation of this unit could be employed. It may be cost effective to conduct annual CO emission tests concurrent with the annual relative accuracy test audits (RATA) which are conducted at 50 % load or higher.

OTHER POLLUTANTS

Visible Emissions shall be limited to 10 % opacity as a secondary and ongoing indicator of PM10 emissions.

The BACT emission levels established by the Department are as follows:

Table 1-1: Air Pollutant Standards and Terms

<u>POLLUTANT</u>	<u>EMISSION LIMIT</u>
	<i>Natural Gas / Fuel Oil</i>
Particulate Matter (PM10)	good combustion of clean, low sulfur fuels drift eliminators for the cooling tower
Visible Emissions	10% opacity / 10 % opacity
Carbon Monoxide	25ppm / 90 ppm
NOX (30 day rolling average)	12 ppm @ 15 % O2 / 42 ppm @ 15% O2 and adjusted for FBN
SO2	natural gas / limit of 0.05% sulfur by weight

Table 1-2: Compliance Procedures

POLLUTANT	COMPLIANCE DETERMINED BY
Visible Emissions	Method 9
Carbon Monoxide	Method 10 (can conduct concurrent with RATA testing)
NOX (30 day rolling average)	NOX CEMS and O2 or CO2 diluent monitor
SO2	ASTM D 3246 gas / ASTM D 4294 fuel oil, or other gas and fuel oil test methods in 40 CFR 60

Details of the Analysis May be Obtained by Contacting:

Martin Costello, PE II or
A. A. Linero, Administrator, New Source Review Section
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended By:

Approved By:

C. H. Fancy, P.E., Chief
Bureau of Air Regulation

Howard L. Rhodes, Director
Division of Air Resources Management

Date: Date:

ATTACHMENT A

BACT DETERMINATION REQUESTED BY THE CITY OF TALLAHASSEE

TABLE 4-8	
Summary of PROPOSED BEST AVAILABLE CONTROL TECHNOLOGY	
Pollutant	Proposed BACT
<i>Carbon Monoxide (CO)</i>	Good Combustion Practices
<i>Particulate Matter (TSP)</i>	Fuel Quality (Clean Pipeline Quality natural gas and No. 2 (0.05% S) diesel fuel oil, Good Combustion Practices, and Combustion Inlet Air Filtration
<i>PM10</i>	Fuel Quality (Clean Pipeline Quality natural gas and No. 2 (0.05% S) diesel fuel oil, Good Combustion Practices, and Combustion Inlet Air Filtration
Sulfur Dioxide (SO ₂)	Fuel Quality (Clean Pipeline Quality natural gas and No. 2 (0.05% S) diesel fuel oil.
Sulfuric Acid Mist (H ₂ SO ₄)	Fuel Quality (Clean Pipeline Quality natural gas and No. 2 (0.05% S) diesel fuel oil.
Nitrogen Oxides (NO _x)	Fuel Quality (Clean Pipeline Quality natural gas and No. 2 (0.05% S) diesel fuel oil and Good Combustion Practices including Dry-Low NO _x Combustors and Water Injection
Volatile Organic Compounds (Including Benzene)	Good Combustion Practices
Trace Metals Lead (Pb) Beryllium (Be) Mercury (Hg) Arsenic (As)	Fuel Quality (Clean Pipeline Quality natural gas and No. 2 (0.05% S) diesel fuel oil and Combustion Inlet Air Filtration
Total Fluorides (Fl)	Fuel Quality (Clean Pipeline Quality natural gas and No. 2 (0.05% S) diesel fuel oil.
<i>Cooling Tower (TSP & PM10)</i>	Drift Eliminators (0.002 percent - Recirculation Water)
<i>Note: Pollutants presented in bold and italics are subject to BACT by rule.</i>	
Source: Foster Wheeler Environmental, 1997	

- G.1 The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
- G.2 This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
- G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
- G.4 This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
- G.5 This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
- G.6 The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
- G.7 The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
 - Have access to and copy and records that must be kept under the conditions of the permit;
 - Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
 - Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.
- G.8 If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
 - A description of and cause of non-compliance; and
 - The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to

enforcement action by the Department for penalties or for revocation of this permit.

- G.9 In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.
- G.10 The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
- G.11 This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
- G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.
- G.13 This permit also constitutes:
- Determination of Best Available Control Technology (X)
 - Determination of Prevention of Significant Deterioration (X); and
 - Compliance with New Source Performance Standards (X).
- G.14 The permittee shall comply with the following:
- (a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
 - (b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
 - (c) Records of monitoring information shall include:
 - The date, exact place, and time of sampling or measurements;
 - The person responsible for performing the sampling or measurements;
 - The dates analyses were performed;
 - The person responsible for performing the analyses;
 - The analytical techniques or methods used; and
 - The results of such analyses.
- G.15 When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

1 also wish to receive the following services (for an extra fee):

1. Addressee's Address

2. Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Mr. Brian Beals, Section Chief
Air Radiation Technology Branch
Preconstruction/HAP Section
U.S. EPA - Region IV
61 Forsyth Street
Atlanta, GA 30303

4a. Article Number
265657309

4b. Service Type

Registered Insured

Certified COD

Express Mail Return Receipt for Merchandise

5. Signature (Addressee)

6. Signature (Agent)
Lisa Aldridge

7. Date of Delivery
Apr 18 1995

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1994 U.S. GPO: 1993-352-714

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

DOMESTIC RETURN RECEIPT

U.S. Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail (See reverse)

Sent to
Brian Beals

Street & Number
61 Forsyth St

Post Office, State, & ZIP Code
Atlanta GA 30303

Postage \$

Certified Fee

Special Delivery Fee

Restricted Delivery Fee

Return Receipt Showing to Whom & Date Delivered

Return Receipt Showing to Whom, Date, & Addressee's Address

TOTAL Postage & Fees \$

Postmark or Date

PS Form 3800, April 1995

Best Available Copy

Mowrey & Newman, P.A.
Attorneys at Law
515 North Adams Street
Tallahassee, Florida, 32301-1111

Ronald A. Mowrey*
Brian A. Newman**

Telephone No.: (904) 222-9482
Facsimile No.: (904) 561-6867

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BUREAU OF
AIR REGULATION
Of Counsel:
Stuart E. Goldberg, (LL.M. Tax)
Charles E. Barrett***
***Also Admitted in Alabama

* Also Admitted in Dist. of Columbia
* Certified Circuit Court Mediator
** Also Admitted in Georgia

August 22, 1997

DEP Bureau of Air Regulation
2600 Blair Stone Road
Mail Station # 5505
Tallahassee, Florida 32399-2400

Re: Draft Permit No.: PSD-FL-239
Power Plant Siting No. PA97-36

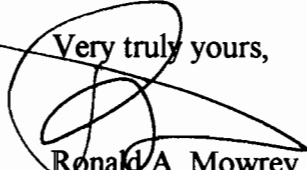
City of Tallahassee Purdom 8

Dear Sir or Madam:

Wakulla County, Florida requests a public meeting concerning the proposed draft Prevention of Significant Deterioration Permit issuance action, pursuant to Section 403.508(8), Fla. Stat. (1995). This public meeting shall be conducted in Crawfordville, Wakulla County, Florida.

Thank you for your time and attention to this matter.

Very truly yours,


Ronald A. Mowrey
County Attorney

RAM/ds

C:\Data\Wakulla\Purdom\Meeting Request{ds}

cc: M. Costello, BAR
B. Owen, PPS, DEP
D. Beason, OGC
C. Collette, OGC
J. Curtis, C. of T.
E. Middlewart, NWD

THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

RECEIVED

AUG 14 1997

BUREAU OF
AIR REGULATION

In the Matter of an
Application for Permit by:

OGC CASE NO. _____

City of Tallahassee Utility Services
300 South Adams Street
Tallahassee, FL 32301

DRAFT Permit No.: PSD-FL-239
Purdom Generating Station
Wakulla County

REQUEST FOR EXTENSION OF TIME

By and through undersigned counsel, the City of Tallahassee (Tallahassee) hereby requests, pursuant to Florida Administrative Code Rules 28-106.111(3) and 62-103.050(1), an extension of time, to and including August 29, 1997, in which to file a Petition for Administrative Proceedings in the above-styled matter. As good cause for granting this request, Tallahassee states the following:

1. On or about July 8, 1997, Tallahassee received from the Department of Environmental Protection (Department) an "Intent to Issue PSD Permit" (Permit No. PSD-FL-239) for the Purdom Generating Station in Wakulla County, Florida. Along with the Intent to Issue, Tallahassee received a draft PSD permit and "Public Notice of Intent to Issue PSD Permit."

2. Tallahassee previously requested an extension to and including August 19, 1997. While Charles T. (Chip) Collette with the Department's Office of General Counsel orally agreed to this extension, an Order formally granting the extension has not yet been issued.

3. The draft permit and notice contain several provisions that warrant clarification or correction.

4. Representatives of Tallahassee have met and corresponded with staff of the Department's Bureau of Air Regulation in an effort to resolve the issues identified by Tallahassee. Final resolution of a few remaining issues is expected soon.


5. This request is filed simply as a protective measure to avoid waiver of Tallahassee's right to challenge certain conditions contained in the draft PSD permit. Grant of this request will not prejudice either party, but will further their mutual interest and likely avoid the need to file a petition and proceed to a formal administrative hearing.

6. On behalf of the Department, Charles T. (Chip) Collette with the Department's Office of General Counsel has agreed to Tallahassee's request for an extension of time until August 29, 1997.

WHEREFORE, Tallahassee respectfully requests that the time for filing of a Petition for Administrative Proceedings in regard to the Department's Intent to Issue PSD Permit for Permit No. PSD-FL-239 be formally extended to and including August 29, 1997.

Respectfully submitted this 13th day of August, 1997.

HOPPING GREEN SAMS & SMITH, P.A.


Angela R. Morrison, Fla. Bar No. 0855766
123 South Calhoun Street
Post Office Box 6526
Tallahassee, FL 32314
(904) 222-7500

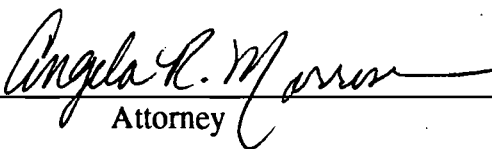
Attorney for CITY OF TALLAHASSEE UTILITY
SERVICES

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of the foregoing has been furnished to the following
by U.S. Mail on this 13th day of August, 1997:

Clair H. Fancy, P.E.
Chief
Bureau of Air Regulation
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2600

Charles T. (Chip) Collette, Esq.
Office of General Counsel
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2600



Attorney

96539



Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

September 15, 1997

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Brian Beals, Section Chief
Air, Radiation Technology Branch
Preconstruction/HAP Section
US EPA Region IV
61 Forsyth Street
Atlanta, GA 30303

Re: City of Tallahassee Utility Services
Purdum Unit 8, Combustion Turbine and Heat Recovery Steam Generator
DRAFT Permit No. PSD-FL-239

Dear Mr. Beals:

Enclosed is a marked up copy of the draft PSD permit and BACT which was mailed to you on July 1. Please send your written comments on the applicant's proposed custom fuel monitoring schedule as highlighted on page 8 and 9. Note that the Subpart GG limit on SO₂ emissions is either 150 ppmvd @ 15% O₂ or a fuel sulfur limit of 0.8% sulfur. Neither of these limits could conceivably be violated by the use of pipeline quality natural gas which results in a maximum SO₂ emission rate of 0.0006 lb/MMBtu (40 CFR 75 Appendix D Section 2.3.1.4). The sulfur content of pipeline quality natural gas in Florida has been estimated at a maximum of 0.003 % sulfur.

Please comment on Specific Condition F1 which allows the use of the acid rain required NO_x CEMS for demonstrating compliance as well as reporting excess emissions. The Subpart GG requirements for the water-to-fuel monitoring system (fuel oil only since dry Low NO_x burners are used for gas firing) are less stringent than the use of the NO_x CEMS for determining excess emissions.

I recommend your approval of the custom fuel monitoring schedule and these NO_x monitoring provisions. If you have any questions on these matters please contact me at 904/488-1344.

Sincerely,

Martin Costello, P.E.
New Source Review Section

MC/mc

Enclosures

Is your RETURN ADDRESS completed on the r.

- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

2. Restricted Delivery
Consult postmaster for fee.

3. Article Addressed to:
 Bernette Curtis E.A.
 City of Jalla. Utility Ser
 308 South Adams St.
 Tallahassee, Fl 32301

4a. Article Number
 P 265 659 245

4b. Service Type
 Registered Certified
 Express Mail Insured
 Return Receipt for Merchandise COD

7. Date of Delivery
 7/31/97

5. Received By: (Print Name)
 Nancy Strickland

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Addressee or Agent)
 X Nancy Strickland

PS Form 3811, December 1994

Domestic Return Receipt

Thank you for using Return Receipt Serv

P 265 659 245

US Postal Service
Receipt for Certified Mail

No Insurance Coverage Provided.
 Do not use for International Mail (See reverse)

Sent to
 Bernette Curtis
 Street & Number
 City of Tallahassee
 Post Office, State, & ZIP Code
 Tallahassee, FL

Postage	\$
Certified Fee	
Special Delivery Fee	7-30-97
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$

Postmark or Date
 7-30-97
 PSO-FL-239

PS Form 3800, April 1995



Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

July 29, 1997

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Jennette Curtis
Environmental Administrator
City of Tallahassee Utility Services
300 South Adams Street
Tallahassee, Florida 32301

Re: Purdom Unit 8, Combustion Turbine and
Heat Recovery Steam Generator
DRAFT Permit No. PSD-FL-239/PA97-36

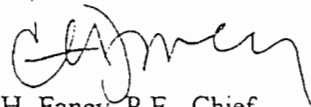
Dear Ms. Curtis

Enclosed is a revised copy of the "PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT". This replaces the earlier version which was sent on July 1, 1997.

The "PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT" must be published within 30 (thirty) days of receipt of this letter. Proof of publication, i.e., newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

Please submit any written comments you wish to have considered concerning the Department's proposed action to A. A. Linero, P.E., Administrator, New Source Review Section at the above letterhead address. If you have any other questions, please contact Martin Costello or Mr. Linero at 904/488-1344.

Sincerely,


C. H. Fancy, P.E., Chief,
Bureau of Air Regulation

CHF/mc

Enclosures

PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DRAFT Permit No.: PSD-FL-239
Power Plant Siting No. PA97-36

City of Tallahassee Utility Services
Purdom Generating Station Unit 8
Wakulla County

The Department of Environmental Protection (Department) gives notice of its intent to issue a permit for the Prevention of Significant Deterioration (PSD permit) to the City of Tallahassee for the Purdom Generating Station proposed Unit 8 located in the City of St. Marks, Wakulla County. A Best Available Control Technology (BACT) determination was conducted for particulate matter (PM/PM₁₀), sulfur dioxide (SO₂), nitrogen oxides (NO_x) and carbon monoxide (CO) pursuant to Rule 62-212.400, F.A.C. and 40 CFR 52.21. The applicant's name and address are City of Tallahassee Utility Services, 300 South Adams Street, Tallahassee, FL 32301

The City of Tallahassee has applied to construct Unit 8, a nominal 250 megawatt (MW) combined cycle combustion turbine and heat recovery steam generator to meet its system needs and replace existing conventional steam generating Units 5 and 6. Emissions control will be accomplished by dry low NO_x burners (gas) and water injection (diesel) and primary use of natural gas, an inherently clean fuel. A new 200 foot stack and a cooling tower will be added to the facility for Unit 8.

Other existing units at the plant consist of Unit 7, a nominal 44 MW steam boiler fired by natural gas and/or fuel oil, two older combustion turbines with a nominal rating of 12.3 MW each and a small auxiliary steam boiler fired by natural gas. The City has requested a facility-wide emissions cap for nitrogen oxides (NO_x) and sulfur dioxide (SO₂) to ensure that no increase in these emissions will occur once Unit 8 is constructed. Therefore in the future, NO_x and SO₂ emissions from the facility, including Unit 8, will be less than or equal to these emissions before the addition of Unit 8. Electrical output from this facility will be about three times higher than the current level with the addition of Unit 8.

Total facility-wide annual emissions including those from the project are summarized below:

Pollutants	Current Actual	Future Estimated Emissions	Net Increase
	ton/yr	ton/yr	ton/yr
PM ₁₀	10.7	59.0	48.3
SO ₂	80.0	80.0	0
NO _x	467.0	467.0	0
CO	66.0	193.0	127.0

An air quality impact analysis was conducted. Emissions from the facility will not significantly contribute to or cause a violation of any state or federal ambient air quality standards. The maximum predicted PSD Class II increments of NO₂, SO₂, and PM₁₀ consumed by all sources in the area, including this project, will be as follows:

	<u>PSD Class II Increment Consumed (mg/m³)</u>	<u>Allowable Increment (mg/m³)</u>	<u>Percent Increment Consumed</u>
PM ₁₀			
24-hour	3.3	30	11
Annual	0.3	17	2
SO ₂			
3-hour	14.4	512	3
24-hour	2.4	91	3
Annual	0.0	20	0
NO ₂			
Annual	6.2	25	25

The maximum predicted PSD Class I increments of NO₂, SO₂, and PM₁₀ in the St. Marks National Wilderness Area and the Bradwell Bay National Wilderness Area consumed by all sources in the area, including this project, will be as follows:

<u>PSD Class I Increment Consumed (mg/m³)</u>		<u>Allowable Increment (mg/m³)</u>	<u>Percent Increment Consumed</u>
PM₁₀			
24-hour	0.73	8	9
Annual	0.16	4	4
SO₂			
3-hour	16.9	25	68
24-hour	4.9	5	98
Annual	0.0	2	0
NO₂			
Annual	0.91	2.5	36

The Department will issue the FINAL Permit, in accordance with the conditions of the DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days from the date of publication of this Notice. Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

The issuance of this PSD permit is being coordinated with a certification under the Power Plant Siting Act (Sections 403.501.519, Florida Statutes). If a petition for an administrative hearing on the preliminary determination and proposed PSD permit is filed by a substantially affected person, that hearing shall be consolidated with the certification hearing, as provided under Section 403.507(3), Florida Statutes.

The Department will issue FINAL Permit with the conditions of the DRAFT Permit unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. Mediation under Section 120.573 is not available for this Draft Permit.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 904/488-9370, fax: 904/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the Department's action or proposed action addressed in this notice of intent.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice of intent. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida, 32301
Telephone: 850/488-1344
Fax: 850/922-6979

Department of Environmental Protection
NW District Office
160 Government Center
Pensacola, Florida 32501
Telephone: (850) 444-8300
Fax: (850) 444-8417

The complete project file includes the application, technical evaluations, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 904/488-1344, for additional information.



CITY HALL
300 S. ADAMS ST.
TALLAHASSEE, FL
32301-1731
904/891-0010
TDD 1-800/955-8771

SCOTT MADDOX
Mayor
STEVE MEISBURG
Mayor Pro Tem

JOHN PAUL BAILEY
Commissioner
DEBBIE LIGHTSEY
Commissioner
RON WEAVER
Commissioner

ANITA R. FAVORS
City Manager
ROBERT B. INZER
City Treasurer-Clerk

JAMES R. ENGLISH
City Attorney
RICARDO FERNANDEZ
City Auditor

August 11, 1997

CERTIFIED MAIL: P 483 230 298

RECEIVED

AUG 12 1997

**BUREAU OF
AIR REGULATION**

Mr. Clair H. Fancy, P.E., Chief
Bureau of Air Regulation
Florida Department of Environmental Protection
Mail Station #5505
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

**Re: City of Tallahassee Draft Permit No. PSD-FL-239
Sam O. Purdom Generating Station Unit 8
Proof of Publication of Notice**

Dear Mr. Fancy:

On Thursday, August 7, 1997, the City of Tallahassee published the Public Notice of Intent to Issue PSD Permit for the referenced emission unit. Attached is a copy of the affidavit received from the Tallahassee Democrat confirming publication.

If you have any questions regarding the proof of publication, please feel free to contact either myself at (904) 891-8850 or Karl Bauer at (904) 891-8851.

Sincerely,

Jannette Curtis
Environmental Administrator

JC/kb

Attachment

cc: Martin Costello, FDEP ✓
Rob McGarrah, COT
Gordon King, COT
Karl Bauer, COT
Gary Sams, HGSS
Angela Morrison, HGSS
Frank Michel, Raytheon
Douglas Fulle, FWENC
Darrel Graziani, FWENC
Analee Moore, Moore/Bowers

CC: EPA
NPS
NWD
B. Owen, PPS

STATE OF FLORIDA COUNTY OF LEON:
Before the undersigned authority personally appeared Lalaena Gonzalez who on oath says that she is Legal Advertising Representative of the Tallahassee Democrat, a daily newspaper published at Tallahassee in Leon County, Florida; that the attached copy of advertising being a Legal Ad in the matter of

PUBLIC NOTICE...

in the Second Judicial Circuit Court was published in said newspaper in the issues of:

AUGUST 7, 1997

Affiant further says that the said Tallahassee Democrat is a newspaper published at Tallahassee, in the said Leon County, Florida, and that the said newspaper has heretofore been continuously published in said Leon County, Florida, each day and has been entered as second class mail matter at the post office in Tallahassee, in said Leon County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this publication in the said newspaper.

Lalaena Gonzalez

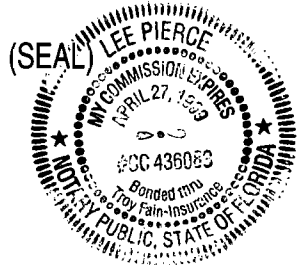
LALAENA GONZALEZ
LEGAL ADVERTISING REPRESENTATIVE

Sworn To And Subscribed Before Me 7

Day of August

A.D. 1997

Lee Pierce
Notary Public



The Department of Environmental Protection (Department) gives notice of its intent to issue a permit for the Prevention of Significant Deterioration (PSD permit) to the city of Tallahassee for the Purdum Generating Station proposed Unit 8 located in the city of St. Marks, Wakulla County. A Best Available Control Technology (BACT) determination was conducted for particulate matter (PM/PM10), sulfur dioxide (SO2), nitrogen oxides (NOx) and carbon monoxide (CO) pursuant to Rule 62-212.400, F.A.C. and 40 CFR 52.21. The applicant's name and address are City of Tallahassee Utility Services, 300 South Adams Street, Tallahassee, FL 32301.

The City of Tallahassee has applied to construct Unit 8, a nominal 250 megawatt (MW) combined cycle combustion turbine and heat recovery steam generator to meet its system needs and replace existing conventional steam generating Units 5 and 6. Emissions control will be accomplished by dry low NOx burners (gas) and water injection (diesel) and primary use of natural gas, an inherently clean fuel. A new 200 foot stack and a cooling tower will be added to the facility for Unit 8.

Other existing units at the plant consist of Unit 7, a nominal 44 MW steam boiler fired by natural gas and/or fuel oil, two older combustion turbines with a nominal rating of 12.3 MW each and a small auxiliary steam boiler fired by natural gas. The City has requested a facility-wide emissions cap for nitrogen oxides (NOx) and sulfur dioxide (SO2) to ensure that no increase in these emissions will occur once Unit 8 is constructed. Therefore in the future, NOx and SO2 emissions from the facility, including Unit 8, will be less than or equal to these emissions before the addition of Unit 8. Electrical output from this facility will be about three times higher than the current level with the addition of Unit 8.

Total facility-wide annual emissions including those from the project are summarized below:

Pollutants	Current Actual ton/yr	Future Estimated Emissions ton/yr	Net Increase ton/yr
PM10	10.7	59.0	48.3
SO2	80.0	80.0	0
NOx	467.0	467.0	0
CO	66.0	193.0	127.0

An air quality impact analysis was conducted. Emissions from the facility will not significantly contribute to or cause a violation of any state or federal ambient air quality standards. The maximum predicted PSD Class II increments of NO2, SO2, and PM10 consumed by all sources in the area, including this project, will be as follows:

PSD Class II Increment Consumed (mg/m3)	Allowable Increment (mg/m3)	Percent Increment Consumed
PM10		
24-hour	3.3	30
Annual	0.3	11
SO2		
24-hour	14.4	512
Annual	2.4	91
NO2	0.0	20
Annual	6.2	25

The maximum predicted PSD Class I increments of NO2, SO2 and PM10 in the St. Marks National Wilderness Area and the Bradwell Bay National Wilderness Area consumed by all sources in the area, including this project, will be as follows:

PSD Class I Increment Consumed (mg/m3)	Allowable Increment (mg/m3)	Percent Increment Consumed
PM10		
24-hour	0.73	8
Annual	0.16	4
SO2		
24-hour	16.9	25
Annual	4.9	5
NO2	0.0	2
Annual	0.91	2.5

The Department will issue the FINAL Permit, in accordance with the conditions of the DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

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Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice of intent. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection Bureau of Air Regulation 111 S. Magnolia Drive, Suite 4 Tallahassee, Florida, 32301 Telephone: (850) 488-1344 Fax: (850) 922-6979	Department of Environmental Protection NW District Office 160 Government Center Pensacola, Florida 32501 Telephone: (850) 444-8300 Fax: (850) 444-8417
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The complete project file includes the application, technical evaluations, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-1344, for additional information.

DRAFT
CONDITIONS OF CERTIFICATION
SAM O. PURDOM GENERATING STATION

- I. General**
 - A. Definitions**
 - B. Applicable Rules**
- II. General Conditions**
 - A. Facilities Operation**
 - B. Non-compliance Notification**
 - C. Safety**
 - D. Enforcement**
 - E. Design and Performance Criteria**
 - F. Certification**
 - G. Laboratories and Quality Assurance**
 - H. Procedures for Post-certification Submittals**
 - 1. Purpose of Submittals
 - 2. Filings
 - 3. Completeness
 - 4. Interagency Meetings
 - 5. Reasonable Assurance of Compliance
 - 6. Commencement of Construction
- III. Adverse Impact**
- IV. Right of Entry**
- V. Revocation or Suspension**
- VI. Civil and Criminal Liability**
- VII. Property Rights**
- VIII. Severability**
- IX. Review of Site Certification**
- X. Modification of Conditions**

The conditions of this certification may be modified in the following manner:

- A. The Board hereby delegates to the Secretary authority to modify, after notice and opportunity for hearing, any conditions pertaining to monitoring or sampling.

B. This certification shall be automatically modified to conform to any subsequent amendments, modifications, or renewals made by DEP under a federally delegated or approved program to any separately issued Prevention of Significant Deterioration (PSD) permit, Title V Air Permit, or National Pollutant Discharge Elimination system (NPDES) permit for the certified facility. The City of Tallahassee shall send each party to the original certification proceedings (at the party's last known address as shown in the record of such proceeding) notice of requests submitted by the City of Tallahassee for modifications or renewals of the above listed permits if the request involves a relief mechanism (e.g., mixing zone, variance, etc.) from state standards, a relaxation of conditions included in the permit due to state permitting requirements, or the inclusion of less restrictive air emission limitations in the air permits. DEP shall notify all parties to the certification proceeding of any intent to modify conditions under this section prior to taking final agency act.

C. All other modifications shall be made in accordance with Section 403.516, Florida Statutes.

XI. Construction

A. Standards and Review of Plans

B. Control Measures

C. Environmental Control Program

D. Reporting

XII. Air Quality

A. Facility Information

1. Facility Description

This facility currently consists of three fossil fuel-fired steam generators, two simple cycle combustion turbines and one auxiliary boiler. One of the steam generators, Boiler Number 7, is an Acid Rain Phase II Unit. The total combined electrical generating capacity from the facility is a nominal 112.6 megawatts (MW), of which a nominal 88 megawatts are provided by the steam generators and a nominal 24.6 megawatts are provided by the combustion turbines. The fuels used at this facility are natural gas and various combinations of fuel oil. The auxiliary boiler is only used as a source of steam for plant operations when none of the other steam generating units are operating. Also included in these Conditions are miscellaneous unregulated/exempt emissions units and/or activities.

These Conditions also authorize the City of Tallahassee to install a new combined cycle combustion turbine system, Unit 8, at the existing Purdom facility consisting of a 160 MW (nominal rating) GE MS7231FA combustion turbine with DLN-2 dry low NO_x (gas) and water injection (diesel) burners (Unit 8) and a nonfired heat recovery steam generator (HRSG) with a nominal 90 MW steam turbine. The compressor inlet air will be conditioned by an evaporative cooler when needed. The turbine will be started using the generator and a static start system. A new 200 foot stack and a cooling tower will be added to the facility for Unit 8.

Unit 8 will be located at the City's Sam O. Purdom Generating Station in St. Marks, Wakulla County. Existing steam generating Units 5 and 6 will be permanently shut down once Unit 8 has

completed the initial performance test. Other existing units at the plant consist of Unit 7, a pre-NSPS boiler with a nominal rating of 44 MW fired by natural gas, residual fuel oil or distillate fuel oil; two pre-NSPS distillate fuel oil or natural gas fired combustion turbines with a nominal rating of 12.3 MWs each (GT1 and GT2); and a Subpart Dc auxiliary steam boiler fired by natural gas.

The use of 'Permitting Notes' throughout these Conditions are for informational purposes, only, and are not Conditions of Certification.

2. Summary of Emissions Unit ID No(s). and Brief Description(s).

Regulated Emissions Units:

E.U. ID No. Brief Description

-005	Boiler Number 5 - 300 MMBtu/hour
-006	Boiler Number 6 - 300 MMBtu/hour
-007	Boiler Number 7 - 621 MMBtu/hour (Acid Rain, Phase II Unit)
-008	Combustion Turbine Number 1 - 228 MMBtu/hour
-009	Combustion Turbine Number 2 - 228 MMBtu/hour
-011	Auxiliary Boiler
-012	Combustion Turbine Unit 8 - 1660 MMBtu/hr (Acid Rain, Phase II Unit)

Unregulated emissions Units and/or Activities (See Appendix U-1):

E.U. ID No. Brief Description

-010	Fugitive VOC Sources - Painting Operations
-xxx	General Purpose Engines
-yyy	Emergency Generators

3. Relevant Documents

The following documents are part of these Conditions of Certification:

- Appendix E-1, List of Exempt Emissions Units and/or Activities
- Appendix U-1, List of Unregulated Emissions Units and/or Activities
- Appendix SS-1, Stack Sampling Facilities (version dated 10/7/96)
- Appendix TV-1, Title V Conditions (version dated 2/27/97)
- ASP Number 97-B-01

B. Facility-wide Conditions

The following conditions apply facility-wide:

1. Appendix TV-1, Title V Conditions (version dated 2/27/97), is a part of these Conditions. {Permitting note: Appendix TV-1, Title V Conditions, is distributed to the permittee only. Other persons requesting copies of these Conditions shall be provided one copy when requested or otherwise appropriate.}

2. General Pollutant Emission Limiting Standards. Objectionable Odor Prohibited. The permittee shall not cause, suffer, allow, or permit the discharge of air pollutants which cause or contribute to an objectionable odor.

[Rule 62-296.320(2), F.A.C.]

3. Prevention of Accidental Releases (Section 112(r) of CAA). If required by 40 CFR 68, the permittee shall submit to the implementing agency:

a. a risk management plan (RMP) when, and if, such requirement becomes applicable, and

b. certification forms and/or RMPs according to the promulgated rule schedule.

[40 CFR 68]

4. Exempt Emissions Units and/or Activities. Appendix E-1, List of Exempt Emissions Units and/or Activities, is a part of these Conditions.

[Rules 62-213.440(1), 62-213.430(6), and 62-4.040(1)(b), F.A.C.]

5. Unregulated Emissions Units and/or Activities. Appendix U-1, List of Unregulated Emissions Units and/or Activities, is a part of these Conditions.

[Rule 62-213.440(1), F.A.C.]

6. General Pollutant Emission Limiting Standards. Volatile Organic Compounds Emissions or Organic Solvents Emissions. The permittee shall allow no person to store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department.

{Permitting Note: No vapor emission control devices or systems are deemed necessary nor ordered by the Department as of the issuance date of these Conditions.}

[Rule 62-296.320(1)(a), F.A.C.]

7. General Particulate Emission Limiting Standards. General Visible Emissions Standard.

Except for emissions units that are subject to a particulate matter or opacity limit set forth or established by rule and reflected by conditions in these Conditions, no person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity, the density of which is equal to or greater than that designated as Number 1 on the Ringelmann Chart (20 percent opacity). EPA Method 9 is the method of compliance pursuant to Chapter 62-297, F.A.C.

[Rules 62-296.320(4)(b)1. & 4., F.A.C.]

8. Reasonable precautions to prevent emissions of unconfined particulate matter at this facility include:

a. The portable concrete mixer shall be operated on an as-needed basis. Reasonable precautions include enclosing the activity where practical.

b. Abrasive blasting activities that are associated with normal maintenance and corrosion control activities shall be enclosed where practical.

c. Unconfined emissions associated with the limited on-site traffic shall be controlled by limiting vehicle speeds and unnecessary traffic within the plant grounds [Rule 62-296.320(4)(c)2., F.A.C.; and, proposed by applicant in initial Title V permit application received June 14, 1996, and amended by comments received April 25, 1997.]

9. The Department's Northwest District Branch Office (Tallahassee) telephone number for reporting problems, malfunctions or exceedances under these Conditions is (850) 488-3704, day or night, and for emergencies involving a significant threat to human health or the environment is (850) 413-9911. The Department's Northwest District Office (Pensacola) telephone number for routine business, including compliance test notifications, is (850) 444-8364 during normal working hours.

10. The permittee shall submit all compliance related notifications and reports required by these Conditions to the Department's Northwest District Office located at: 160 Governmental Center, Pensacola, Florida 32501-5794.

11. Oxides of Nitrogen - Facility Wide Cap. Annual emissions of NO_x shall not exceed 467 tons per year from the Purdom facility (Unit 8, Unit 7, GT1, GT2, and the auxiliary boiler) on a calendar year basis, as measured by applicable compliance methods.
[Requested by the applicant.]

12. Sulfur Dioxide - Facility Wide Cap. Annual emissions of SO₂ shall not exceed 80 tons per year from the Purdom facility (Unit 8, Unit 7, GT1, GT2, and the auxiliary boiler) on a calendar year basis, as measured by applicable compliance methods.
[Requested by the applicant.]

C. Emissions Unit(s)

Subsection A. This section addresses the following emissions unit(s).

<u>E.U. ID No.</u>	<u>Brief Description</u>
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-005	Boiler Number 5
-006	Boiler Number 6

These emissions units are steam generators designated as "Boiler Number 5" and "Boiler Number 6." Boiler Number 5 is tangentially fired. Each boiler is rated at a maximum heat input of 300 million Btu per hour (MMBtu/hour) while being fueled with natural gas and/or No. 2 thru No. 6 fuel oil. Each boiler nominally produces 220,000 pounds of steam per hour to run a nominal 22 megawatt (electric) turbine-generator (one each).

{Permitting notes: These units pre-date PSD regulations, but are regulated under Rule 62-296.405, F.A.C., Fossil Fuel Steam Generators With More Than 250 Million BTU per Hour Heat Input. Boiler Number 5 began commercial operation in 1958. Boiler Number 6 began commercial operation in 1961. Stack height = 125 feet, exit diameter = 13.0 feet, exit temperature = 344 °F, actual volumetric flow rate = 94,400 acfm. The exhaust from Boiler Number 5 and Boiler Number 6 share the same physical stack. Emissions from the boilers are controlled by proper combustion practices.}

The following specific conditions apply to the emissions units listed above:

Essential Potential to Emit (PTE) Parameters

A.1. Permitted Capacity. The maximum operation heat input rates are as follows:

<u>Unit No.</u>	<u>MMBtu/hr Heat Input</u>	<u>Fuel Type</u>
5	300	Natural Gas
	300	No. 2 thru No. 6 Fuel Oil
6	300	Natural Gas
	300	No. 2 thru No. 6 Fuel Oil

[Rules 62-4.160(2), 62-210.200(PTE) and 62-296.405, F.A.C.]

A.2. Emissions Unit Operating Rate Limitation After Testing. See specific condition **C.11**.
[Rule 62-297.310(2), F.A.C.]

A.3. Methods of Operation - Fuels. The only fuels allowed to be burned in these boilers are natural gas and/or new No. 2 thru No. 6 fuel oil.
[Rule 62-213.410, F.A.C.; and, Applicant Request dated June 24, 1997.]

A.4. Hours of Operation. These emissions units may operate continuously, i.e. 8760 hours/year. The permittee shall maintain an operation log available for Department inspection that documents the total hours of annual operation, including a detailed account of the hours operated on each of the allowable fuels.
[Rule 62-210.200(PTE), F.A.C.; and, AO65-242831, Specific Condition #3.]

Emission Limitations and Standards

{Permitting Note: The attached Table 1-1, Summary of Air Pollutant Standards and Terms, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of these Conditions.}

A.5. Visible Emissions. Visible emissions shall not exceed 20 percent opacity, except for one two-minute period per hour during which opacity shall not exceed 40 percent. Emissions units governed by this visible emissions limit shall compliance test for particulate matter emissions annually and as otherwise required by Chapter 62-297, F.A.C.
[Rule 62-296.405(1)(a), F.A.C.]

A.6. Visible Emissions - Soot Blowing and Load Change. Visible emissions shall not exceed 60 percent opacity during the 3-hours in any 24 hour period of excess emissions allowed for boiler cleaning (soot blowing) and load change.

A load change occurs when the operational capacity of a unit is in the 10 percent to 100 percent capacity range, other than startup or shutdown, which exceeds 10 percent of the unit's rated capacity and which occurs at a rate of 0.5 percent per minute or more.
[Rule 62-210.700(3), F.A.C.]

A.7. Particulate Matter. Particulate matter emissions shall not exceed 0.1 pound per million Btu heat input, as measured by applicable compliance methods.
[Rule 62-296.405(1)(b), F.A.C.]

A.8. Particulate Matter - Soot Blowing and Load Change. Particulate matter emissions shall not exceed an average of 0.3 pound per million Btu heat input during the 3-hours in any 24 hour period of excess emissions allowed for boiler cleaning (soot blowing) and load change.

[Rule 62-210.700(3), F.A.C.]

A.9. Sulfur Dioxide. When burning liquid fuel, sulfur dioxide emissions shall not exceed 1.87 pounds per million Btu heat input, as measured by applicable compliance methods. However, the permittee has requested a lower limit of 1.3 pounds per million Btu heat input, as measured by applicable compliance methods.

[Rules 62-296.405(1)(c)1.h. & 62-204.240(1)(a), F.A.C.; and, requested by applicant in initial Title V permit application received June 14, 1996.]

A.10. Sulfur Dioxide - Sulfur Content. The No. 2 thru No. 6 fuel oil sulfur content shall not exceed 1.20 percent, by weight. See specific condition A.17. and common condition C.9.

[Rule 62-296.405(1)(e)3., F.A.C.; and, requested in a letter by applicant dated March 21, 1997.]

A.11. This emissions unit is also subject to the conditions contained in Subsection C. Common Conditions, as specified below.

Excess Emissions

A.12. See common conditions C.1. - C.3.

Monitoring of Operations

A.13. Sulfur Dioxide. The permittee elected to demonstrate compliance by accepting a liquid fuel sulfur limit that will be verified with a fuel analysis provided by the vendor upon each fuel delivery. This protocol is allowed because the emissions unit does not have an operating flue gas desulfurization device. See specific conditions A.10., C.8. and C.9.

[Rule 62-296.405(1)(f)1.b., F.A.C.]

A.14. Determination of Process Variables. See common condition C.4.

Test Methods and Procedures

{Permitting Note: The attached Table 2-1, Summary of Compliance Requirements, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of these Conditions.}

A.15. Visible Emissions. See common conditions C.5., C.6. and C.16.

A.16. Particulate Matter. See common conditions C.7. and C.17.

A.17. Sulfur Dioxide. See specific condition A.13. and common conditions C.8. and C.9.

A.18. Operating Rate During Testing. See common condition C.11.

A.19. Calculation of Emission Rate. See common condition C.12.

A.20. Applicable Test Procedures. See common condition C.13.

A.21. Required Stack Sampling Facilities. See common condition C.14.

A.22. Frequency of Compliance Tests. See common condition C.15.

Recordkeeping and Reporting Requirements

A.23. See common conditions C.18. - C.20.

Reasonable Assurances

A.24. Fuel Oil Storage Tank and Piping Restrictions. No fuel oil shall be placed into the fuel oil storage tanks, which are connected by a single pipe-line at this time and used to supply fuel oil to Boilers Number 5, Number 6 and Number 7, that exceeds the sulfur limitation specified in specific condition A.10., until Boilers Number 5 and Number 6 are permanently shutdown or separate piping is installed between the fuel oil storage tanks and Boilers 5 and 6 and Boiler 7. [Rule 62-4.070(3), F.A.C.]

Miscellaneous

A.25. Permanent Shutdown. Boilers Number 5 and Number 6 are to be permanently shut down once Unit 8 has completed the initial performance test. [Applicant's Request in Site Certification Application dated March 7, 1997.]

Subsection B. This section addresses the following emissions unit.

E.U. ID No. Brief Description

-007 Boiler Number 7, (Phase II Acid Rain Unit)

This is a Riley Stoker Corporation model RX-33 steam generator designated as "Boiler Number 7." It is rated at a maximum heat input of 621 MMBtu/hour while being fueled with natural gas and/or No. 2 thru No. 6 fuel oil. It nominally produces 500,000 pounds of steam per hour to run a nominal 44 MW turbine-generator.

{Permitting notes: This emissions unit is regulated under Acid Rain, Phase II. This unit pre-dates PSD regulations, but is regulated under Rule 62-296.405, F.A.C., Fossil Fuel Steam Generators With More Than 250 Million BTU per Hour Heat Input. Boiler Number 7 began commercial operation in 1966. Stack height = 180 feet, exit diameter = 9.0 feet, exit temperature = 300 °F, actual volumetric flow rate = 180,798 acfm. Emissions from this boiler are controlled by proper combustion practices.}

The following specific conditions apply to the emissions unit listed above:

Essential Potential to Emit (PTE) Parameters

B.1. Permitted Capacity. The maximum operation heat input rates are as follows:

<u>Unit No.</u>	<u>MMBtu/hr Heat Input</u>	<u>Fuel Type</u>
7	621	Natural Gas
	621	No. 2 thru No. 6 Fuel Oil; On-Specification Used Oil

[Rules 62-4.160(2), 62-210.200(PTE) and 62-296.405, F.A.C.; and, Applicant's request.]

B.2. Emissions Unit Operating Rate Limitation After Testing. See specific condition **C.11.** [Rule 62-297.310(2), F.A.C.]

B.3. Methods of Operation - Fuels. The fuels that are allowed to be burned in this boiler are natural gas and/or new No. 2 thru No. 6 fuel oil and/or on-specification used oil. (See Specific Condition **B.24.**)

[Rule 62-213.410, F.A.C.; and, Applicant Request dated June 24, 1997.]

B.4. Hours of Operation. This emissions unit may operate continuously, i.e. 8760 hours/year. The permittee shall maintain an operation log available for Department inspection that documents the total hours of annual operation, including a detailed account of the hours operated on each of the allowable fuels.

[Rule 62-210.200(PTE), F.A.C.; and, AO65-242831, Specific Condition #3.]

Emission Limitations and Standards

{Permitting Note: The attached Table 1-1, Summary of Air Pollutant Standards and Terms, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of these Conditions.}

B.5. Visible Emissions. Visible emissions shall not exceed 20 percent opacity, except for one two-minute period per hour during which opacity shall not exceed 40 percent. Emissions units governed by this visible emissions limit shall compliance test for particulate matter emissions annually and as otherwise required by Chapter 62-297, F.A.C.

[Rule 62-296.405(1)(a), F.A.C.]

B.6. Visible Emissions - Soot Blowing and Load Change. Visible emissions shall not exceed 60 percent opacity during the 3-hours in any 24 hour period of excess emissions allowed for boiler cleaning (soot blowing) and load change.

A load change occurs when the operational capacity of a unit is in the 10 percent to 100 percent capacity range, other than startup or shutdown, which exceeds 10 percent of the unit's rated capacity and which occurs at a rate of 0.5 percent per minute or more.

[Rule 62-210.700(3), F.A.C.]

B.7. Particulate Matter. Particulate matter emissions shall not exceed 0.1 pound per million Btu heat input, as measured by applicable compliance methods.

[Rule 62-296.405(1)(b), F.A.C.]

B.8. Particulate Matter - Soot Blowing and Load Change. Particulate matter emissions shall not exceed an average of 0.3 pound per million Btu heat input during the 3-hours in any 24 hour period of excess emissions allowed for boiler cleaning (soot blowing) and load change.

[Rule 62-210.700(3), F.A.C.]

B.9. Sulfur Dioxide. When burning liquid fuel, sulfur dioxide emissions shall not exceed 1.87 pounds per million Btu heat input, as measured by applicable compliance methods.

[Rule 62-296.405(1)(c)1.h., F.A.C.]

B.10. Sulfur Dioxide - Sulfur Content. The No. 2 thru No. 6 fuel oil sulfur content shall not exceed 1.70 percent, by weight. See specific condition **B.17.** and common condition **C.9.**

[Rule 62-296.405(1)(e)3., F.A.C.; and, requested by applicant in a letter dated April 16, 1997.]

B.11. This emissions unit is also subject to the conditions contained in Subsection C. Common Conditions, as specified below.

Excess Emissions

B.12. See common conditions **C.1. - C.3.**

Monitoring of Operations

{Permitting Note: In accordance with the Acid Rain Phase II requirements, the following continuous monitors are installed on this unit: Gas Fuel Flow, Oil Fuel Flow, NO_x and CO₂.}

B.13. Sulfur Dioxide. The permittee elected to demonstrate compliance by accepting a liquid fuel sulfur limit that will be verified with a fuel analysis provided by the vendor upon each fuel delivery. This protocol is allowed because the emissions unit does not have an operating flue gas desulfurization device. See specific conditions **B.10., C.8. and C.9.**

[Rule 62-296.405(1)(f)1.b., F.A.C.; and, requested by applicant in a letter dated April 16, 1997.]

B.14. Determination of Process Variables. See common condition **C.4.**

Test Methods and Procedures

{Permitting Note: The attached Table 2-1, Summary of Compliance Requirements, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of these Conditions.}

- B.15. Visible Emissions. See common conditions C.5., C.6. and C.16.
- B.16. Particulate Matter. See common conditions C.7. and C.17.
- B.17. Sulfur Dioxide. See specific condition B.13 and common conditions C.8. and C.9.
- B.18. Operating Rate During Testing. See common condition C.11.
- B.19. Calculation of Emission Rate. See common condition C.12.
- B.20. Applicable Test Procedures. See common condition C.13.
- B.21. Required Stack Sampling Facilities. See common condition C.14.
- B.22. Frequency of Compliance Tests. See common condition C.15.

Recordkeeping and Reporting Requirements

- B.23. See common conditions C.18. - C.20.

Miscellaneous Conditions.

B.24. Used Oil. Burning of on-specification used oil is allowed at this emissions unit in accordance with all other conditions of these Conditions and the following conditions:

a. On-specification Used Oil Emissions Limitations: This emissions unit is permitted to burn on-specification used oil, which contains a PCB concentration of less than 50 ppm. On-specification used oil is defined as used oil that meets the specifications of 40 CFR 279 - Standards for the Management of Used Oil, listed below. "Off-specification" used oil shall not be burned. Used oil which fails to comply with any of these specification levels is considered "off-specification" used oil.

CONSTITUENT/PROPERTY	ALLOWABLE LEVEL
Arsenic	5 ppm maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Total Halogens	1000 ppm maximum
Flash point	100 degrees F minimum

- b. Quantity Limitation: This emissions unit is permitted to burn "on-specification" used oil that is generated by the City of Tallahassee in the production and distribution of electricity, not to exceed 10,000 gallons during any consecutive 12 month period.
- c. PCB Limitation: Used oil containing a PCB concentration of 50 or more ppm shall not be burned at this facility. Used oil shall not be blended to meet this requirement.
- d. Operational Requirements: On-specification used oil with a PCB concentration of 2 to less than 50 ppm shall be burned only at normal source operating temperatures. On-

specification used oil with a PCB concentration of 2 to less than 50 ppm shall not be burned during periods of startup or shutdown.

e. Testing Requirements: The owner or operator shall sample and analyze each batch of used oil to be burned for the following parameters:

Arsenic, cadmium, chromium, lead, total halogens, flash point and PCBs.

Testing (sampling, extraction and analysis) shall be performed using approved methods specified in EPA Publication SW-846 (Test Methods for Evaluating Solid Waste, Physical/Chemical Methods).

f. Record Keeping Requirements: The owner or operator shall obtain, make, and keep the following records related to the use of used oil in a form suitable for inspection at the facility by the Department: [40 CFR 279.61 and 761.20(e)]

(1) The gallons of on-specification used oil generated and burned each month. (This record shall be completed no later than the fifteenth day of the succeeding month.)

(2) The total gallons of on-specification used oil burned in the preceding consecutive 12-month period. (This record shall be completed no later than the fifteenth day of the succeeding month.)

(3) Results of the analyses required above.

g. Reporting Requirements: The owner or operator shall submit to the Northwest District office, within thirty days of the end of each calendar quarter, the analytical results and the total amount of on-specification used oil generated and burned during the quarter.

The owner or operator shall submit, with the Annual Operation Report form, the analytical results and the total amount of on-specification used oil burned during the previous calendar year.

[Rule 62-4.070(3) and 62-213.440, F.A.C., 40 CFR 279 and 40 CFR 761, unless otherwise noted.]

Subsection C. Common Conditions.

{Permitting Note: The following conditions are common to Boilers No. 5, 6 and 7, as specified in Subsections A and B, above, and to the auxiliary boiler and Unit 8 as specified in Subsections E and F, below. They are placed here as a convenience and to avoid duplication.}

Excess Emissions

C.1. Excess emissions resulting from malfunction shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration.

[Rule 62-210.700(1), F.A.C.]

C.2. Excess emissions resulting from startup or shutdown shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized.

[Rule 62-210.700(2), F.A.C.]

C.3. Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown or malfunction shall be prohibited.

[Rule 62-210.700(4), F.A.C.]

Monitoring of Operations

C.4. Determination of Process Variables.

a. Required Equipment. The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.

b. Accuracy of Equipment. Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

[Rule 62-297.310(5), F.A.C.]

Test Methods and Procedures

C.5. Visible Emissions. The test method for visible emissions shall be DEP Method 9, incorporated in Chapter 62-297, F.A.C. A transmissometer may be used and calibrated according to Rule 62-297.520, F.A.C. See specific condition C.6.

[Rule 62-296.405(1)(e)1., F.A.C.]

C.6. DEP Method 9. The provisions of EPA Method 9 (40 CFR 60, Appendix A) are adopted by reference with the following exceptions:

a. EPA Method 9, Section 2.4, Recording Observations. Opacity observations shall be made and recorded by a certified observer at sequential fifteen second intervals during the required period of observation.

b. EPA Method 9, Section 2.5, Data Reduction. For a set of observations to be acceptable, the observer shall have made and recorded, or verified the recording of, at least 90 percent of the possible individual observations during the required observation period. For single-valued opacity standards (e.g., 20 percent opacity), the test result shall be the highest valid six-minute average for the set of observations taken. For multiple-valued opacity standards (e.g., 20 percent opacity, except that an opacity of 40 percent is permissible for not more than two minutes per hour) opacity shall be computed as follows:

1. For the basic part of the standard (i.e., 20 percent opacity) the opacity shall be determined as specified above for a single-valued opacity standard.

2. For the short-term average part of the standard, opacity shall be the highest valid short-term average (i.e., two-minute, three-minute average) for the set of observations taken.

In order to be valid, any required average (i.e., a six-minute or two-minute average) shall be based on all of the valid observations in the sequential subset of observations selected, and the selected subset shall contain at least 90 percent of the observations possible for the required averaging time. Each required average shall be calculated by summing the opacity value of each of the valid observations in the appropriate subset, dividing this sum by the number of valid observations in the subset, and rounding the result to the nearest whole number. The number of missing observations in the subset shall be indicated in parenthesis after the subset average value. [Rule 62-297.401, F.A.C.]

C.7. Particulate Matter. The test methods for particulate emissions shall be EPA Methods 17, 5, 5B, or 5F, incorporated by reference in Chapter 62-297, F.A.C. The minimum sample volume shall be 30 dry standard cubic feet. EPA Method 5 may be used with filter temperature no more than 320 degrees Fahrenheit. For EPA Method 17, stack temperature shall be less than 375 degrees Fahrenheit. The owner or operator may use EPA Method 5 to demonstrate compliance. EPA Method 3 or 3A with Orsat analysis shall be used when the oxygen based F-factor, computed according to EPA Method 19, is used in lieu of heat input. Acetone wash shall be used with EPA Method 5 or 17.

[Rules 62-296.405(1)(e)2. and 62-297.401, F.A.C.]

C.8. Sulfur Dioxide. The test methods for sulfur dioxide emissions shall be EPA Methods 6, 6A, 6B, or 6C, incorporated by reference in Chapter 62-297, F.A.C. Fuel sampling and analysis may be used as an alternate sampling procedure if such a procedure is incorporated into the operation permit for the emissions unit. If the emissions unit obtains an alternate procedure under the provisions of Rule 62-297.620, F.A.C., the procedure shall become a condition of the emissions unit's permit. The Department will retain the authority to require EPA Method 6 or 6C if it has reason to believe that exceedences of the sulfur dioxide emissions limiting standard are occurring. Results of an approved fuel sampling and analysis program shall have the same effect as EPA Method 6 test results for purposes of demonstrating compliance or noncompliance with sulfur dioxide standards. The permittee may use the EPA test methods, referenced above, to

demonstrate compliance; however, as an alternate sampling procedure authorized by permit, the permittee elected to demonstrate compliance by accepting a liquid fuel sulfur limit that will be verified with a fuel analysis provided by the vendor upon each fuel delivery. See specific conditions A.10., B.10. and C.9.

[Rules 62-213.440, 62-296.405(1)(e)3. and 62-297.401, F.A.C.; and, AO65-242831.]

C.9. The fuel sulfur content, percent by weight, for liquid fuels shall be evaluated using either ASTM D2622-92, ASTM D4294-90, or both ASTM D4057-88 and ASTM D129-91.

[Rules 62-213.440, 62-296.405(1)(e)3., 62-296.405(1)(f)1.b. and 62-297.440, F.A.C.]

Compliance Test Requirements

C.10. Required Number of Test Runs. For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five day period allowed for the test, the Secretary or his or her designee may accept the results of the two complete runs as proof of compliance, provided that the arithmetic mean of the results of the two complete runs is at least 20 percent below the allowable emission limiting standards.

[Rule 62-297.310(1), F.A.C.]

C.11. Operating Rate During Testing. Testing of emissions shall be conducted with the emissions unit operating at permitted capacity, which is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impracticable to test at permitted capacity, an emissions unit may be tested at less than the minimum permitted capacity (i.e., at less than 90 percent of the maximum operation rate allowed by the permit); in this case, subsequent emissions unit operation is limited to 110 percent of the test load until a new test is conducted, provided however, operations do not exceed 100 percent of the maximum operation rate allowed by the permit. Once the emissions unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity.

[Rules 62-297.310(2) & (2)b., F.A.C.]

C.12. Calculation of Emission Rate. The indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the separate test runs unless otherwise specified in a particular test method or applicable rule.

[Rule 62-297.310(3), F.A.C.]

C.13. Applicable Test Procedures.

a. Required Sampling Time.

1. Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes.

2. Opacity Compliance Tests. When either EPA Method 9 or DEP Method 9 is specified as the applicable opacity test method, the required minimum period of observation for a compliance test shall be sixty (60) minutes for emissions units which emit or have the potential to emit 100 tons per year or more of particulate matter, and thirty (30) minutes for emissions units which have potential emissions less than 100 tons per year of particulate matter and are not subject to a multiple-valued opacity standard. The opacity test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. Exceptions to these requirements are as follows:

The minimum observation period for opacity tests conducted by employees or agents of the Department to verify the day-to-day continuing compliance of a unit or activity with an applicable opacity standard shall be twelve minutes.

b. Minimum Sample Volume. Unless otherwise specified in the applicable rule, the minimum sample volume per run shall be 25 dry standard cubic feet.

c. Required Flow Rate Range. For EPA Method 5 particulate sampling, acid mist/sulfur dioxide, and fluoride sampling which uses Greenburg Smith type impingers, the sampling nozzle and sampling time shall be selected such that the average sampling rate will be between 0.5 and 1.0 actual cubic feet per minute, and the required minimum sampling volume will be obtained.

d. Calibration of Sampling Equipment. Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1.

TABLE 297.310-1
CALIBRATION SCHEDULE

ITEM	MINIMUM CALIBRATION FREQUENCY	REFERENCE INSTRUMENT	TOLERANCE
Liquid in glass thermometer	Annually	ASTM Hg in glass ref. thermometer or equivalent, or thermometric points	+/-2%
Bimetallic thermometer	Quarterly	Calib. liq. in glass thermometer	5 degrees F
Thermocouple	Annually	ASTM Hg in glass ref. thermometer, NBS calibrated reference and potentiometer	5 degrees F
Barometer	Monthly	Hg barometer or NOAA station	+/-1% scale
Pitot Tube	When required or when damaged	By construction or measurements in wind tunnel D greater than 16" and standard pitot tube	See EPA Method 2, Fig. 2-2 & 2-3
Probe Nozzles	Before each test or when nicked, dented, or corroded	Micrometer	+/-0.001" mean of at least three readings Max. deviation between readings .004"
Dry Gas Meter and Orifice Meter	1. Full Scale: When received, When 5% change observed, Annually 2. One Point: Semiannually 3. Check after each test series	Spirometer or calibrated wet test or dry gas test meter	2%
		Comparison check	5%

e. Allowed Modification to EPA Method 5. When EPA Method 5 is required, the following modification is allowed: the heated filter may be separated from the impingers by a flexible tube.

[Rule 62-297.310(4), F.A.C.]

C.14. Required Stack Sampling Facilities. When a mass emissions stack test is required, the permittee shall comply with the requirements contained in Appendix SS-1, Stack Sampling Facilities, attached to these Conditions.

[Rule 62-297.310(6), F.A.C.]

C.15. Frequency of Compliance Tests. The following provisions apply only to those emissions units that are subject to an emissions limiting standard for which compliance testing is required.

a. General Compliance Testing.

1. For excess emission limitations for particulate matter specified in Rule 62-210.700, F.A.C., a compliance test shall be conducted annually while the emissions unit is operating under soot blowing conditions in each federal fiscal year during which soot blowing is part of normal emissions unit operation, except that such test shall not be required in any federal fiscal year in which a fossil fuel steam generator does not burn liquid fuel for more than 400 hours other than during startup.

2. The owner or operator of an emissions unit that is subject to any emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining a renewed operation permit. Emissions units that are required to conduct an annual compliance test may submit the most recent annual compliance test to satisfy the requirements of this provision. In renewing an air operation permit pursuant to Rule 62-210.300(2)(a)3.b., c., or d., F.A.C., the Department shall not require submission of emission compliance test results for any emissions unit that, during the year prior to renewal:

(a) Did not operate; or

(b) In the case of a fuel burning emissions unit, burned liquid fuel for a total of no more than 400 hours.

3. During each federal fiscal year (October 1 - September 30), unless otherwise specified by rule, order, or permit, the owner or operator of each emissions unit shall have a formal compliance test conducted for:

(a) Visible emissions, if there is an applicable standard;

(b) Each of the following pollutants, if there is an applicable standard, and if the emissions unit emits or has the potential to emit: 5 tons per year or more of lead or lead compounds measured as elemental lead; 30 tons per year or more of acrylonitrile; or 100 tons per year or more of any other regulated air pollutant; and

(c) Each NESHAP pollutant, if there is an applicable emission standard.

4. An annual compliance test for particulate matter emissions shall not be required for any fuel burning emissions unit that, in a federal fiscal year, does not burn liquid fuel, other than during startup, for a total of more than 400 hours.

5. Any combustion turbine that does not operate for more than 400 hours per year shall conduct a visible emissions compliance test once per each five-year period, coinciding with the term of its air operation permit.

6. The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator.

7. An annual compliance test conducted for visible emissions shall not be required for units exempted from permitting at Rule 62-210.300(3)(a), F.A.C., or units permitted under the General Permit provisions at Rule 62-210.300(4), F.A.C.

b. Special Compliance Tests. When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department.

c. Waiver of Compliance Test Requirements. If the owner or operator of an emissions unit that is subject to a compliance test requirement demonstrates to the Department, pursuant to the procedure established in Rule 62-297.620, F.A.C., that the compliance of the emissions unit with an applicable weight emission limiting standard can be adequately determined by means other than the designated test procedure, such as specifying a surrogate standard of no visible emissions for particulate matter sources equipped with a bag house or specifying a fuel analysis for sulfur dioxide emissions, the Department shall waive the compliance test requirements for such emissions units and order that the alternate means of determining compliance be used, provided, however, the provisions of Rule 62-297.310(7)(b), F.A.C., shall apply.

[Rule 62-297.310(7), F.A.C.; and, AO65-242831, Specific Condition #5 (frequency).]

C.16. Visible Emissions Testing - Annual. By these Conditions, annual emissions compliance testing for visible emissions is not required for these emissions units while burning:

- a. only gaseous fuels; or
- b. gaseous fuels in combination with any amount of liquid fuels for less than 400 hours per year; or
- c. only liquid fuels for less than 400 hours per year.

[Rule 62-297.310(7)(a)4., F.A.C.]

C.17 Particulate Matter testing - Annual and Permit Renewal. Annual and permit renewal compliance testing for particulate matter emissions is not required for these emissions units while burning:

- a. only gaseous fuels; or
- b. gaseous fuels in combination with any amount of liquid fuels for less than 400 hours per year; or
- c. only liquid fuels for less than 400 hours per year.

[Rules 62-297.310(7)(a)3. & 5., F.A.C.; and, ASP Number 97-B-01.]

Recordkeeping and Reporting Requirements

{Permitting Note: The reports that are required by the following conditions are to be sent to the Department of Environmental Protection's Northwest District Office, 160 Governmental Center, Pensacola, Florida 322501-5794}

C.18. In the case of excess emissions resulting from malfunctions, each owner or operator shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department.

[Rule 62-210.700(6), F.A.C.]

C.19. Submit to the Department a written report of emissions in excess of emission limiting standards as set forth in Rule 62-296.405(1), F.A.C., for each calendar quarter. The nature and cause of the excess emissions shall be explained. This report does not relieve the owner or operator of the legal liability for violations. All recorded data shall be maintained on file by the Source for a period of five years.

[Rules 62-213.440 and 62-296.405(1)(g), F.A.C.]

C.20. Test Reports.

a. The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test.

b. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed.

c. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information:

1. The type, location, and designation of the emissions unit tested.
2. The facility at which the emissions unit is located.
3. The owner or operator of the emissions unit.
4. The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.

5. The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
6. The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
7. A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
8. The date, starting time and duration of each sampling run.
9. The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
10. The number of points sampled and configuration and location of the sampling plane.
11. For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
12. The type, manufacturer and configuration of the sampling equipment used.
13. Data related to the required calibration of the test equipment.
14. Data on the identification, processing and weights of all filters used.
15. Data on the types and amounts of any chemical solutions used.
16. Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.
17. The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.
18. All measured and calculated data required to be determined by each applicable test procedure for each run.
19. The detailed calculations for one run that relate the collected data to the calculated emission rate.
20. The applicable emission standard, and the resulting maximum allowable emission rate for the emissions unit, plus the test result in the same form and unit of measure.
21. A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.
[Rules 62-213.440 and 62-297.310(8), F.A.C.]

Miscellaneous Conditions

C.21. If particulate matter and visible emissions tests are required, the tests shall be conducted concurrently and shall be performed using the maximum fuel oil/natural gas ratio that can be fired while meeting the standards.

[Rule 62-4.070(3), F.A.C.; and, Applicant request dated April 25, 1997.]

Subsection D. This section addresses the following emissions units.

E.U. ID No. Brief Description

- 008 Combustion Turbine Number 1
- 009 Combustion Turbine Number 2

These emissions units are simple cycle combustion turbines manufactured by Westinghouse (model number W171G) and are designated as "Combustion Turbine Number 1" and "Combustion Turbine Number 2". They are each rated at a maximum heat input of 228 million Btu per hour (MMBtu/hour) while being fueled by natural gas and/or No. 2 fuel oil. These combustion turbines are used as peaking units during peak demand times, during emergencies, and during controls testing, to run a nominal 12.3 MW generator (each). Emissions from the combustion turbines are controlled by good combustion practices.

{Permitting notes: These emissions units are regulated under Rule 62-210.300, F.A.C., Permits Required. These units are not subject to 40 CFR 60, Subpart GG, Standards of Performance for New Stationary Gas Turbines. Combustion Turbine Number 1 began commercial operation in 1963. Combustion Turbine Number 2 began commercial operation in 1963. Each combustion turbine has its own stack. Stack height = 38 feet, exit diameter = 10 feet, exit temperature = 880 °F, actual volumetric flow rate = 395,080 acfm.}

The following specific conditions apply to the emissions units listed above:

Essential Potential to Emit (PTE) Parameters

D.1. Permitted Capacity. The maximum operation heat input rates are as follows:

<u>Unit No.</u>	<u>MMBtu/hr Heat Input</u>	<u>Fuel Type</u>
8	228 (LHV @ 80 degrees Fahrenheit)	Natural Gas
	228 (LHV @ 80 degrees Fahrenheit)	No. 2 Fuel Oil
9	228 (LHV @ 80 degrees Fahrenheit)	Natural Gas
	228 (LHV @ 80 degrees Fahrenheit)	No. 2 Fuel Oil

[Rules 62-4.160(2) and 62-210.200(PTE), F.A.C.]

D.2. Emissions Unit Operating Rate Limitation After Testing. See specific condition **D.13.**
[Rule 62-297.310(2), F.A.C.]

D.3. Methods of Operation - Fuels. Only natural gas and/or new No. 2 fuel oil shall be fired in these turbines.
[Rule 62-213.410, F.A.C.]

D.4. Hours of Operation. Each combustion turbine may operate 6993 hours per year. The permittee shall maintain an operation log available for Department inspection that documents the total hours of annual operation, including a detailed account of the hours operated on each of the allowable fuels.
[Rules 62-4.160(2) and 62-210.200(PTE), F.A.C.; and, AO65-242827, Specific Condition #3.]

Emission Limitations and Standards

{Permitting Note: The attached Table 1-1, Summary of Air Pollutant Standards and Terms, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of these Conditions.}

D.5. Visible Emissions. Visible emissions from each turbine shall not be equal to or greater than 20 percent opacity.

[Rule 62-296.320(4)(b)1.; F.A.C.; and, AO65-242827.]

D.6. Sulfur Dioxide - Sulfur Content. The sulfur content of the No. 2 fuel oil shall not exceed 0.4 percent, by weight. After the initial performance test for Unit 8 is completed, the sulfur content of the No. 2 fuel oil shall not exceed 0.05 percent, by weight. See specific condition

D.12.

[AO65-242827; and, applicant request on initial Title V application received June 14, 1996.]

Excess Emissions

D.7. Excess emissions from these emissions units resulting from startup, shutdown or malfunction shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration.
[Rule 62-210.700(1), F.A.C.]

D.8. Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown or malfunction shall be prohibited.

[Rule 62-210.700(4), F.A.C.]

Monitoring of Operations

D.9. Sulfur Dioxide. The permittee shall demonstrate compliance with the liquid fuel sulfur limit by means of a fuel analysis provided by the vendor upon each fuel delivery. See specific conditions **D.6. and D.12.**

[Rule 62-213.440, F.A.C.]

D.10. Determination of Process Variables.

(a) Required Equipment. The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.

(b) Accuracy of Equipment. Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

[Rule 62-297.310(5), F.A.C.]

Test Methods and Procedures

{Permitting Note: The attached Table 2-1, Summary of Compliance Requirements, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of these Conditions.}

D.11. Visible emissions. The test method for visible emissions shall be EPA Method 9, adopted and incorporated by reference in Rule 62-204.800, F.A.C., and referenced in Chapter 62-297, F.A.C.

[Rules 62-204.800, 62-296.320(4)(b)4.a. and 62-297.401, F.A.C.]

D.12. Sulfur Content. The fuel sulfur content, percent by weight, for liquid fuels shall be evaluated using either ASTM D2622-92, ASTM D4294-90, or both ASTM D4057-88 and ASTM D129-91.

[Rules 62-213.440 and 62-297.440, F.A.C.]

D.13. Operating Rate During Testing. Testing of emissions shall be conducted with each emissions unit operating at permitted capacity, which is defined as 95-100 percent of the manufacturer's rated heat input achievable for the average ambient (or conditioned) air temperature during the test. If it is impracticable to test at capacity, then sources may be tested at less than capacity. In such cases, the entire heat input vs. inlet temperature curve will be adjusted by the increment equal to the difference between the design heat input value and 105 percent of the value reached during the test. Data, curves, and calculations necessary to demonstrate the heat input rate correction at both design and test conditions shall be submitted to the Department with the compliance test report.

[AO65-242827 Specific Condition No. 2; and, Applicant Request dated June 24, 1997.]

D.14. Applicable Test Procedures.

a. Required Sampling Time.

1. Opacity Compliance Tests. When either EPA Method 9 or DEP Method 9 is specified as the applicable opacity test method, the required minimum period of observation for a compliance test shall be sixty (60) minutes for emissions units which emit or have the potential to emit 100 tons per year or more of particulate matter, and thirty (30) minutes for emissions units which have potential emissions less than 100 tons per year of particulate matter and are not subject to a multiple-valued opacity standard. The opacity test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. Exceptions to these requirements are as follows:

The minimum observation period for opacity tests conducted by employees or agents of the Department to verify the day-to-day continuing compliance of a unit or activity with an applicable opacity standard shall be twelve minutes.

[Rule 62-297.310(4)(a)2., F.A.C.]

D.15. Frequency of Compliance Tests. The following provisions apply only to those emissions units that are subject to an emissions limiting standard for which compliance testing is required.

a. General Compliance Testing.

1. The owner or operator of an emissions unit that is subject to any emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining a renewed operation permit. Emissions units that are required to conduct an annual compliance test may submit the most recent annual compliance test to satisfy the requirements of this provision. In renewing an air operation permit pursuant to Rule 62-210.300(2)(a)3.b., c., or d., F.A.C., the Department shall not require submission of emission compliance test results for any emissions unit that, during the year prior to renewal:

(a) Did not operate; or

(b) In the case of a fuel burning emissions unit, burned liquid fuel for a total of no more than 400 hours.

2. During each federal fiscal year (October 1 - September 30), unless otherwise specified by rule, order, or, the owner or operator of each emissions unit shall have a formal compliance test conducted for:

(a) Visible emissions, if there is an applicable standard;

3. Any combustion turbine that does not operate for more than 400 hours per year shall conduct a visible emissions compliance test once per each five-year period, coinciding with the term of its air operation permit.

4. The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator.

5. An annual compliance test conducted for visible emissions shall not be required for units exempted from permitting at Rule 62-210.300(3)(a), F.A.C., or units permitted under the General Permit provisions at Rule 62-210.300(4), F.A.C.

b. Special Compliance Tests. When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department.

[Rule 62-297.310(7), F.A.C.; and, AO65-242827, Specific Condition #5 (frequency).]

D.16. Visible Emissions Testing - Annual. By these Conditions, annual emissions compliance testing for visible emissions is not required for these emissions units while burning:

a. only gaseous fuels; or

b. gaseous fuels in combination with any amount of liquid fuels for less than 400 hours per year; or

c. only liquid fuels for less than 400 hours per year.
[Rules 62-297.310(7)(a)4. & 8., F.A.C.]

Recordkeeping and Reporting Requirements

{Permitting Note: The reports that are required by the following conditions are to be sent to the Department of Environmental Protection's Northwest District Office, 160 Governmental Center, Pensacola, Florida 322501-5794}

D.17. Malfunction Reporting. In the case of excess emissions resulting from malfunctions, each owner or operator shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department.

[Rule 62-210.700(6), F.A.C.]

D.18. Test Reports.

a. The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test.

b. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed.

[Rule 62-297.310(8), F.A.C.]

Subsection E. This section addresses the following emissions unit(s).

E.U. ID No. Brief Description

-011 Auxiliary Boiler

This is a Kewanee model H3S-400-G steam generator rated at a maximum heat input of 16.74 MMBtu/hour while being fueled with natural gas.

{Permitting note(s): This emissions unit is regulated under 40 CFR 60, Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. However, since it is only permitted to combust natural gas, the standards, the monitoring and the associated reporting requirements contained in Subpart Dc do not apply, with the exception that the reporting requirements pertaining to "start-up", as referenced in 40 CFR 60.7, do apply. This boiler may only operate when Boilers Number 5, Number 6 and Number 7 and Unit 8 are not operating; therefore, there will be no significant increase in emissions for PSD purposes. Stack height = 30 feet, exit diameter = 2.0 feet, exit temperature = 420 °F, actual volumetric flow rate = 4,000 acfm (exit temperature and flow rate estimated by manufacturer service representative). Emissions from this boiler are controlled by good combustion practices.}

The following specific conditions apply to the emissions unit listed above:

Essential Potential to Emit (PTE) Parameters

E.1. Permitted Capacity. The maximum operation heat input rate is as follows:

<u>Unit No.</u>	<u>MMBtu/hr Heat Input</u>	<u>Fuel Type</u>
11	16.74	Natural Gas

[Rules 62-4.160(2), 62-210.200(PTE) and 62-296.406, F.A.C.]

E.2. Emissions Unit Operating Rate Limitation After Testing. See common condition C.11. [Rule 62-297.310(2), F.A.C.]

E.3. Methods of Operation - Fuels. Only natural gas shall be fired in this boiler. [Rules 62-4.160(2) and 62-213.440(1), F.A.C.]

E.4. Hours of Operation. This emissions unit may operate 2,000 hours/year as an auxiliary source of steam, but may only operate when the existing steam generating units (Boilers Number 5, Number 6 and Number 7) and Unit 8 are not operating. The Permittee shall maintain an operation log available for Department inspection certifying the total hours of operation and fuel consumption annually.

[Rules 62-4.160(2) and 62-210.200(PTE), F.A.C.; 1290001-002-AC; and, initial Title V permit application as amended December 24, 1996.]

Emission Limitations and Standards

{Permitting Note: The attached Table 1-1, Summary of Air Pollutant Standards and Terms, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of these Conditions.}

E.5. Visible Emissions. Visible emissions shall not exceed 20 percent opacity, except for one two-minute period per hour during which opacity shall not exceed 40 percent.

[Rule 62-296.406(1), F.A.C.]

E.6. Particulate Matter. Particulate matter emissions shall be controlled by the firing of natural gas.

[Rule 62-296.406(2), F.A.C.; and, BACT determination dated October 8, 1996.]

E.7. Sulfur Dioxide. Sulfur dioxide emissions shall be controlled by the firing of natural gas.

[Rule 62-296.406(3), F.A.C.; and, BACT determination dated October 8, 1996.]

Excess Emissions

E.8. Excess emissions resulting from startup, shutdown or malfunction shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration.

[Rule 62-210.700(1), F.A.C.]

E.9. Excess emissions resulting from startup or shutdown shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized.

[Rule 62-210.700(2), F.A.C.]

Monitoring of Operations

E.10. Determination of Process Variables.

a. Required Equipment. The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.

b. Accuracy of Equipment. Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

[Rule 62-297.310(5), F.A.C.]

E.11. This emissions unit is also subject to the conditions contained in Subsection C, Common Conditions, as specified below.

Test Methods and Procedures

{Permitting Note: The attached Table 2-1, Summary of Compliance Requirements, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of these Conditions.}

E.12. Visible Emissions. See common conditions C.5. and C.6.

E.13. Operating Rate During Testing. See common condition C.11.

E.14. Applicable Test Procedures. See common condition C.13.(a)2.

E.15. Frequency of Compliance Tests. See common condition C.15. except (a)5. & 8.

E.16. Visible Emissions - Annual. By these Conditions, annual emissions compliance testing for visible emissions is not required for this emissions unit.

[Rules 62-297.310(7)(a)4., F.A.C.]

Recordkeeping and Reporting Requirements

E.17. The permittee shall record and maintain records of the amount of natural gas combusted during each day the auxiliary boiler is operated.

[40 CFR 60.48c(g)]

E.18. See common conditions **C.18.** and **C.20.a. & b.**

Subsection F. This section addresses the following emission unit(s).

<u>E.U. ID No.</u>	<u>Brief Description</u>
-012	Combustion Turbine Unit 8 (Phase II Acid Rain Unit)

(Suggested Conditions to be provided at a later date.)

Appendix E-1, List of Exempt Emissions Units and/or Activities.

City of Tallahassee, Electric Utilities
Sam O. Purdom Generating Station

PROPOSED Permit No.: 1290001-001-AV
Facility ID No.: 1290001

The facilities, emissions units, or pollutant-emitting activities listed in Rule 62-210.300(3)(a), F.A.C., Full Exemptions, are exempt from the permitting requirements of Chapters 62-210 and 62-4, F.A.C.; provided, however, that exempt emissions units shall be subject to any applicable emission limiting standards and the emissions from exempt emissions units or activities shall be considered in determining whether a facility containing such emissions units or activities would be subject to any applicable requirements. Emissions units and pollutant-emitting activities exempt from permitting under Rule 62-210.300(3)(a), F.A.C., are also exempt from the permitting requirements of Chapter 62-213, F.A.C., provided such emissions units and activities also meet the exemption criteria of Rule 62-213.430(6)(b), F.A.C. The below listed emissions units and/or activities are hereby exempt pursuant to Rule 62-213.430(6), F.A.C.

Brief Description of Emissions Units and/or Activities:

Exempt Emissions Related to Combustion Turbine No. 1

1. Oil Vapor Extractor
2. Fuel Oil Piping
3. Lube Oil Tank

Exempt Emissions Related to Combustion Turbine No. 2

4. Oil Vapor Extractor
5. Fuel Oil Piping
6. Lube Oil Tank

Exempt Emissions Related to Steam Generator No. 5

7. Fuel Oil Piping
8. Hydrogen Gas Vents
9. Deareator Tank Vents
10. Oil Vapor Extractors
11. Lube Oil Tank (storage)
12. Lube/Fuel Oil Drip Pans
13. Noncondensable Gas Extractor
14. On-site Generated Non-hazardous Boiler Chemical Cleaning Wastes

Exempt Emissions Related to Steam Generator No. 6

15. Fuel Oil Piping
16. Hydrogen Gas Vents
17. Deareator Tank Vents
18. Oil Vapor Extractors
19. Lube Oil Tank (storage)
20. Lube/Fuel Oil Drip Pans

21. Noncondensable Gas Extractor
22. On-site Generated Non-hazardous Boiler Chemical Cleaning Wastes

Exempt Emissions Related to Steam Generator No. 7

23. Fuel Oil Piping
24. Hydrogen Gas Vents
25. Deareator Tank Vents
26. Oil Vapor Extractors
27. Lube Oil Tank (storage)
28. Lube/Fuel Oil Drip Pans
29. Noncondensable Gas Extractor
30. On-site Generated Non-hazardous Boiler Chemical Cleaning Wastes

Fuel Farm

31. Fuel Oil Tank No. 1
32. Fuel Oil Tank No. 2
33. Fuel Oil Tank No. 3
34. Waste Oil Tank
35. Distillate Oil Tank
36. Gasoline Tank
37. Diesel Oil Tank
38. (New) Diesel Oil Tank Associated With the Hydrant Main

Fuel Dispensing Operations

39. Truck Loading/Unloading (for items 29-33)
40. Truck Loading/Unloading for Distillate Oil Tank
41. Truck Loading/Unloading for Gasoline Tank
42. Fuel Dispensing Operations for Diesel Oil Tank
43. Barge Unloading Station
44. Truck Loading/Unloading Rack 1
45. Truck Loading/Unloading Rack 2

Fugitive VOC Emissions

46. (1-15) Parts Washers - Nonhalogenated Solvents

Space Heaters

47. (1-7) Space Heaters

Fugitive PM₁₀ Emissions

48. Paved Roads
49. Unpaved Roads
50. Heavy Construction Activities
51. Aggregate Handling & Storage

Appendix E-1, Continued.

Laboratory

- 52. Laboratory Equipment
- 53. Chemical Usage
- 54. Vacuum Pumps
- 55. Laboratory Fume Hoods
- 56. Central Vacuum System

Maintenance Activities

- 57. Welding - Exempt per Rule 62-210.300(3)(a)16., F.A.C.

Plant Operations

- 58. Lube Oil Storage Tanks
- 59. Propane Storage Tanks

Appendix U-1, List of Unregulated Emissions Units and/or Activities.

City of Tallahassee, Electric Utilities
Sam O. Purdom Generating Station

PROPOSED Permit No.: 1290001-001-AV
Facility ID No.: 1290001

Unregulated Emissions Units and/or Activities. An emissions unit which emits no “emissions-limited pollutant” and which is subject to no unit-specific work practice standard, though it may be subject to regulations applied on a facility-wide basis (e.g., unconfined emissions, odor, general opacity) or to regulations that require only that it be able to prove exemption from unit-specific emissions or work practice standards.

E.U. ID No. **Brief Description of Emissions Units and/or Activity**

-010 Fugitive VOC Sources - Painting Operations
-xxx General purpose engines
-yyy Emergency generators

-010 Fugitive VOC Emissions. Fugitive VOC emissions are generated from the painting operations associated with normal plant maintenance. SCC: 4-90-999-98, Miscellaneous Volatile Organic Compound Evaporation.

-xxx General purpose internal combustion engines.
Located for use at this source are(2) Welding Generators.

-yyy Emergency generators.
Located for use at this source are (3) Emergency Generators.

Referenced Attachments (see Title V Permit)

Appendix A-1, Abbreviations, Definitions, Citations, and Identification Numbers

Appendix SS-1, Stack Sampling Facilities (version dated 3/25/96)

Appendix TV-1, Title V Conditions (version dated 2/5/97)

ASP Number 97-B-01

Table 1-1, Summary of Air Pollutant Standards and Terms

Table 2-1, Summary of Compliance Requirements

XIII. Stormwater Discharge

A. The existing Purdom Generating Station surface water management system is permitted to discharge storm water under the terms and conditions imposed by EPA's storm water general permit issued for use in the state of Florida. The facility's permit number is FLR00A317. The City of Tallahassee is required to continue to update the Purdom Station's Storm Water Pollution Prevention Plan (SWPPP) annually, as required by the general permit; and to implement the annual revisions to the SWPPP.

B. New construction on the Purdom site must meet the requirements of Chapter 62-25 of the Florida Administrative Code, as well as the design requirements presented in the Site Certification Application (SCA). The new stormwater facilities associated with Purdom Unit 8 will not become operational until an engineer practicing in the State of Florida in compliance with Section 471.003(2)(d) Florida Statutes, and with the appropriate experience in surface water design, certifies that these facilities have been constructed in accordance with the design as approved by the Florida Department of Environmental Protection (FDEP).

C. This certification is predicated on the City of Tallahassee's submitted information to FDEP which reasonably demonstrates that adverse off-site water resource related impacts will not be caused by the authorized activities.

D. FDEP representatives shall be allowed reasonable escorted access to the power plant site to inspect and observe any activities associated with the Purdom Unit 8 Project construction and/or the operation and/or maintenance of the surface water management system in order to determine compliance with the conditions of this certification. The City of Tallahassee shall not refuse immediate entry or access, upon reasonable notice, to any FDEP representative who requests entry for the above noted inspection and presents appropriate credentials.

E. The City of Tallahassee shall hold and save FDEP harmless from any and all damages, claims, or liabilities which may arise by reason of the construction, operation, maintenance and/or use of any facility authorized by this certification, to the extent allowed under Florida law.

XIV. Domestic Wastewater

XV. Drinking Water Facilities

- A. Use of Existing Facilities**
- B. Prior Approval**
- C. Construction**
- D. Operation**

XVI. NPDES

This Condition of Certification is issued under the provisions of Chapter 403, Florida Statutes, and applicable rules of the Florida Administrative Code and constitutes authorization to discharge to waters of the state under the National Pollutant Discharge Elimination System. The City of Tallahassee is hereby authorized to operate the facilities shown in the Purdom Unit 8 Site

Certification Application and other documents on file with the Department and made a part hereof and specifically described as follows:

OPERATION: Of an industrial wastewater treatment and disposal system to serve the referenced facility which includes a steam electric power generation plant and combustion turbine units. The facility presently includes three fossil-fueled steam electric units, Units 5 and 6 each rated at 22 MW (nominal) and Unit 7 rated at 44 MW (nominal), and two combustion turbines, Units GT-1 and GT-2, each rated at 12.3 MW (nominal). After permanent shutdown of Units 5 and 6, Unit 8, a 250 MW (nominal) combined cycle unit will become operational. The existing facility discharge consists of once-through non-contact cooling water, low volume wastes, and chemical and non-chemical metal cleaning wastes. Upon Commercial Operation of Unit 8, the discharge will only consist of once-through non-contact cooling water from Unit 7 and GT-1 and GT-2. For the purpose of Condition XVI, "Commercial Operation" means that Unit 8 achieves the following:

- (1) Successful completion of performance tests for electric power output and heat rate,
- (2) The Unit produces at least ninety-five percent (95%) of the Guaranteed Net Power Output,
- (3) The Unit operates at no more than one hundred five percent (105%) of the Guaranteed Heat Rate,
- (4) The Unit meets all applicable air emission conditions contained in the Permits while firing the Guaranteed Fuel, and
- (5) The zero discharge wastewater treatment system is operating in a reliable manner.

TREATMENT: Existing treatment includes lime treatment consisting of mixing, flocculation, and sedimentation of low volume wastewaters and metal cleaning wastewaters, air flotation and gravity separation for oily wastewaters, and pH adjustment for low volume wastewaters and metal cleaning wastewaters. Non-contact cooling waters require only dechlorination, if chlorination is practiced. Upon Commercial Operation of Unit 8, only non-contact cooling water from Unit 7 will be discharged; the existing treatment system will be abandoned.

DISPOSAL: Effluent is presently discharged at outfall D001 (formerly outfall serial number OSN 001, D002 (formerly outfall serial number OSN 002), D003 (formerly outfall serial number OSN 005), and D004 (formerly outfall serial number OSN 006) to the St. Marks River, a Class III water. Upon Commercial Operation of Unit 8, the only remaining discharge will be to Outfall D002.

IN ACCORDANCE WITH: The limitations, monitoring requirements, and other conditions set forth in Parts I through V below.

Part I. Effluent Limitations and Monitoring Requirements

A. Surface Water Discharges

1. During the period beginning on the effective date of this certification, and lasting until Unit 8 achieves Commercial Operation, the City of Tallahassee is authorized to discharge from

outfall serial number 001: once-through cooling water and auxiliary equipment cooling water from Unit 5 to the St. Marks River.

a. Such discharges shall be limited and monitored as specified below:

Parameter	Discharge Limitations			Monitoring Requirements	
	Daily Avg.	Daily Max.	Instantaneous Max	Measurement Frequency	Sample Type
Flow, MGD	Report	Report	N/A	Daily	Hourly Log
Discharge Temperature, °F	90.0	95.0	N/A	Continuous ^[1]	Recorder
Total Residual Chlorine (TRC), mg/l	N/A	N/A	0.01	1/Discharge	Multiple Chlorine Grabs ^[2]
Total Time of Chlorine Addition	N/A	120	N/A	Daily	Log

b. Limitations and monitoring requirements for TRC are not applicable for any period in which chlorine is not added to Unit 5.

c. Auxiliary equipment cooling water from Unit 5 may be discharged without limitations or monitoring requirements.

d. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations: flow at the plant intake; temperature and TRC at the throat of the discharge structure from Unit 5; chlorine addition at the point of addition.

[1] Readings shall be taken 2 per each operating shift from continuous temperature recorders and averaged for daily average.

[2] Multiple grabs shall consist of grab samples collected at approximately the beginning of the period of TRC discharge and once per 15 minutes thereafter until the end of the period of TRC discharge.

2. During the period beginning on the effective date of this certification, and lasting until Unit 8 achieves Commercial Operation, the City of Tallahassee is authorized to discharge from outfall serial number 002: once-through cooling water and auxiliary equipment cooling water from Units 6 and 7, and cooling water from Combustion Turbines 1 and 2 to the St. Marks River.

a. Such discharges shall be limited and monitored as specified below:

Parameter	Discharge Limitations			Monitoring Requirements	
	Daily Avg.	Daily Max.	Instantaneous Max	Measurement Frequency	Sample Type
Flow, MGD	Report	Report	N/A	Daily	Hourly Log
Discharge Temperature, °F	90.0	95.0	N/A	Continuous ^[1]	Recorder
Total Residual Chlorine (TRC), mg/l	N/A	N/A	0.01	1/Discharge	Multiple Chlorine Grabs ^[2]
Total Time of Chlorine Addition	N/A	120	N/A	Daily	Log

b. Limitations and monitoring requirements for TRC are not applicable for any period in which chlorine is not added to either Unit 6 or 7.

- c. Auxiliary equipment cooling water from Units 6 and 7 may be discharged without limitations or monitoring requirements.
- d. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations: flow at the plant intake; temperature and TRC at the center of the discharge canal for Units 6 and 7, opposite the gas turbine intake structure; chlorine addition at the point of addition.

[1] Readings shall be taken 2 per each operating shift from continuous temperature recorders and averaged for daily average.

[2] Multiple grabs shall consist of grab samples collected at approximately the beginning of the period of TRC discharge and once per 15 minutes thereafter until the end of the period of TRC discharge.

3. During the period beginning on the effective date of this certification, and lasting until Unit 8 achieves Commercial Operation, the City of Tallahassee is authorized to discharge from outfall serial number 005: chemical and non-chemical metal cleaning wastes to Pond No. 1 to the St. Marks River.

a. Such discharges shall be limited and monitored as specified below:

Parameter	Discharge Limitations		Monitoring Requirements	
	Daily Average	Daily Maximum	Measurement Frequency	Sample Type
Flow, MGD	Report	Report	Continuous ^[1]	Flow Indicator
Total Suspended Solids, mg/l	30.0	100.0	1/Discharge	Grab
Oil & Grease mg/l	N/A	5.0	1/Discharge	Grab
Copper (Total), mg/l	N/A	0.03	1/Discharge	Grab
Iron (Total) mg/l	1.0	1.0	1/Discharge	Grab

- b. The pH shall not be less than 6.0 standard units nor greater than 8.5 standard units and shall be monitored 1/month by a grab sample.
- c. There shall be no discharge of floating solids or visible foam in other than trace amounts.
- d. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: in the discharge line from Ponds 1 and 2 prior to actual discharge to the receiving waters.

[1] Flow shall be measured continuously throughout the period of discharge.

4. During the period beginning on the effective date of this certification, and lasting until Unit 8 achieves Commercial Operation, the City of Tallahassee is authorized to discharge from outfall serial number 006: low volume wastes including boiler blowdown, demineralizer regeneration wastewater, and laboratory sampling wastewater to Pond No. 2 to the St. Marks River.

a. Such discharges shall be limited and monitored as specified below:

Parameter	Discharge Limitations		Monitoring Requirements	
	Daily Average	Daily Maximum	Measurement Frequency	Sample Type
Flow, MGD	Report	Report	Daily	Flow Indicator
Total Suspended Solids, mg/l	30.0	100.0	1/Discharge	Grab
Oil & Grease mg/l	N/A	5.0	1/Discharge	Grab

b. The pH shall not be less than 6.0 standard units nor greater than 8.5 standard units and shall be monitored 1/month by a grab sample.

c. The City of Tallahassee is authorized to discharge FDEP-approved boiler chemicals in boiler blowdown, boiler lay-up water or other similar “cold discharges” without limitation or monitoring requirements.

d. There shall be no discharge of floating solids or visible foam in other than trace amounts.

e. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations: In the discharge line from ponds 1 and 2 prior to actual discharge to the receiving waters.

5. During the period beginning when Unit 8 achieves Commercial Operation, and continuing indefinitely thereafter, the City of Tallahassee is authorized to discharge from outfall serial number 002: once-through cooling water and auxiliary equipment cooling water from Unit 7, and cooling water from Combustion Turbines 1 and 2 to the St. Marks River.

a. Such discharges shall be limited and monitored as specified below:

Parameter	Discharge Limitations			Monitoring Requirements	
	Daily Avg.	Daily Max.	Instantaneous Max	Measurement Frequency	Sample Type
Flow, MGD	Report	Report	N/A	Daily	Hourly Log
Discharge Temperature, °F	90.0	95.0	N/A	Continuous ^[1]	Recorder
Total Residual Chlorine (TRC), mg/l	N/A	N/A	0.01	1/Discharge	Multiple Chlorine Grabs ^[2]
Total Time of Chlorine Addition	N/A	120	N/A	Daily	Log

b. Limitations and monitoring requirements for TRC are not applicable for any period in which chlorine is not added to Unit 7.

c. Auxiliary equipment cooling water from Unit 7 may be discharged without limitations or monitoring requirements.

d. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations: Flow at the plant intake; temperature and TRC at the center of the discharge canal for Unit 7, opposite the gas turbine intake structure; chlorine addition at the point of addition.

[1] Readings shall be taken 2 per each operating shift from continuous temperature recorders and averaged for daily average.

[2] Multiple grabs shall consist of grab samples collected at approximately the beginning of the period of TRC discharge and once per 15 minutes thereafter until the end of the period of TRC discharge.

B. Other Limitations and Monitoring Requirements

1. The approved analytical methods and corresponding Department established MDL (method detection limits) and PQL (practical quantification limit) are listed for the following parameters:

Parameter	EPA Method	MDL (µg/l)	PDL (µg/l)
Total Suspended Solids	160.2	4000.0	4000.0
Oil & Grease	413.1	5000.0	5000.0
Total Recoverable Copper	220.2	1.0	5.0
Total Recoverable Iron	236.2/200.7/236.1	2.0/10.0/30.0	10.0/50.0/100.0
Temperature	170.1	0.10 C	0.10 C
Total Residual Chlorine	330.1	10.0	10.0
pH	150.1	0.01 s.u.	0.01 s.u.

The MDLs and PQLs listed above shall constitute the minimum reporting levels for the life of the certification. The Department shall not accept results for which the laboratory's MDLs or PQLs are greater than those listed above. Unless otherwise specified, sample results shall be reported as follows:

- Results greater than or equal to the PQL shall be reported as the measured quantity.
- Results less than the PQL and greater than or equal to the MDL shall be reported as the PQL followed by the lab code "m", and shall be deemed equal to the MDL when necessary to calculate an average for that parameter.
- Results less than the MDL shall be reported as the MDL followed by the lab code "u". A value of one half the MDL or half the effluent limit, whichever is lower, shall be used for that sample when necessary to calculate an average for that parameter. Values less than the MDL are considered to demonstrate compliance with an effluent limit or monitoring requirement. [62-4.246, 6-13-96]

2. Monitoring results obtained for each calendar month shall be summarized for that month and reported on a Discharge Monitoring Report (DMR), Form 62-620.910(10), postmarked no later than the 28th day of the month following the completed calendar month. For example, data for January shall be submitted by February 28. Signed copies of the DMR shall be submitted to the address specified below:

Florida Department of Environmental Protection
 Wastewater Facilities Regulation Section, Mail Station 3550
 Twin Towers Office Building
 2600 Blair Stone Road
 Tallahassee, Florida 32399-2400

If no discharge occurs during the reporting period, sampling requirements of this certification do not apply. The statement "No Discharge" shall be written on the DMR form. If, during the term period of this certification, the facility ceases to discharge, the Department shall be notified immediately upon cessation of discharge. Such notification shall be in writing. Additionally, the City of Tallahassee shall notify the Department within 30 days, in writing, of the permanent shutdown of Units 5 and 6, and of the commencement of Commercial Operation of Unit 8.

3. Unless specified otherwise in this certification, all other reports and notifications required by these Conditions, including twenty-four hour notifications, shall be submitted to or reported to, as appropriate, the Department's Northwest District Office at the address specified below:

Florida Department of Environmental Protection
Industrial Wastewater Section
160 Government Center
Suite 308
Pensacola, Florida 32501-5794
Phone Number (850)-444-8300

4. The City of Tallahassee shall report all visible discharges of floating materials, such as ash or an oil sheen, when submitting DMRs.

5. There shall be no discharge of polychlorinated biphenyl compounds (PCBs) such as those commonly used for transformer fluid.

6. The City of Tallahassee shall provide safe access points for obtaining representative samples which are required by this certification.

7. The City of Tallahassee shall ensure that all laboratory analytical data submitted to the Department is from a laboratory which has a currently valid and Department-approved Comprehensive Quality Assurance Plan (CompQAP) [or a CompQAP pending approval] for all parameters being reported as required by 62-160, Florida Administrative Code.

8. Discharge of hydrazine in boiler blowdown is authorized without limitation or monitoring requirements.

9. The City of Tallahassee is authorized to use St. Marks River water for fire protection in case of emergency and to perform normal and reasonable testing of the fire protection system. The provisions of Part I, Section A.1 and A.2 of this condition of certification do not apply under these emergency or testing conditions.

C. Reopener Clause

1. A. This certification shall be modified to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(23)(C) and (D), 304(b)(2) and 307(a)(2) of the Clean Water Act (the Act), as amended, if the effluent standard or limitation so issued or approved:

1. Contains different conditions or is otherwise more stringent than any condition in the permit/or;

2. Controls any pollutant not addressed in the certification. The certification, as modified under this paragraph shall contain any other requirements of the Act then applicable.

B. The certification may be reopened to adjust effluent limitations or monitoring requirements should future wasteload allocation determinations, water quality studies, DEP approved changes in water quality standards, or other information show a need for a different limitation or monitoring requirement .

D. Stormwater from Diked Petroleum Storage or Handling Area

The City of Tallahassee is authorized to discharge stormwater from diked petroleum storage or handling areas, provided the following conditions are met:

1. The facility shall have a valid SPCC Plan pursuant to 40 CFR 112.
2. In draining the diked area, a portable oil skimmer or similar device or absorbent material shall be used to remove oil and grease (as indicated by the presence of a sheen) immediately prior to draining.
3. Monitoring records shall be maintained in the form of a log and shall contain the following information, as a minimum:
 - a. Date and time of discharge,
 - b. Estimated volume of discharge,
 - c. Initials of person making visual inspection and authorizing discharge, and
 - d. Observed conditions of storm water discharged.
4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of a visible oil sheen at any time.

Part II. Operation and Maintenance Requirements

A. Operation of Treatment and Disposal Facilities

1. The City of Tallahassee shall ensure that the operation of this facility is as described in the application and supporting documents
2. The operation of the pollution control facilities described in this certification shall be under the supervision of a person who is qualified by formal training and/or practical experience in the field of water pollution control appropriate for those facilities.

B. Record-Keeping Requirements

The City of Tallahassee shall maintain the following records on the site of the permitted facility and make them available for inspection:

1. Records of all compliance monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, including, if applicable, a copy of the laboratory certification showing the certification number of the laboratory, for at least three years from the date the sample or measurement was taken;

2. Copies of all reports, other than those required in item 1. above, required by the permit for at least three years from the date the report was prepared, unless otherwise specified by Department rule;
3. Records of all data, including reports and documents used to complete the application for this certification at least three years from the date the application was filed, unless otherwise specified by Department rule;
4. A Copy of the Site Certification;
5. A copy of any required record drawings;
6. Copies of the logs and schedules showing plant operations and equipment maintenance for three years from the date on the logs or schedule.

Part III. Compliance Schedule

The City of Tallahassee shall achieve compliance on start of discharge.

Part IV. Other Specific Conditions

A. Specific Conditions Applicable to All Permits

1. Drawings, plans, documents or specifications submitted by the City of Tallahassee, not attached hereto, but retained on file with the Department, are made a part hereof.
2. If significant historical or archaeological artifacts are discovered at any time within the project site, the City of Tallahassee shall immediately notify the Department at the address shown in I B 3 above and the Bureau of Historic Preservation, Division of Archives, History and Records Management, R.A. Gray Building, Tallahassee, Florida, 32301.
3. Where required by Chapter 471 (P.E.) or Chapter 492 (P.G.) Florida Statutes, applicable portions of reports to be submitted under this certification shall be signed and sealed by the professional(s) who prepared them.
4. This certification satisfies industrial wastewater program permitting requirements only and does not authorize operation of this facility prior to obtaining any other permits required by federal agencies.

B. Duty to Reapply

This condition is not applicable under Site Certification.

C. Specific Conditions Related to Best Management Practices

The City of Tallahassee shall comply with the Best Management Practices portion of the Purdom Station Storm Water Pollution Prevention Plan (SWPPP).

D. Specific Conditions Relating to Existing Manufacturing, Commercial, Mining, and Silviculture Wastewater Facilities or Activities

1. Existing manufacturing, commercial, mining, and silvicultural wastewater facilities or activities that discharge into surface waters shall notify the Department as soon as they know or have reason to believe:

[62-620.624(1)]

(a) That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the certification, if that discharge will exceed the highest of the following levels:

- (1) One hundred micrograms per liter
- (2) Two hundred micrograms per liter for acrolein and acrylonitrile; five hundred micrograms per liter for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter for antimony, or
- (3) Five times the maximum concentration value reported for that pollutant In the permit application.

(b) That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following levels:

- (1) Five hundred micrograms per liter;
- (2) One milligram per liter for antimony; or
- (3) Ten times the maximum concentration value reported for that pollutant in the permit application.

Part V. General Conditions

Within this part, the term "permit" refers to this Certification; the term "permittee" refers to the City of Tallahassee; the term "Department" refers to the Florida Department of Environmental Protection.

(1) The terms, conditions, requirements, limitations and restrictions set forth in these Conditions are binding and enforceable pursuant to chapter 403, Florida Statutes. Any permit noncompliance constitutes a violation of chapter 403, Florida Statutes, and is grounds for enforcement action, permit termination, permit revocation and reissuance, or permit revision.

(2) These Conditions are valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of these Conditions constitutes grounds for revocation and enforcement action by the Department.

(3) As provided in subsection 403.087(6), F.S., the issuance of these Conditions does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor authorize any infringement of federal, state, or local laws or regulations. These Conditions is not a waiver of or approval of any other Department permit or authorization that may be required for other aspects of the total project which are not addressed in these Conditions.

(4) These Conditions conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

(5) These Conditions does not relieve the permittee from liability and penalties for harm or injury to human health or welfare, animal or plant life, or property caused by the construction or operation of this permitted source; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department. The permittee shall take all reasonable steps to minimize or prevent any discharge, reuse of reclaimed water, or residuals use or disposal in violation of these Conditions which has a reasonable likelihood of adversely affecting human health or the environment. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of these Conditions.

(6) If the permittee wishes to continue an activity regulated by these Conditions after its expiration date, the permittee shall apply for and obtain a new permit.

(7) The permittee shall at all times properly operate and maintain the facility and systems of treatment and control, and related appurtenances, that are installed and used by the permittee to achieve compliance with the conditions of these Conditions. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to maintain or achieve compliance with the conditions of the permit.

(8) These Conditions may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit revision, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

(9) The permittee, by accepting these Conditions, specifically agrees to allow authorized Department personnel, including an authorized representative of the Department and authorized EPA personnel, when applicable, upon presentation of credentials or other documents as may be required by law, and at reasonable times, depending upon the nature of the concern being investigated, to

(a) Enter upon the permittee's premises where a regulated facility, system, or activity is located or conducted, or where records shall be kept under the conditions of these Conditions;

(b) Have access to and copy any records that shall be kept under the conditions of these Conditions;

(c) Inspect the facilities, equipment, practices, or operations regulated or required under these Conditions; and

(d) Sample or monitor any substances or parameters at any location necessary to assure compliance with these Conditions or Department rules.

(10) In accepting these Conditions, the permittee understands and agrees that all records, notes, monitoring data, and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except as such use is proscribed by section 403.111, Florida Statutes, or Rule 62-620.302, Florida Administrative Code. Such evidence shall only be used to

the extent that it is consistent with the Florida Rules of Civil Procedure and applicable evidentiary rules.

(11) When requested by the Department, the permittee shall within a reasonable time provide any information required by law which is needed to determine whether there is cause for revising, revoking and reissuing, or terminating these Conditions, or to determine compliance with the permit. The permittee shall also provide to the Department upon request copies of records required by these Conditions to be kept. If the permittee becomes aware of relevant facts that were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be promptly submitted or corrections promptly reported to the Department.

(12) Unless specifically stated otherwise in Department rules, the permittee, in accepting these Conditions, agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance; provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules. A reasonable time for compliance with a new or amended surface water quality standard, other than those standards addressed in Rule 62-302.500, F.A.C., shall include a reasonable time to obtain or be denied a mixing zone for the new or amended standard.

(13) The permittee, in accepting these Conditions, agrees to pay the applicable regulatory program and surveillance fee in accordance with Rule 62-4.052, F.A.C.

(14) These Conditions is transferable only upon Department approval in accordance with Rule 62-620.340, F.A.C. The permittee shall be liable for any noncompliance of the permitted activity until the transfer is approved by the Department.

(15) The permittee shall give the Department written notice at least 60 days before inactivation or abandonment of a wastewater facility and shall specify what steps will be taken to safeguard public health and safety during and following inactivation or abandonment.

(16) The permittee shall apply for a revision to the Department permit in accordance with Rules 62-620.300 and the Department of Environmental Protection Guide to Wastewater Permitting at least 90 days before construction of any planned substantial modifications to the permitted facility is to commence or with Rule 62-620.325(2) for minor modifications to the permitted facility. A revised permit shall be obtained before construction begins except as provided in Rule 62-620.300, F.A.C.

(17) The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. The permittee shall be responsible for any and all damages which may result from the changes and may be subject to enforcement action by the Department for penalties or revocation of these Conditions. The notice shall include the following information:

- (a) A description of the anticipated noncompliance;
- (b) The period of the anticipated noncompliance, including dates and times; and
- (c) Steps being taken to prevent future occurrence of the noncompliance.

(18) Sampling and monitoring data shall be collected and analyzed in accordance with Rule 62-4.246, chapters 62-160 and 62-601, F.A.C., and 40 CFR 136, as appropriate.

(a) Monitoring results shall be reported at the intervals specified elsewhere in these Conditions and shall be reported on a Discharge Monitoring Report (DMR), DEP Form 62-620.910(10).

(b) If the permittee monitors any contaminant more frequently than required by the permit, using Department approved test procedures, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR.

(c) Calculations for all limitations which require averaging of measurements shall use an arithmetic mean unless otherwise specified in these Conditions.

(d) Any laboratory test required by these Conditions for domestic wastewater facilities shall be performed by a laboratory that has been certified by the Department of Health and Rehabilitative Services (DHRS) under chapter 10D-41, F.A.C., to perform the test. In domestic wastewater facilities, on-site tests for dissolved oxygen, pH, and total chlorine residual shall be performed by a laboratory certified to test for those parameters or under the direction of an operator certified under chapter 61E12-41, F.A.C.

(e) Under chapter 62-160, F.A.C., sample collection shall be performed by following the protocols outlined in "DER Standard Operating Procedures for Laboratory Operations and Sample Collection Activities" (DEP-QA-001/92). Alternatively, sample collection may be performed by an organization who has an approved Comprehensive Quality Assurance Plan (CompQAP) on file with the Department. This CompQAP shall be approved for collection of samples from the required matrices and for the required tests.

(19) Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule detailed elsewhere in these Conditions shall be submitted no later than 14 days following each schedule date.

(20) The permittee shall report to the Department any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within five days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance including exact dates and time, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

(a) The following shall be included as information which must be reported within 24 hours under this condition:

1. Any unanticipated bypass which causes any reclaimed water or the effluent to exceed any permit limitation or results in an unpermitted discharge,
2. Any upset which causes any reclaimed water or the effluent to exceed any limitation in the permit,

3. Violation of a maximum daily discharge limitation for any of the pollutants specifically listed in the permit for such notice, and

4. Any unauthorized discharge to surface or ground waters.

(b) If the oral report has been received within 24 hours, the noncompliance has been corrected, and the noncompliance did not endanger health or the environment, the Department shall waive the written report.

(21) The permittee shall report all instances of noncompliance not reported under conditions (18) or (19) of these Conditions at the time monitoring reports are submitted. This report shall contain the same information required by condition (20) of these Conditions.

(22) Bypass Provisions.

(a) Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless the permittee affirmatively demonstrates that:

1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and

2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

3. The permittee submitted notices as required under condition (22)(b) of these Conditions.

(b) If the permittee knows in advance of the need for a bypass, it shall submit prior notice to the Department, if possible at least 10 days before the date of the bypass. The permittee shall submit notice of an unanticipated bypass within 24 hours of learning about the bypass as required in condition (20) of these Conditions. A notice shall include a description of the bypass and its cause; the period of the bypass, including exact dates and times; if the bypass has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent recurrence of the bypass.

(c) The Department shall approve an anticipated bypass, after considering its adverse effect, if the permittee demonstrates that it will meet the three conditions listed in condition (22)(a) 1. through 3. of these Conditions.

(d) A permittee may allow any bypass to occur which does not cause reclaimed water or effluent limitations to be exceeded if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provision of condition (22)(a) through (c) of these Conditions.

(23) Upset Provisions.

(a) A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An upset occurred and that the permittee can identify the cause(s) of the upset;
2. The permitted facility was at the time being properly operated;
3. The permittee submitted notice of the upset as required in condition (20) of these Conditions; and
4. The permittee complied with any remedial measures required under condition (5) of these Conditions.

(b) In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

(c) Before an enforcement proceeding is instituted, no representation made during the Department review of a claim that noncompliance was caused by an upset is final agency action subject to judicial review.

XVII. Groundwater (if not applicable)

XVIII. Toxic, Deleterious or Hazardous Materials

XIX. By-product and Solid Waste Storage and Disposal

A. Solid Waste General

B. By-product and Solid Waste Site Specific Standards

XX. Federal Annual Operating Permits and Fees (if necessary)

XXI. Construction of Linear Facilities

XXII. Northwest Florida Water Management District

A. Applicable Terms and Standard Conditions

1. This certification is issued based on information provided by the City of Tallahassee demonstrating that the use of water is reasonable and beneficial as defined by Section 373.019(4), Florida Statutes (F.S.), consistent with the public interest, and will not interfere with any legal use of water existing on the effective date of the Site Certification Application (SCA). The Northwest Florida Water Management District (the District) may initiate action for suspension or revocation of the certification, as provided in Section 403.512 Florida Statutes for any material false statement in the Site Certification Application (SCA), or for failure to comply with these Conditions of Certification.

2. The City of Tallahassee has obtained, or will obtain all other necessary permits to construct, operate, and certify withdrawal facilities and the operation of the water system.

3. The City of Tallahassee will continue ownership, lease, or other present control of property rights in underlying, overlying, or adjacent lands. This portion of the certification may be assigned to a subsequent owner as provided by Chapter 40A-2.351, Florida Administrative Code (F.A.C.), and the acceptance by the transferee of all terms and conditions of this portion of the certification.

4. "Commercial Operation" for the purpose of Condition XXI, means that Unit 8 achieves the following:

- (a) Successful completion of performance tests for electric power output and heat rate,
- (b) The Unit produces at least ninety-five percent (95%) of the Guaranteed Net Power Output,
- (c) The Unit operates at no more than one hundred five percent (105%) of the Guaranteed Heat Rate,
- (d) The Unit meets all applicable air emission conditions contained in the Permits while firing the Guaranteed Fuel, and
- (e) The zero discharge wastewater treatment system is operating in a reliable manner.

5. Beginning with the effective date of this permit and continuing until Units 5 and 6 are permanently shut down, withdrawals of individual facilities and combined withdrawals will not exceed the maximum flows as shown below:

Withdrawal Point		Average Daily Flow (gallons)	Maximum Daily Flow (gallons)	Average Monthly Flow (gallons)	Maximum Monthly Flow (gallons)
#	Description				
SOP 6	Well	40,650	260,000	1,219,500	7,800,000
SOP 7	Well	40,650	260,000	1,219,500	7,800,000
SOP 8	Well	40,650	260,000	1,219,500	7,800,000
SOP 9	Well	40,650	260,000	1,219,500	7,800,000
Total All Wells		162,600	432,000	4,878,000	12,960,000
SW 4	Unit 4 C.W.	1,400,000	7,200,000	42,000,000	216,000,000
SW 5	Unit 5 C.W.	19,879,315	34,560,000	596,379,452	1,036,800,000
SW 6	Unit 6 C.W.	17,224,932	34,560,000	516,747,945	1,036,800,000
SW 7	Unit 7 C.W.	58,426,751	60,624,000	1,752,802,521	1,818,720,000
SW GT	Gas Turbines	300,000	2,937,600	9,000,000	88,128,000
SW 8	Unit 8 C.W.	0	0	0	0
Total All Surface Water		97,230,997	139,881,600	2,916,929,918	4,196,448,000
Total Withdrawal of Water		97,393,597	140,313,600	2,921,807,918	4,209,408,000

Note: C.W. is Circulating (Condenser Cooling) Water recirculated to the river, except for Unit 8. The average flows above are based on information provided by the City of Tallahassee as based on the best information available at the time, but do not constitute limits.

6. Beginning when Purdom Units 5 and 6 are permanently shut down, and continuing until Purdom Unit 8 achieves Commercial Operation, withdrawals of individual facilities and combined withdrawals will not exceed the maximum flows as shown below:

Withdrawal Point		Average Daily Flow (gallons)	Maximum Daily Flow (gallons)	Average Monthly Flow (gallons)	Maximum Monthly Flow (gallons)
#	Description				
SOP 6	Well	40,650	260,000	1,219,500	7,800,000
SOP 7	Well	40,650	260,000	1,219,500	7,800,000
SOP 8	Well	40,650	260,000	1,219,500	7,800,000
SOP 9	Well	40,650	260,000	1,219,500	7,800,000
Total All Wells		162,600	432,000	4,878,000	12,960,000
SW 4	Unit 4 C.W.	1,400,000	7,200,000	42,000,000	216,000,000
SW 5	Unit 5 C.W.	0	0	0	0
SW 6	Unit 6 C.W.	0	0	0	0
SW 7	Unit 7 C.W.	58,426,751	60,624,000	1,752,802,521	1,818,720,000
SW GT	Gas Turbines	300,000	2,937,600	9,000,000	88,128,000
SW 8	Unit 8 C.W.	959,040	1,347,840	28,771,200	36,806,400
Total All Surface Water		61,085,791	72,109,440	1,832,573,721	2,159,654,400
Total Withdrawal of Water		61,248,391	72,541,440	1,837,451,721	2,172,614,400

Note: C.W. is Circulating (Condenser Cooling) Water recirculated to the river, except for Unit 8. The average flows above are based on information provided by the City of Tallahassee as based on the best information available at the time, but do not constitute limits.

7. Beginning with the achievement of Commercial Operation of Unit 8, withdrawals of individual facilities and combined withdrawals will not exceed the maximum flows as shown below:

Withdrawal Point		Average Daily Flow (gallons)	Maximum Daily Flow (gallons)	Average Monthly Flow (gallons)	Maximum Monthly Flow (gallons)
#	Description				
SOP 6	Well	0	0	0	0
SOP 7	Well	0	0	0	0
SOP 8	Well	0	0	0	0
SOP 9	Well	0	0	0	0
Total All Wells		0	0	0	0
SW 4	Unit 4 C.W.	0	0	0	0
SW 5	Unit 5 C.W.	0	0	0	0
SW 6	Unit 6 C.W.	0	0	0	0
SW 7	Unit 7 C.W.	58,426,751	60,624,000	1,752,802,521	1,818,720,000
SW GT	Gas Turbines	300,000	2,937,600	9,000,000	88,128,000
SW 8	Unit 8 C.W.	959,040	1,347,840	28,771,200	36,806,400
Total all Surface Water		59,685,791	64,909,440	1,790,573,721	1,943,654,400
Total Withdrawal of Water		59,685,791	64,909,440	1,790,573,721	1,943,654,400

Note: C.W. is Circulating (Condenser Cooling) Water Recirculated to the river, except for Unit 8. The average flows above are based on information provided by the City of Tallahassee as based on the best information available at the time, but do not constitute limits.

8. The use of the permitted water withdrawal is restricted to the use described in the Site Certification Application. Any change in the use of said water shall require a modification of the Site Certification.

9. The District's staff, upon proper identification, will have permission to enter, inspect and observe permitted and related facilities in order to determine compliance with the approved plans, specifications, and conditions of these Conditions.

10. The District's staff, upon providing prior notice and proper identification, may request permission to collect water samples for analysis, measure static and/or pumping water levels and collect any other information deemed necessary to protect the water resources of the area.

11. The District reserves the right, at a future date, to require the City of Tallahassee to submit pumpage records for any or all withdrawal point(s) covered by this Certification.

12. The City of Tallahassee shall mitigate any significant adverse impact caused by withdrawals permitted herein on the resource and legal water withdrawals and uses, and on adjacent land use, which existed at the time of filing of the SCA.

13. The City of Tallahassee shall not cause significant saline water intrusion or increased chloride levels. The District reserves the right to curtail permitted withdrawal rates if withdrawals cause significant saline water intrusion or increased chloride levels.

14. The District, pursuant to Section 373.042, F.S., at a future date, may establish minimum and/or management water levels in the aquifer, aquifers, or surface water hydrologically associated with the permitted withdrawals; these water levels may require the City of Tallahassee to limit withdrawal from these water sources at times when water levels are below established levels.

15. Nothing in this Site Certification shall be construed to limit the authority of the Northwest Florida Water Management District to declare water shortages and issue orders pursuant to Section 373.175, F.S., or to formulate and implement a plan during periods of water shortage pursuant to Section 373.222246, F.S., or to declare Water Resource Caution Areas pursuant to Chapters 40A-2.801, and 62-40.41 F.A.C.

(a) In the event of a declared water shortage, water withdrawal reductions shall be made as ordered by the District.


(b) In the event of a declared water shortage or an area as a Water Resource Caution Area, the District may initiate any required action to alter, modify or inactivate all or parts of this section of the Conditions of Certification.

16. The City of Tallahassee shall properly plug and abandon any well determined unsuitable for its intended use, not properly operated and maintained, or removed from service. The well(s) shall be plugged and abandoned to District Standards in accordance with Section 40A-3.531, F.A.C.

B. Specific Conditions

1. The City of Tallahassee shall not exceed a withdrawal rate of 300 gallons per minute from the Floridan Aquifer System and shall continue to rotate the pumping of the wells in a manner designed to minimize the impact to the resource and any nearby permitted users.
2. The City of Tallahassee shall maintain, in working order, in-line totaling flow meters on all wells.
3. The City of Tallahassee shall, by January 31 of each year, submit for ground water withdrawals, a completed Water Use Summary Reporting Form (NFWWMD A2-I) for each month of the previous year. Water use amounts for each well may be calculated using flow meter readings at the plant divided by the pump rate of each well. The calculations must be provided with each submittal. The City of Tallahassee shall also submit a statement confirming that all water withdrawn from the St. Marks River for once-through cooling (Units 5, 6, 7 C.W. and Gas Turbines) has been returned. The first report is due by January 31, 1998.
4. The City of Tallahassee shall reference the power plant's wells by their Florida Unique Identification Number when corresponding with the District (pumping reports, etc.).
5. The City of Tallahassee shall continue to return all of the surface water withdrawn from the St. Marks River for once-through cooling (Units 5, 6, 7 C.W. and Gas Turbines) back to the St. Marks River.
6. The City of Tallahassee shall provide for the efficient and non-wasteful use of water, and shall implement water conservation measures designed to enhance water use efficiency and reduce water demand and losses.

TO: Power Plant Siting Review Committee

FROM: Buck Oven, Siting Coordination Office 

DATE: July 16, 1997

SUBJECT: Purdom Unit 8, PA 96-35, Module 8046
Amendment to Application

Attached please find a copy of the City of Tallahassee's responses to comments on their application for certification of a new generating system at the Purdom Power Plant. Please insert the amended pages review and comment on them return your comments as soon as practical but no later than August 15, 1997.

Attach:



CITY HALL
300 S. ADAMS ST.
TALLAHASSEE, FL
32301-1731
904/891-0010
TDD 1-800/955-8771

SCOTT MADDOX
Mayor
STEVE MEISBURG
Mayor Pro Tem

JOHN PAUL BAILEY
Commissioner
DEBBIE LIGHTSEY
Commissioner
RON WEAVER
Commissioner

ANITA R. FAVORS
City Manager
ROBERT B. INZER
City Treasurer-Clerk

JAMES R. ENGLISH
City Attorney
RICARDO FERNANDEZ
City Auditor

July 16, 1997

Hand Delivered

Hamilton S. Oven
Department of Environmental Protection
2720 Blair Stone Road
Suite H
Tallahassee, FL 32399

DEPARTMENT OF
ENVIRONMENTAL PROTECTION

JUL 16 1997

Subject: City of Tallahassee - Purdom Unit 8 Project
Edited Pages of Site Certification Application

SITING COORDINATION

Dear Mr. Oven:

Enclosed please find 18 sets of edited pages to the subject Site Certification. As we have discussed, these pages contain edits of the text, figures, and tables which clarify certain issues in response to agency questions previously asked and answered, or simply correct typographical errors. These editorial changes are provided for the convenience of all reviewers and do not represent a revision to the project.

Revised and additional text is italicized for ease of identification and a line marking the location of a change is included on the edge of each page. Instructions for replacing and adding pages are also included.

Please let me know if you have any questions on this material. You can reach me at (850) 891-8850.

Thank you for helping the City of Tallahassee develop this method for keeping all parties up to date.

Sincerely,

Jennette Curtis
Environmental Administrator

Enclosures

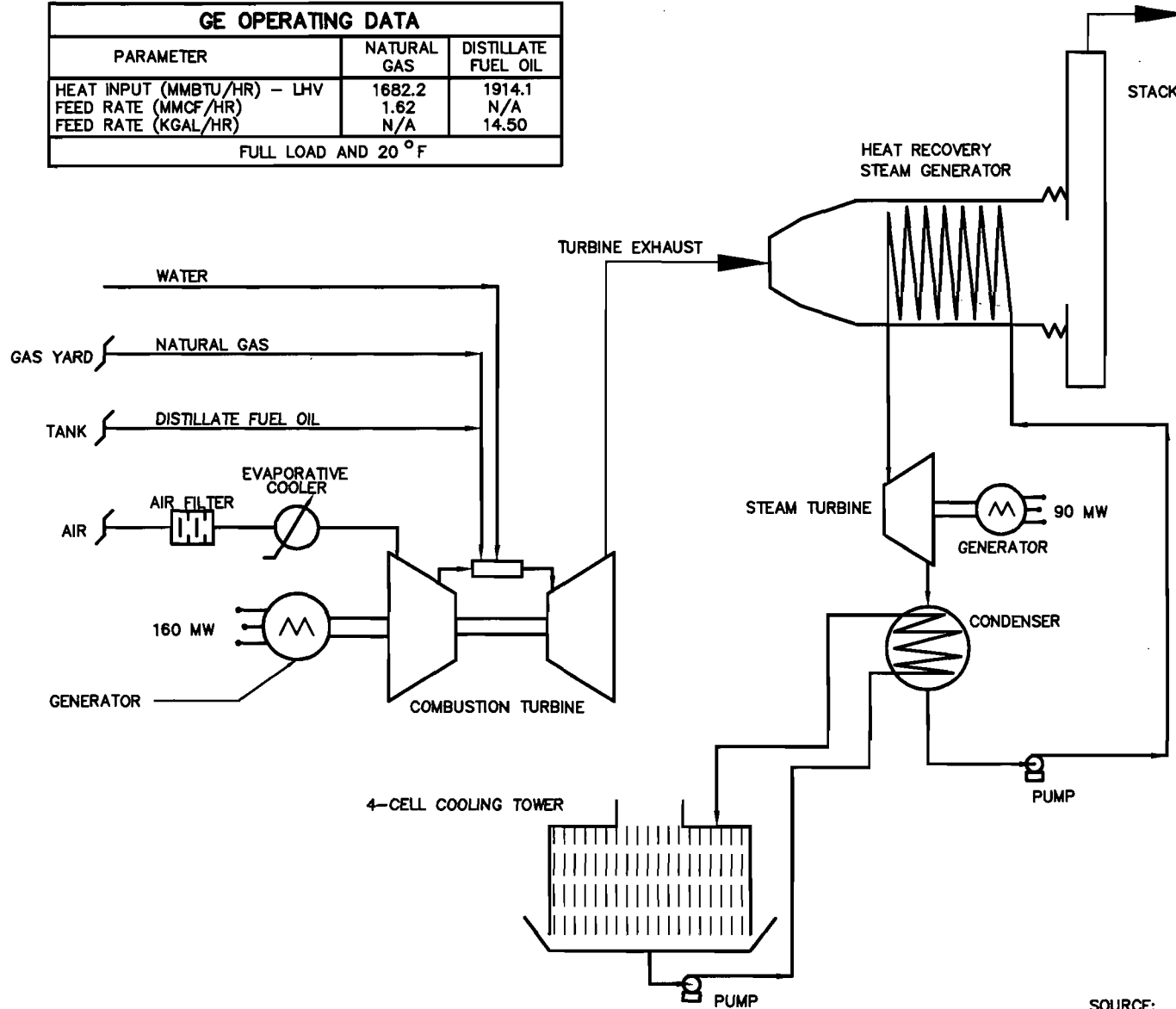
JC/ns

cc: Rob McGarrah (COT)
Gary Sams (HGSS)
Doug Fulle (FWENC)

c:\winword\PP8team\Ovenltr2.doc

GE OPERATING DATA		
PARAMETER	NATURAL GAS	DISTILLATE FUEL OIL
HEAT INPUT (MMBTU/HR) - LHV	1682.2	1914.1
FEED RATE (MMCF/HR)	1.62	N/A
FEED RATE (KCAL/HR)	N/A	14.50
FULL LOAD AND 20 °F		

EU13 - EXHAUST PARAMETERS
EXHAUST TEMP. - 171 TO 203 °F
STACK HEIGHT - 200'
SO2 EMISSIONS - 80 TPY
NOx EMISSIONS - 467 TPY
OPACITY - 10% EXCEPT AS ALLOWED



SOURCE: FOSTER WHEELER ENVIRONMENTAL CORPORATION, 1997



SIMPLIFIED PROCESS FLOW DIAGRAM
PURDOM UNIT 8 PROJECT - ST MARKS, FLORIDA

Figure
2-1

AL

THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

In the Matter of an
Application for Permit by:

OGC CASE NO. _____

City of Tallahassee Utility Services
300 South Adams Street
Tallahassee, FL 32301

DRAFT Permit No.: PSD-FL-239
Purdom Generating Station
Wakulla County

REQUEST FOR EXTENSION OF TIME

By and through undersigned counsel, the City of Tallahassee (Tallahassee) hereby requests, pursuant to Florida Administrative Code Rules 28-106.111(3) and 62-103.050(1), an extension of time, to and including August 19, 1997, in which to file a Petition for Administrative Proceedings in the above-styled matter. As good cause for granting this request, Tallahassee states the following:

1. On or about July 8, 1997, Tallahassee received from the Department of Environmental Protection (Department) an "Intent to Issue PSD Permit" (Permit No. PSD-FL-239) for the Purdom Generating Station in Wakulla County, Florida. Along with the Intent to Issue, Tallahassee received a draft PSD permit and "Public Notice of Intent to Issue PSD Permit."

2. Tallahassee previously requested an extension to and including August 5, 1997. While Charles T. (Chip) Collette with the Department's Office of General Counsel orally agreed to this extension, an Order formally granting the extension has not been issued.

3. The draft permit and notice contain several provisions that warrant clarification or correction.

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AUG 04 1997

BUREAU OF
AIR REGULATION

4. Representatives of Tallahassee have met and corresponded with staff of the Department's Bureau of Air Regulation in an effort to resolve the issues identified by Tallahassee. Final resolution of a few remaining issues is expected soon.

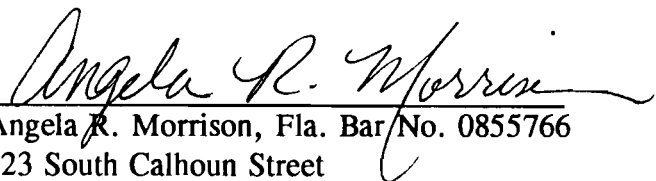
5. This request is filed simply as a protective measure to avoid waiver of Tallahassee's right to challenge certain conditions contained in the draft PSD permit. Grant of this request will not prejudice either party, but will further their mutual interest and likely avoid the need to file a petition and proceed to a formal administrative hearing.

6. On behalf of the Department, Charles T. (Chip) Collette with the Department's Office of General Counsel has agreed to Tallahassee's request for an extension of time until August 19, 1997.

WHEREFORE, Tallahassee respectfully requests that the time for filing of a Petition for Administrative Proceedings in regard to the Department's Intent to Issue PSD Permit for Permit No. PSD-FL-239 be formally extended to and including August 19, 1997.

Respectfully submitted this 1st day of August, 1997.

HOPPING GREEN SAMS & SMITH, P.A.


Angela R. Morrison, Fla. Bar No. 0855766
123 South Calhoun Street
Post Office Box 6526
Tallahassee, FL 32314
(904) 222-7500

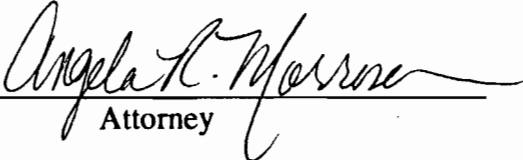
Attorney for CITY OF TALLAHASSEE UTILITY
SERVICES

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of the foregoing has been furnished to the following
by U.S. Mail on this 1st day of August, 1997:

Clair H. Fancy, P.E.
Chief
Bureau of Air Regulation
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2600

Charles T. (Chip) Collette, Esq.
Office of General Counsel
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2600



Attorney

96539

AL



CITY HALL
300 S. ADAMS ST.
TALLAHASSEE, FL
32301-1731
904/891-0010
TDD 1-800/955-8771

SCOTT MADDOX
Mayor
STEVE MEISBURG
Mayor Pro Tem

JOHN PAUL BAILEY
Commissioner
DEBBIE LIGHTSEY
Commissioner
RON WEAVER
Commissioner

ANITA R. FAVORS
City Manager
ROBERT B. INZER
City Treasurer-Clerk

JAMES R. ENGLISH
City Attorney
RICARDO FERNANDEZ
City Auditor

Hand Delivered

July 24, 1997

Mr. C. H. Fancy, P.E., Chief
Bureau of Air Regulation
Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Fancy:

Subject: Purdom Unit 8 Project
Comments on Draft Permit No. PSD-FL-239/PA97-36

Thank you very much for your timely review of our application and for allowing us to meet with you and your staff to resolve all of the major issues which had concerned us regarding the conditions which would apply to the Purdom Unit 8 Project. We believe that all that remains are a number of relatively minor corrections and edits, including a number of corrections to the suggested wording of conditions which we provided to the Department.

Enclosed please find our comments on the subject Draft Permit as well as a revised version (using the strike through/italics method for suggested changes) for your use. As per discussions with Mr. Martin Costello, of your office, we have set-up a meeting for Monday, July 28, 1997, to discuss our minor comments/corrections. Although relatively minor, we would like to get them resolved as quickly as possible in order to facilitate getting the draft Title V Amendment completed in a timely manner.

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JUL 24 1997

**BUREAU OF
AIR REGULATION**

Mr. C. H. Fancy, P.E.

7/24/97

Page 2

Thank you for your time and consideration of this matter. If you have any question on this information, please do not hesitate to call me at(850) 891-8850.

Sincerely,



Jennette Curtis

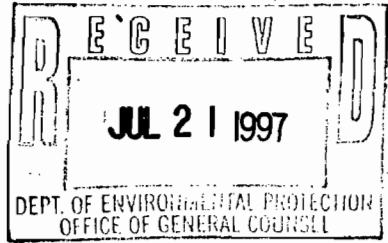
Environmental Administrator

JC/ns

Enclosure

cc. Al Linero(DEP)
Martin Costello (DEP)
Cleve Holladay (DEP)
R. McGarrah (COT)
A. Morrison (HGSS)
D. Fulle (FWENC)
D. Graziani (FWENC)
F. Michel (RE&C)
File 363.501, .511, .705

AL



THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

In the Matter of an
Application for Permit by:

OGC CASE NO. _____

City of Tallahassee Utility Services
300 South Adams Street
Tallahassee, FL 32301

DRAFT Permit No.: PSD-FL-239
Purdum Generating Station
Wakulla County

RECEIVED

JUL 22 1997

BUREAU OF
AIR REGULATION

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By and through undersigned counsel, the City of Tallahassee (Tallahassee) hereby requests, pursuant to Florida Administrative Code Rules 28-106.111(3) and 62-103.050(1), an extension of time, to and including August 5, 1997, in which to file a Petition for Administrative Proceedings in the above-styled matter. As good cause for granting this request, Tallahassee states the following:

1. On or about July 8, 1997, Tallahassee received from the Department of Environmental Protection (Department) an "Intent to Issue PSD Permit" (Permit No. PSD-FL-239) for the Purdom Generating Station in Wakulla County, Florida. Along with the Intent to Issue, Tallahassee received a draft PSD permit and "Public Notice of Intent to Issue PSD Permit."

2. The draft permit and notice contain several provisions that warrant clarification or correction.

3. Representatives of Tallahassee plan to meet and correspond with staff of the Department's Bureau of Air Regulation in an effort to resolve the issues identified by Tallahassee.

4. This request is filed simply as a protective measure to avoid waiver of Tallahassee's right to challenge certain conditions contained in the draft PSD permit. Grant of



CITY HALL
300 S. ADAMS ST.
TALLAHASSEE, FL
32301-1731
904/891-0010
TDD 1-800/955-8771

SCOTT MADDOX
Mayor
STEVE MEISBURG
Mayor Pro Tem

JOHN PAUL BAILEY
Commissioner
DEBBIE LIGHTSEY
Commissioner
RON WEAVER
Commissioner

ANITA R. FAVORS
City Manager
ROBERT B. INZER
City Treasurer-Clerk

JAMES R. ENGLISH
City Attorney
RICARDO FERNANDEZ
City Auditor

July 18, 1997

Certified Mail No. P483 230 28

Mr. Hamilton S. Oven, Administrator
Office of Siting Coordination
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RECEIVED
JUL 18 1997
BUREAU OF
AIR REGULATION

Subject: City of Tallahassee
Purdom Unit 8 Project
Partial Draft - Proposed Conditions of Certification

Dear Mr. Oven:

Enclosed please find hard copy and disk versions of a partial draft of proposed Conditions of Certification for the Purdom Station. This is in response to our discussion on this matter last month. We have drafted proposed conditions for the existing units at Purdom based on their existing permits in an effort to make it easier for the various agencies involved to come up with a consistent set of conditions. Also included are some proposed "facility-wide" conditions which will be applicable to the new Unit 8 as well as to the existing units (we will add more proposed "facility-wide" conditions later). However, we have not attempted to compile a complete set of conditions as we didn't think that is what you had in mind. We have included a proposed set of NPDES conditions although it is understood that you may choose to simply provide a reference in the conditions to the separately issued NPDES permit. These conditions have been formatted so that they could serve as a stand alone NPDES permit.

Some explanation would probably be helpful on a couple of additional points. First, based on the plant history of successfully passing toxicity tests, and the fact that in three years there will be no wastewater discharges from the plant (except for the once through cooling water discharge from Unit 7), we have left out of the proposed conditions any reference to toxicity testing. Second, we have added a definition of "commercial operation" in the water related sections of the conditions because it is different from the typical regulatory usage of that term in the air quality arena. Third, we have added a proposed condition in the "Modification" section that deals with conforming the conditions to changes in the associated federal permits (i.e., Title V and NPDES), as it will be important to be able to avoid the PPSA formal modification process for minor changes which occur in these permits. We believe this third point is consistent with your current practice.

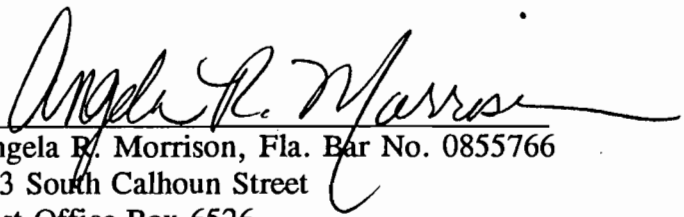
this request will not prejudice either party, but will further their mutual interest and likely avoid the need to file a petition and proceed to a formal administrative hearing.

5. On behalf of the Department, Charles T. (Chip) Collette with the Department's Office of General Counsel has agreed to Tallahassee's request for an extension of time until August 5, 1997.

WHEREFORE, Tallahassee respectfully requests that the time for filing of a Petition for Administrative Proceedings in regard to the Department's Intent to Issue PSD Permit for Permit No. PSD-FL-239 be formally extended to and including August 5, 1997.

Respectfully submitted this 21st day of July, 1997.

HOPPING GREEN SAMS & SMITH, P.A.


Angela R. Morrison, Fla. Bar No. 0855766
123 South Calhoun Street
Post Office Box 6526
Tallahassee, FL 32314
(904) 222-7500

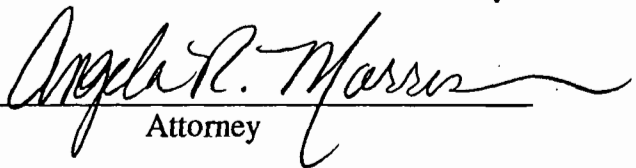
Attorney for CITY OF TALLAHASSEE UTILITY SERVICES

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of the foregoing has been furnished to the following
by U.S. Mail on this 21st day of July, 1997:

Clair H. Fancy, P.E.
Chief
Bureau of Air Regulation
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2600

Charles T. (Chip) Collette, Esq.
Office of General Counsel
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2600



Attorney

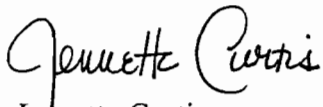
96539

Mr. Hamilton S. Oven
July 18, 1997
Page 2

While we have included a set of air quality conditions for the existing units only (taken from the "Proposed" Title V Permit), we recognize that it is somewhat difficult to evaluate the conditions applicable to those units in isolation from the conditions which will apply to Unit 8 and to the facility as a whole. Therefore, we want you to know that we intend to provide a complete set of air quality related proposed conditions in the near future which will take into account the language from the draft PSD Permit for Unit 8 as well as the Proposed Title V Permit.

Please note that we did not copy the NFWFMD. If you have any questions on this material, please do not hesitate to call me at (850) 891-8850.

Sincerely,



Jennette Curtis
Environmental Administrator

Enclosures

cc: R. McGarrah (COT)
G. King (COT)
G. Sams (HGSS)
A. Morrison (HGSS)
F. Michel (RE&C)
D. Fulle (FWENC)
Clair Fancy, (DEP)
Craig Diltz, (DEP)
Al Linero, (DEP)
Martin Costello, (DEP)
Cleve Holliday, (DEP)
c:/winword/letters/ovenltr.doc

COMMENTS ON
PURDOM UNIT 8
DRAFT PERMIT NO. PSD-FL-239/PA-36

PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT

Please confirm that the following corrections and changes to this notice can be made:

1. In the first paragraph, clarification that a BACT determination was “conducted” rather than “required” as we have previously discussed.
2. In the second paragraph, addition of the word “nominal” in front of “250” when referencing the capacity of Unit 8.
3. In the second paragraph, addition of the words “meet its system needs and” after the words “heat recovery steam generator to” in order to more fully describe the need for Unit 8.
4. In the second paragraph, addition of the words “(gas) and water injection (diesel)” after the words “dry low NO_x burners” and add the word “primary” in front of “use of natural gas” in that same sentence.
5. In the third paragraph, addition of “nominal” in front of each reference to a MW rating.
6. In the first line of the third paragraph, insertion of “/or” after “and” to better describe how the fuels are fired.
7. In the second line of the third paragraph, correction of the rating of the existing combustion turbines to a nominal 12.3 MW each.
8. In the table of Class II increment consumption, correction of the allowable increment for PM₁₀ to 30 µg/m³.
9. In the fourth paragraph on the second page of the notice, correction of “Chapter 403.501-519” to “Sections 403.501 - .519.”
10. Revision of the fifth and sixth paragraphs on the second page, and deletion of the first four paragraphs on the third page to clarify that mediation is not available for this proceeding. This has been confirmed and approved by Charles T. (Chip) Collette of the Department’s Office of General Counsel.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION:

If your intent is to reissue the text of the Technical Evaluation and Preliminary Determination in the Final Determination, we suggest the following corrections, and, in any case, request that you note them:

1. On the title page, please refer to the Project as a “250 Megawatt Combined Cycle Combustion Turbine and Heat Recovery Steam Generator.”
2. In Section 2.1 change “Northeast” to “north” after “0.7 kilometers.”
3. In the first paragraph of Section 3, please add “combustion turbine” after “GE MS7231FA” in the first sentence for clarification purposes, and add “(gas) and water injection(diesel)” after “NO_x” in that same sentence in order to clarify that water injection is also used.
4. Also in the first paragraph of Section 3, please replace “an electric motor” with “the generator and a static start system” in the third sentence to be technically correct.
5. In the second paragraph of Section 3, please delete the word “and” after “natural gas,” on the fourth line, change the commas on the fifth and sixth lines to semicolons, and change the combustion turbine ratings to 12.3 MW for clarification.
6. In Section 5, please eliminate Rules 62-204.220, 62-204.240, 62-204.260, 62-204.360, and 62-297.520 from the list of applicable rules with which the emission units must comply as we believe that they are not directly applicable to the Project.
7. In Section 6.2, Table 1, please swap the current and future values for both Beryllium and Lead to correct typographical errors.
8. In Section 6.2, Table 1, please move the “*” to the column heading, replace the three “0” values in that column with “40, 40, 100” and add a second sentence to the footnote which reads “In this case no pollutants would produce such an impact and the standard criteria apply” for clarification.
9. In Section 6.3.1, please modify the fourth sentence to read “The firing temperature on this Frame 7FA combustion turbine will be 2400 °F” as this temperature is not applicable to all 7FA’s.
10. In Section 6.3.1, fifth line from the end, please insert “Mark V” after “GE’s”, change “IV” to “V” in the next line, and change “the” to “a” after the word “throughout” in the third to last line for clarification.
11. In Section 6.3.4, please change “higher loads” to “full load” in the next to last line to be technically correct.
12. In Section 6.4.1, there is a reference to a remand of EPA’s stack height rules. Upon review of the remand, we believe that none of the remanded provisions are applicable to this case. Please remove the language indicating that the permit may be modified when EPA modifies its stack height rules.
13. In Section 6.5.3, please delete the word “annual” as this is true for short-term concentrations as well.
14. Please replace the Simplified Process Flow Diagram with the attached version which eliminates the electric starter.

DRAFT CONSTRUCTION PERMIT PSD-FL-239/PA97-36

1. In Section I, Subsection A, please replace the two paragraphs with the corrected paragraphs from the TE/PD, per our comments above.
2. In Section I, Subsections C and D, please refer the 04-21-97 and 05-01-97 letters as “Completeness Memos” rather than an “Incompleteness Letters,” and change the date on the second one from 05-01-97 to 04-25-97. Please eliminate the 05-07-97

Company response line. Also, please change the date on the completeness determination from 05-07-97 to 05-01-97, and add “and sufficient by PPS Department” to the description.

3. In Section II, Subsection A, Condition 5, please consider providing an expiration date for the permit, possibly “five years from the date of issuance,” as this condition seems inconsistent with Condition III.G.9 and the Department’s Rule 62-4.070(4), F.A.C.
4. In Section III, Subsection A, Condition A.4, please remove the words “an oxidation catalyst and/or” as there will be room left for an SCR but not for an oxidation catalyst in the HRSR.
5. In Section III, Subsection A, Condition A.9, please remove the second sentence, as it might inadvertently imply the need to minimize oil firing. As you know, the dry low NO_x burner is in the diffusion mode when the combustion turbine is firing oil.
6. In Section III, Subsection A, Condition B.1, please modify footnote (a) in the table by adding the words “excluding startup, shutdown, malfunction, and fuel switching.”
7. In Section III, Subsection A, Condition D.1, please indicate that the annual Method 10 Determination of Carbon Monoxide is for gas firing only since the annual RATAs will be conducted on gas. Also, under the 40 CFR 75 heading, please change the third sentence to read “Based on CEMS data at the end of each operating day, a new 30 day average emission...” in order to avoid confusion. Finally, please clarify that initial compliance testing is required “within 60 days after achieving the maximum production rate ‘on each fuel,’ at which this unit will be operated, but not later than 180 days of initial operation of the unit ‘for that fuel,’ and annually thereafter....” This is because Unit 8 may not be operated on fuel oil for some time after startup on gas.
8. In Section III, Subsection A, Condition D2, please eliminate the words “and for acid rain compliance purposes” from the third sentence as the fuel supplier data is not actually used for acid rain purposes, and acid rain compliance will be addressed in the acid rain part of the Title V Permit.
9. In Section III, Subsection A, Condition F.3.f, please change “form” to “from” and eliminate the parenthetical “(Florida Gas Transmission Company)” to avoid the implication that FGT is the only potential gas supplier.
10. In Section III, Subsection A, Condition 5, please refer to the conversion factor added to the first formula as a “units conversion factor” to be more specific to the type of conversion factors which might be used there. Also, in the notes following the fifth formula, please add a parenthetical after the second note which reads “(i.e., 0.05 % Sulfur = 0.0005)”. Finally, in the last formula, please change the term “Heat Rate” to “Heating Value” of natural gas.
11. In Section III, Subsection A, please remove Condition G.1 as it appears redundant with the introductory paragraph under A. General Operating Requirements, and renumber the remaining conditions.
12. In Section III, Subsection A, Condition G.6 (now G.5), please change the citation from “4 CFR....” to “40 CFR....” to correct this typographical error.
13. In Appendix GC, please check all three boxes in Condition G.13.

APPENDIX BD BEST AVAILABLE CONTROL TECHNOLOGY
DETERMINATION(BACT)

1. In the introduction, please replace the first two paragraphs with the same two paragraphs from the TE/PD discussed earlier.
2. Under the Nitrogen Oxides heading, in the second full paragraph on Page BD-6, please make the same changes discussed above for the TE/PD (Comment 10) regarding firing temperature, the Mark V Speedtronic control system, and range of loads.



Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

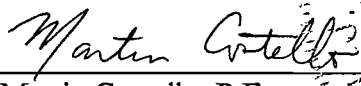
P.E. Certification Statement

Permittee:
City of Tallahassee Utilities Services
Purdom Generating Station

DRAFT Permit No. PSD-FL-239 / PA97-36
Facility ID No.: 1290001

Project type: Construction of New Combustion Turbine and
Heat Recovery Steam Generator
Purdom Unit 8

I HEREBY CERTIFY that the engineering features described in the above referenced application and subject to the proposed permit conditions provide reasonable assurance of compliance with applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-4 and 62-204 through 62-297. However, I have not evaluated and I do not certify aspects of the proposal outside of my area of expertise (including but not limited to the electrical, mechanical, structural, hydrological, and geological features).



Martin Costello, P.E.
Registration Number: 47587
Professional Engineer II



Department of Environmental Protection
Bureau of Air Regulation
New Source Review Section
111 South Magnolia Drive, Suite 4
Tallahassee, Florida 32301
Phone (904) 488-1344
Fax (904) 922-6979

"Protect, Conserve and Manage Florida's Environment and Natural Resources"

PERMITTEE:

City of Tallahassee
Purdom Generating Station
300 South Adams Street
Tallahassee, FL 32301

FID No.	1290001
PSD No.	PSD-FL-239
PPS No.	PA97-36
Expires:	N/A

Authorized Representative:
Jennette Curtis
Environmental Administrator

LOCATED AT:

City of Tallahassee
Purdom Generating Station

Project: Purdom Unit 8
Standard Industrial Classification Code (SIC): 4911
Wakulla County, Florida

UTM: Zone 16 ; 769.611 km E ; 3339.767 km N
Directions: *On the north end of the City of St. Marks on SR 363, Wakulla County*

STATEMENT OF BASIS:

This construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and the Florida Administrative Code (F.A.C.) Chapters 62-4, 62-204, 62-210, 62-212, 62-296, 62-297. The above named permittee is authorized to modify the facility in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

Attached appendices and Tables made a part of this permit:

Appendix BD	BACT Determination
Appendix GC	Construction Permit General Conditions

Howard L. Rhodes, Director
Division of Air Resources
Management

AIR CONSTRUCTION PERMIT PSD-FL-239 / PA97-36

SECTION I. FACILITY INFORMATION

SUBSECTION A. FACILITY DESCRIPTION

~~The City of Tallahassee (COT) plans to install a new combined cycle combustion turbine system, Unit 8, at the existing Purdom facility consisting of a 160 MW (nominal rating) GE MS7231FA with DLN 2 dry low NO_x burners (Unit 8) and a nonfired heat recovery steam generator (HRSG) with a nominal 90 MW steam turbine. The compressor inlet air will be conditioned by an evaporative cooler when needed. The turbine will be started using an electric motor. A new 200 foot stack and a cooling tower will be added to the facility for Unit 8.~~

~~Unit 8 will be located at the cities' Sam O. Purdom Generating Station near St. Marks, in Wakulla county. Existing steam generating Units 5 and 6 will be permanently shut down once Unit 8 has completed the initial compliance test. Other existing units at the plant consist of Unit 7, pre NSPS boiler with a nominal rating of 44 MW fired by natural gas, and cofired or fired alone with residual fuel oil or distillate fuel oil, two pre-NSPS distillate fuel oil or natural gas fired combustion turbines with a nominal rating of 12.5 MWs each (GT1 and GT2), and a Subpart Dc auxiliary steam boiler fired by natural gas.~~

The City of Tallahassee plans to install a new combined cycle combustion turbine system, Unit 8, at the existing Purdom facility consisting of a 160 MW (nominal rating) GE MS7231FA combustion turbine with DLN-2 dry low NO_x (gas) and water injection (diesel) burners (Unit 8) and a nonfired heat recovery steam generator (HRSG) with a nominal 90 MW steam turbine. The compressor inlet air will be conditioned by an evaporative cooler when needed. The turbine will be started using the generator and a static start system. A new 200 foot stack and a cooling tower will be added to the facility for Unit 8.

Unit 8 will be located at the City's Sam O. Purdom Generating Station in St. Marks, Wakulla County. Existing steam generating Units 5 and 6 will be permanently shut down once Unit 8 has completed the initial performance test. Other existing units at the plant consist of Unit 7, a pre-NSPS boiler with a nominal rating of 44 MW fired by natural gas, residual fuel oil or distillate fuel oil; two pre-NSPS distillate fuel oil or natural gas fired combustion turbines with a nominal rating of 12.3 MWs each (GT1 and GT2); and a Subpart Dc auxiliary steam boiler fired by natural gas.

SUBSECTION B. REGULATORY CLASSIFICATION

The Purdom Generating Station is classified as a major air pollutant emitting facility. Air pollutant emissions are over 100 TPY for nitrogen oxides (NO_x) and carbon monoxide (CO).

This facility is on the list of the 28 Major Facility Categories, Table 62-212.400-1. This facility is also classified as a Title V facility.

SUBSECTION C. PERMIT SCHEDULE:

- 03-17-97: Date of Receipt of Application
- 04-21-97: Department's Preliminary ~~Ine~~Completeness ~~Letter~~ Memo
- ~~05-01~~04-25-97: PPS Department's ~~Ine~~Completeness ~~Letter~~ Memo sent
- ~~05-07-97: Company's Response to Department's letter~~
- 05-07-97: Application deemed complete *and sufficient* by PPS Department

AIR CONSTRUCTION PERMIT PSD-FL-239 / PA97-36

SECTION I. FACILITY INFORMATION

- 07-01-97: Intent Issued

SUBSECTION D. RELEVANT DOCUMENTS:

The documents listed below are the basis of the permit. They are specifically related to this permitting action. These documents are on file with the Department.

Application

Department's letters dated ~~4/21~~5/1/97

~~Company letters dated 5/7/97~~

Department of Interior's letters dated 1/21/97

[EPA's letter dated ...]

[Third party's letters dated ...]

AIR CONSTRUCTION PERMIT PSD-FL-239 / PA97-36

SECTION II. EMISSION UNIT(S) GENERAL REQUIREMENTS

SUBSECTION A. ADMINISTRATIVE

- 1 Regulating Agencies: All documents related to applications for permits to operate, reports, tests, minor modifications and notifications or for permits to construct or modify an emission unit(s) *subject to the Prevention of Significant Deterioration (PSD) or to Nonattainment Areas (NA) Review requirements* should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (FDEP) located at 2600 Blairstone Road, Tallahassee, Florida 32399-2400 and phone number (850) 488-1344.
- 2 General Conditions: The owner and operator is subject to and shall operate under the attached General Permit Conditions G.1 through G.15 listed in *Appendix GC* of this permit. General Permit Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. [**Rule 62-4.160, F.A.C.**]
- 3 Terminology: The terms used in this permit have specific meanings as defined in the corresponding chapters of the Florida Administrative Code.
- 4 Forms and Application Procedures: The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. [**Rule 62-210.900, F.A.C.**]
- 5 Expiration: This air construction permit shall ~~not~~ expire *five years from the date of issuance*.

AIR CONSTRUCTION PERMIT: PSD-FL-239 / PA97-36

SECTION III. SPECIFIC CONDITIONS

SUBSECTION A. SPECIFIC CONDITIONS:

A. General Operation Requirements

Applicable Regulations: Unless otherwise indicated in this permit, the construction and operation of the subject emission unit(s) shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of Chapter 403, F.S and Florida Administrative Code Chapters 62-4, 62-103, 62-204, 62-210, 62-212, 62-213, 62-214, 62-296, 62-297; and the applicable requirements of the Code of Federal Regulations Section 40, Part 60 including Subpart A and GG (1997 version), adopted by reference in the Florida Administrative Code regulation [Rule 62-204.800 F.A.C.]. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting requirements or regulations. [Rule 62-210.300, F.A.C.]

1. The maximum heat input rates, based on the lower heating value (LHV) of each fuel to Purdom Unit 8 at ambient conditions of 95°F temperature, 60% relative humidity, and 14.7 psi pressure shall not exceed 1,467.7 mmBtu/hr when firing natural gas, nor 1,659.5 mmBtu/hr when firing No. 2 fuel oil. These maximum heat input rates will vary depending upon ambient conditions and the combustion turbine characteristics. Manufacturer's curves or equations for correction to other ambient conditions shall be provided to the Department of Environmental Protection (DEP) at least 90 days prior to initial compliance testing. These curves or equations shall be used to establish the maximum allowable heat inputs at other ambient conditions for compliance determinations.
2. Purdom Unit 8 may operate continuously (i.e., 8760 hours per year).
3. Only natural gas or No. 2 fuel oil with a maximum sulfur content of 0.05% by weight shall be fired in the combined cycle combustion turbine.
4. The permittee shall install duct module(s) suitable for possible future installation of ~~an oxidation catalyst and/or~~ SCR equipment on the combined cycle generating unit.
5. Dry low NO_x combustors shall be used on Unit 8 when firing natural gas and water injection shall be used when firing No. 2 fuel oil for control of NO_x emissions.
6. During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary.
7. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the owner or operator shall notify the Permitting Authority as soon as possible, but at least within (1) working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; the steps being taken to correct the problem and prevent future recurrence; and where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit and the regulations. [Rule 62-4.130, F.A.C.]
8. Operating Procedures: Operating procedures shall include good operating practices and proper training of all operators and supervisors. The good operating practices shall meet the guidelines and procedures as established by the equipment manufacturers. All operators (including supervisors) of air pollution control devices shall be properly trained in plant specific equipment. [Rule 62-4.070(3), F.A.C.]
9. The dry low NO_x burner system shall be tuned upon initial operation to optimize emissions reductions and shall be maintained to minimize NO_x emissions and CO emissions. ~~Operation of the unit when the dry low NO_x burner system is in the diffusion firing mode shall be minimized.~~

SECTION III. SPECIFIC CONDITIONS

10. Circumvention: The owner or operator shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rules 62-210.650, F.A.C.]

B. Emission Limits and Standards

The following shall apply upon completion of the initial compliance tests:

1. Best Available Control Technology. The following is a summary of the BACT determinations by DEP:

Table 1. Emission Limits

Pollutant	Fuel	BACT Standard
NO _x	Gas	12 ppmvd @ 15 % O ₂ (a) (d)
	Oil	42 ppmvd @ 15 % O ₂ (a) (b) (d)
SO ₂	Gas	Good combustion
	Oil	Good combustion of low (0.05%) sulfur fuel oil
PM/PM ₁₀	Gas	Good combustion
	Oil	Good combustion of low (0.05%) sulfur fuel oil
Visible Emissions	Gas	10 percent opacity
	Oil	10 percent opacity
CO	Gas	25 ppmvd (c)
	Oil	90 ppmvd (c)
(a) 30-day rolling average <i>excluding startup, shutdown, malfunction, and fuel switching</i> . (b) Plus an allowance for fuel bound nitrogen using the formula provided in Condition B4. (c) By testing concurrent to RATA testing or by 3 one hour runs of Method 10. (d) Not corrected to ISO conditions.		

2. Visible Emissions. Visible emissions shall not exceed 10 percent opacity when firing either natural gas or No. 2 fuel oil. Drift eliminators shall be installed on the cooling tower to reduce PM/PM₁₀ emissions.
3. Oxides of Nitrogen. Oxides of nitrogen emissions when firing natural gas shall not exceed 12 ppmvd at 15% O₂ on a 30-day rolling average basis (except during periods of startup, shutdown, malfunction or fuel switching), as measured by CEMS. When monitoring data is not available, substitution for missing data shall be handled as required by Title IV (40 CFR 75) to calculate of the 30 day rolling average.
4. Oxides of Nitrogen. Oxides of nitrogen emissions when firing No. 2 fuel oil shall not exceed 42 ppmvd at 15% O₂ on a 30-day rolling average basis (except during periods of startup, shutdown, malfunction or fuel switching), as measured by applicable compliance measures, when fuel bound nitrogen values are less than or equal to 0.015 percent. For higher fuel bound nitrogen values (up to 0.03 percent), oxides of nitrogen shall be limited by the following formula:

AIR CONSTRUCTION PERMIT: PSD-FL-239 / PA97-36

SECTION III. SPECIFIC CONDITIONS

STD = 0.0042 + F where:

STD = allowable NO_x emissions (percent by volume at 15 percent O₂ and on a dry basis).

F = NO_x emission allowance for fuel-bound nitrogen defined by the following table:

Fuel-Bound Nitrogen (% by Weight)	F (NO_x % by Volume)
0 < N ≤ 0.015	0
0.015 < N ≤ 0.03	0.04 (N-0.015)

where: N = the nitrogen content of the fuel (% by weight).

5. Oxides of Nitrogen. Annual emissions of NO_x shall not exceed 467 tons per year from the Purdom facility (Unit 8, Unit 7, GT1, GT2, and the auxiliary boiler) on a calendar year basis, as measured by applicable compliance methods. [Requested by the applicant]
6. Sulfur Dioxide. Annual emissions of SO₂ shall not exceed 80 tons per year from the Purdom facility (Unit 8, Unit 7, GT1, GT2, and the auxiliary boiler) on a calendar year basis, as measured by applicable compliance methods. [Requested by the applicant]
7. Carbon Monoxide. Carbon monoxide emissions when firing natural gas shall not exceed 25 ppmvd as measured by Method 10.
8. Carbon Monoxide. Carbon monoxide emissions when firing No. 2 fuel oil shall not exceed 90 ppmvd as measured by Method 10.

C. Excess Emissions

1. Excess emissions resulting from startup, shutdown, malfunction or fuel switching shall be permitted provided that best operational practices are adhered to and the duration of excess emissions shall be minimized but in no case exceed four hours in any 24-hour period for cold startup or two hours in any 24-hour period for other reasons unless specifically authorized by DEP for longer duration.
2. Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown or malfunction shall be prohibited pursuant to Rule 62-210.700, F.A.C. In case of excess emissions resulting from malfunctions, the owner or operator shall notify Permitting Authority within one (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the problem; and the corrective actions being taken to prevent recurrence. [Rule 62-210.700(6), F.A.C.]
3. Excess Emissions Report: If excess emissions occur due to malfunction, the owner or operator shall notify the Permitting Authority within (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Department may request a written summary report of the incident. Pursuant to the New Source Performance Standards, excess emissions shall also be reported in accordance with 40 CFR 60.7, Subpart A. [Rules 62-4.130 and 62-210.700(6), F.A.C.]

D. Compliance Determination

SECTION III. SPECIFIC CONDITIONS

1. Compliance with the allowable emission limiting standards shall be determined within 60 days after achieving the maximum production rate, *in each fuel*, at which this unit will be operated, but not later than 180 days of initial operation of the unit *for that fuel*, and annually thereafter as indicated in this permit, by using the following reference methods as described in 40 CFR 60, Appendix A (1997 version), and adopted by reference in Chapter 62-297, F.A.C.

Initial (I) compliance tests shall be performed on Unit 8 while firing each fuel (gas, oil). Annual (A) compliance tests shall be performed during every federal fiscal year (October 1 - September 30) pursuant to Rule 62-297.340, F.A.C., on Unit 8 as indicated. The following reference methods shall be used:

- Method 9 Visual Determination of the Opacity of Emissions from Stationary Sources (I, A); annual on oil if greater than 400 hours of oil firing; however, testing on gas is required only once every five years.

- Method 10 Determination of Carbon Monoxide Emissions from Stationary Sources (I, A). Testing may be conducted at less than capacity. Annual compliance testing may be conducted concurrent with the annual RATA testing required pursuant to 40 CFR 75 (*gas only*).

- Method 20 Determination of Oxides of Nitrogen and diluent emissions from Stationary Gas Turbines (I only, for compliance with 40 CFR 60 Subpart GG)

- 40 CFR 75 Determination of Oxides of Nitrogen emissions will be by a Continuous Emissions Monitoring System (CEMS). Compliance with the NO_x emissions standards in Table 1 shall be demonstrated with this CEMS system based on a 30 day rolling average. Based on CEMS data ~~a separate compliance test is conducted~~ at the end of each operating day, ~~and~~ a new 30 day average emission rate is calculated from the arithmetic average of all valid hourly emission rates during the previous 30 operating days.

Note: No other methods may be used for compliance testing unless prior DEP approval is received in writing. The DEP may request a special compliance test pursuant to Rule 62-297.340(2), F.A.C., when, after investigation (such as complaints, increased visible emissions, or questionable maintenance of control equipment), there is reason to believe that any applicable emission standard is being violated.

2. Notwithstanding the requirements of Rule 62-297.340, F.A.C., the exclusive use of fuel oil with a maximum sulfur content limit of 0.05% or less, by weight, is the method for determining compliance for SO₂ and PM₁₀. For the purposes of demonstrating compliance with 40 CFR 60.333 SO₂ emission limit and the 0.05% S limit, fuel oil analysis using ASTM D2880-71 or D4294 (or equivalent) for the sulfur content of liquid fuels and D1072-80, D3031-81, D4084-82 or D3246-81 (or equivalent) for sulfur content of gaseous fuel shall be utilized in accordance with an EPA approved custom fuel monitoring schedule. For the purposes of demonstrating compliance with the emissions caps (Conditions B5 and B6) ~~and for acid rain compliance purposes~~, natural gas and fuel oil supplier data for sulfur content may be submitted or the natural gas sulfur content referenced in 40 CFR 75 Appendix D may be utilized. However, the applicant is responsible for ensuring that the procedures above are used for determination of fuel sulfur content. Analysis may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency pursuant to 40 CFR 60.335 (e) (1997 version).
3. An initial test for CO, concurrent with the initial NO_x test, is required. The initial NO_x and CO test results shall be the average of three valid one-hour runs. The DEP's Northwest District office shall be notified, in writing, at least 30 days prior to the initial compliance tests and at least 15 days before annual compliance test(s). Testing of emissions shall be conducted with the combustion turbine operating at permitted capacity. Permitted capacity is defined as 95-100 percent of the maximum heat input rate allowed by the permit, corrected for the average ambient

SECTION III. SPECIFIC CONDITIONS

air temperature during the test (with 100 percent represented by a curve depicting heat input vs. ambient temperature). If it is impracticable to test at permitted capacity, the source may be tested at less than permitted capacity. In this case, subsequent operation is limited by adjusting the entire heat input vs. ambient temperature curve downward by an increment equal to the difference between the maximum permitted heat input (corrected for ambient temperature) and 105 percent of the value reached during the test until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purposes of additional compliance testing to regain the permitted capacity. Compliance test results shall be submitted to the DEP's Northwest District office no later than 45 days after completion of the last test run.

E. Notification, Reporting and Recordkeeping

1. All measurements, records, and other data required to be maintained by the City of Tallahassee shall be retained for at least five (5) years following the date on which such measurements, records, or data are recorded. These data shall be made available to the DEP representatives.
2. Emission Compliance Stack Test Reports: A test report indicating the results of the required compliance tests shall be filed with the Permitting Authority as soon as practical, but no later than 45 days after the last sampling run is completed. [Rule 62-297.310(8), F.A.C.]. The test report shall provide sufficient detail on the tested emission unit and the procedures used to allow the Department to determine if the test was properly conducted and if the test results were properly computed. At a minimum, the test report shall provide the applicable information listed in Rule 62-297.310(8), F.A.C.

F. Monitoring Requirements

1. The permittee shall install, calibrate, maintain, and operate a continuous emission monitor in the stack to measure and record the nitrogen oxides emissions from this source. Thirty day rolling average periods when NO_x emissions (ppmvd @ 15% oxygen) are above the BACT standards (12/42 ppmvd for gas/oil) shall be reported to the DEP Northwest District Office pursuant to General Condition #8. The continuous emission monitoring systems must comply with the certification and quality assurance, and other applicable requirements from 40 CFR 75. Periods of startup, shutdown, malfunction, and fuel switching shall be monitored, recorded, and reported as excess emissions following the format of 40 CFR 60.7 (1997 version). Subject to EPA approval, the NO_x CEMS will be used in lieu of the water/fuel monitoring system and fuel bound nitrogen (FBN) monitoring, which are required in accordance with 40 CFR 60, Subpart GG (1997 version). Subject to EPA approval, the calibration of the water/fuel monitoring device required in 40 CFR 60.335 (c)(2) (1997 version) will be replaced by the 40 CFR 75 certification tests of the NO_x CEMS.
2. The following custom monitoring schedule for No. 2 fuel oil is approved (pending EPA concurrence). For all bulk shipments of No. 2 fuel oil received at the Purdom Station, an analysis which reports the sulfur content and the fuel bound nitrogen content of the fuel shall be provided by the fuel vendor. The analysis shall also specify the methods by which the analyses were conducted and shall comply with the requirements of 40 CFR 60.335(d).
3. The following custom monitoring schedule for natural gas is approved (pending EPA concurrence) in lieu of the daily sampling requirements of 40 CFR 60.334 (b)(2).
 - a. Monitoring of natural gas nitrogen content shall not be required.
 - b. Analysis of the sulfur content of natural gas shall be conducted using one of the EPA-approved ASTM reference methods for the measurement of sulfur in gaseous fuels, or an approved alternative method. Once

SECTION III. SPECIFIC CONDITIONS

Unit 8 becomes operational, monitoring of the sulfur content of the natural gas shall be conducted semiannually.

- c. Should any sulfur analysis indicate noncompliance with 40 CFR 60.333, the City shall notify DEP of such excess emissions and the customized fuel monitoring schedule shall be reexamined. The sulfur content of the natural gas will be monitored weekly during the interim period while the monitoring schedule is reexamined.
 - d. The City shall notify DEP of any change in natural gas supply for reexamination of this monitoring schedule. A substantial change in natural gas quality (i.e., sulfur content variation of greater than 1 grain per 100 cubic foot of natural gas) shall be considered as a change in the natural gas supply. Sulfur content of the natural gas will be monitored weekly by the natural gas supplier during the interim period when this monitoring schedule is being reexamined.
 - e. Records of sampling analysis and natural gas supply pertinent to this monitoring schedule shall be retained by the City for a period of five years, and shall be made available for inspection by the appropriate regulatory personnel.
 - f. The City shall obtain the sulfur content of the natural gas ~~form~~from the fuel supplier (~~Florida Gas Transmission Company~~) provided the test methods listed in Specific Condition D2 are used.
4. Determination of Process Variables:
- (a) The permittee shall operate and maintain equipment and/or instruments necessary to determine process variables, such as process weight input or heat input, when such data is needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.
 - (b) Equipment and/or instruments used to directly or indirectly determine such process variables, including devices such as belt scales, weigh hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value. [Rule 62-297.310(5), F.A.C]
5. Compliance with the annual facility-wide NO_x cap shall be determined by adding the annual NO_x emissions in tons per year determined by the CEMS required by 40 CFR 75 for Unit 8 along with existing Unit 7 to annual NO_x emissions calculated for existing GT1, GT2 and the auxiliary boiler determined by the following formulas:

GT 1 & GT 2 NO_x(natural gas)= (Fuel Usage)X (Heating Value of Natural Gas) X (0.44 lb/mmBtu) X units conversion factors

Fuel usage shall be measured by fuel meter, recorded daily when unit is operated
Heating value of natural gas will be determined from fuel supplier data
0.44 lb/mmBtu = AP-42 emission factor

GT 1 & GT 2 NO_x (fuel oil)= (Fuel Usage)X (Heating Value of Fuel Oil) X (0.698 lb/mmBtu)

Fuel usage shall be measured by fuel meter, recorded daily when unit is operated
Heating Value of fuel oil will be determined from fuel supplier data
0.698 lb/mmBtu = AP-42 emission factor

AIR CONSTRUCTION PERMIT: PSD-FL-239 / PA97-36

SECTION III. SPECIFIC CONDITIONS

Aux. Boiler NO_x(natural gas)= (Fuel Usage)X (140 lb/mmCF)

Fuel usage shall be measured by flow meter, recorded daily when unit is operated
140 lb/mmCF = AP-42 emission factor

6. Compliance with the annual facility-wide SO₂ cap shall be determined by adding the annual SO₂ emissions in tons per year determined by the CEMS required by 40 CFR 75 for Unit 8 along with existing Unit 7 to annual SO₂ emissions calculated for existing GT1, GT2 and the auxiliary boiler determined by the following formulas:

GT 1 & GT 2 SO₂ Emissions (natural gas)= (Fuel Usage) X (Heating Value of Natural Gas) X (0.0006 lb/mmBtu)

Fuel usage shall be measured by fuel meter, recorded daily when unit is operated
Heating Value of natural gas from fuel supplier data
Sulfur Content default of NADB = 0.0006 lb-SO₂/mmBtu

GT 1 & GT 2 SO₂ Emissions (fuel oil) = (Fuel Usage) X (% Sulfur Content of oil) X (Molecular weight SO₂ / Molecular weight of S) X (Conversion factor)

Fuel usage shall be measured by fuel meter, recorded daily when unit is operated
% Sulfur will be determined from fuel oil analysis each time fuel is delivered (*i.e.*, 0.05% S = 0.0005)
Molecular weight of SO₂ = 64
Molecular weight of S = 32
Conversion factor of 95% = 0.95

Aux. Boiler SO₂ Emissions (natural gas)= (Fuel Usage) X (Heating Value-Rate of Natural Gas) X (0.0006 lb/mmBtu)

Fuel usage shall be measured by Fuel Meter, Recorded Daily when unit is operated
Heating Value of Natural Gas from fuel supplier data
Sulfur Content default of NADB = 0.0006 lb/mmBtu

G. Rule Requirements

- ~~1. The emission unit shall be in compliance with all applicable provisions of Chapter 403, F.S., and Chapters 62-4, 210, 212, 275, 296 and 297, F.A.C., except as otherwise specified herein.~~
21. The emission unit shall be in compliance with all applicable requirements of 40 CFR 60, Subpart A, Appendix A and Appendix B (1997 version), Subpart GG - Standards of Performance for Stationary Gas Turbines (1997 version), and Rule 62-204.800 (7) (b) 38, F.A.C., except as otherwise specified herein. The Subpart GG requirement to correct test data to ISO conditions applies. However, such correction is not used for compliance determinations with the BACT standard(s). All notifications and reports required by this specific condition shall be submitted to the DEP's Northwest District office.
32. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting requirements and regulations (Rule 62-210.300(1), F.A.C.).

AIR CONSTRUCTION PERMIT: PSD-FL-239 / PA97-36

SECTION III. SPECIFIC CONDITIONS

43. Except as otherwise specified herein, the emission unit shall be in compliance with all applicable provisions of Rule 62-210.650, F.A.C.: Circumvention; Rule 62-210.700, F.A.C.: Excess Emissions; Rule 62-204.800 (7) (b) 38, F.A.C.: Standards of Performance for New Stationary Sources (NSPS); Chapter 62-297, F.A.C.: Stationary Sources - Emissions Monitoring; and, Rule 62-4.130, F.A.C.: Plant Operation - Problems.
54. If construction does not commence within 18 months of issuance of this permit, the permittee shall obtain from the DEP's Bureau of Air Regulation a review and, if necessary a modification of the BACT determination and allowable emissions (40 CFR 52.21(r)(2) (1997 version)).
65. Quarterly excess emission reports, in accordance with 40 CFR 60.7 (7) (c) (1997 version), shall be submitted to the DEP's Northwest District office.
76. Pursuant to Rule 62-210.370(2), F.A.C., Annual Operation Reports, the permittee is required to submit annual reports on the actual operating rates and emissions from this facility. Annual operating reports shall be sent to the DEP's Northwest District office by March 1st of each calendar year.
87. Stack sampling facilities shall be installed in accordance with Rule 62-297.310(6), F.A.C.
98. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (Rule 62-4.090, F.A.C.).

H. Modifications

1. The permittee shall give written notification to the Department when there is any modification to this facility. This notice shall be submitted sufficiently in advance of any critical date involved to allow sufficient time for review, discussion, and revision of plans, if necessary. Such notice shall include, but not be limited to, information describing the precise nature of the change; modifications to any emission control system; production capacity of the facility before and after the change; and the anticipated completion date of the change.

Memorandum

Florida Department of Environmental Protection

TO: Clair Fancy

THRU: Al Linero *Al Linero 7/1*

FROM: Martin Costello *MC*

DATE: July 1, 1997

SUBJECT: City of Tallahassee, Purdom Unit 8

Attached is the public notice package and draft PSD permit for the planned Tallahassee Purdom Unit 8. The new unit will replace two small existing boilers with a 160 MW combustion turbine and a 90 MW HRSG. The facility will take emissions caps such that there will not be physical increases in emissions of nitrogen oxides and sulfur dioxide compared to the past two years of operation. However there will be an "actual emissions increase" as defined by the rules based on netting calculations.

Controls consist of Dry Low NOx technology and burning natural gas with 0.05 percent sulfur fuel oil as the backup fuel. The Park Service and EPA have reviewed the application and had no adverse comments.

I recommend your approval and signature.

AAL/mc

Best Available Copy

is your RETURN ADDRESS completed on the re-
 permit.
 ■ Write "Return Receipt Requested" on the mailpiece below the article number.
 ■ The Return Receipt will show to whom the article was delivered and the date delivered.

1. Addressee's Address
 2. Restricted Delivery
 Consult postmaster for fee.

3. Article Addressed to:
 Jannette Curtis, Env. Adm.
 City of Tallahassee Utilit. Serv.
 300 S. Adams Street
 Tallahassee, Fl 32301

4a. Article Number
 P 265 659 236

4b. Service Type
 Registered Certified
 Express Mail Insured
 Return Receipt for Merchandise COD

7. Date of Delivery
 JUL 08 1997

5. Received By: (Print Name)
 Kenneth Geyer

6. Signature: (Addressee or Agent)
 X Kenneth Geyer

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1994

Thank you for using Return Receipt Service

P 265 659 236

US Postal Service
Receipt for Certified Mail
 No Insurance Coverage Provided.
 Do not use for International Mail (See reverse)

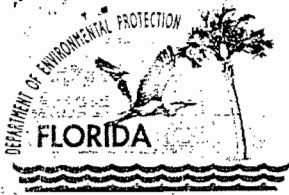
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 Jannette Curtis
 City of Tallahassee
 Tallahassee, FL

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Return Receipt Showing to Whom & Date Delivered
 Return Receipt Showing to Whom, Date, & Addressee's Address

TOTAL Postage & Fees \$
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PS Form 3800, April 1995
 PSD-FI-239
 PA 97-36



Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

July 1, 1997

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Jennette Curtis
Environmental Administrator
City of Tallahassee Utility Services
300 South Adams Street
Tallahassee, Florida 32301

Re: Purdom Unit 8, Combustion Turbine and
Heat Recovery Steam Generator
DRAFT Permit No. PSD-FL-239/PA97-36

Dear Ms. Curtis

Enclosed is one copy of the Draft permit for the Prevention of Significant Deterioration (PSD Permit) for the Purdom Generating Station including the new Unit 8 located at 667 Port Leon Drive, St. Marks, Wakulla, County. The Technical Evaluation and Preliminary Determination, Best Available Control Technology, the Department's Intent to Issue PSD permit and the "PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT" are also included.

The "PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT" must be published within 30 (thirty) days of receipt of this letter. Proof of publication, i.e., newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

Please submit any written comments you wish to have considered concerning the Department's proposed action to A. A. Linero, P.E., Administrator, New Source Review Section at the above letterhead address. If you have any other questions, please contact Martin Costello or Mr. Linero at 904/488-1344.

Sincerely,

A. A. Linero, P.E. 7/1
for C. H. Fancy, P.E., Chief,
Bureau of Air Regulation

CHF/mc

Enclosures

In the Matter of an
Application for Permit by:

City of Tallahassee Utility Services
300 South Adams Street
Tallahassee, FL 32301

DRAFT Permit No.: PSD-FL-239
Power Plant Siting: PA97-36
Purdom Generating Station
Wakulla County

INTENT TO ISSUE PSD PERMIT

The Department of Environmental Protection (Department) gives notice of its intent to issue a permit for the Prevention of Significant Deterioration (copy of DRAFT PSD Permit attached) for the proposed project, detailed in the application specified above and the attached Technical Evaluation and Preliminary Determination, for the reasons stated below.

The applicant, the City of Tallahassee, applied on March 17, 1997 to the Department for a PSD permit and Siting Certification to construct and operate a 250 megawatt combustion turbine and heat recovery steam generator for its Purdom Generating Station located at 667 Port Leon Drive, St. Marks, Wakulla, County.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-212. The above actions are not exempt from permitting procedures. The Department has determined that a PSD permit is required for the proposed work.

The Department intends to issue this PSD permit based on the belief that reasonable assurances have been provided to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C.

Pursuant to Section 403.815, F.S., and Rule 62-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed "PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT". The notice shall be published one time only within 30 (thirty) days in the legal advertisement section of a newspaper of general circulation in the area affected. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. Where there is more than one newspaper of general circulation in the county, the newspaper used must be one with significant circulation in the area that may be affected by the permit. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 904/488-1344; Fax 904/ 922-6979) within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit pursuant to Rule 62-103.150 (6), F.A.C.

The Department will issue the FINAL Permit, in accordance with the conditions of the enclosed DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days from the date of publication of "PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT." Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

Executed in Tallahassee, Florida.

C. H. Fancy, P.E. 7/1
for C. H. Fancy, P.E., Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this INTENT TO ISSUE PSD PERMIT (including the PUBLIC NOTICE, Technical Evaluation and Preliminary Determination, Draft BACT Determination, and the DRAFT permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 7-1-97 to the person(s) listed:

- Ms. Jennette Curtis, City of Tallahassee *
- Mr. Darrel Graziani, P.E.
- Mr. Brian Beals, EPA
- Mr. John Bunyak, NPS
- Mr. Ed Middleswart, NWD
- Mr. Buck Oven, DEP

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52(7), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Kyrie Ober 7-1-97
(Clerk) (Date)

PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DRAFT Permit No.: PSD-FL-239
Power Plant Siting No. PA97-36

City of Tallahassee Utility Services
Purdom Generating Station Unit 8
Wakulla County

The Department of Environmental Protection (Department) gives notice of its intent to issue a permit for the Prevention of Significant Deterioration (PSD permit) to the City of Tallahassee for the Purdom Generating Station proposed Unit 8 located in the City of St. Marks, Wakulla County. A Best Available Control Technology (BACT) determination was required for particulate matter (PM/PM₁₀), sulfur dioxide (SO₂), nitrogen oxides (NO_x) and carbon monoxide (CO) pursuant to Rule 62-212.400, F.A.C. and 40 CFR 52.21. The applicant's name and address are City of Tallahassee Utility Services, 300 South Adams Street, Tallahassee, FL 32301

The City of Tallahassee has applied to construct Unit 8, a 250 megawatt (MW) combined cycle combustion turbine and heat recovery steam generator to replace existing conventional steam generating Units 5 and 6. Emissions control will be accomplished by dry low NO_x burners and use of natural gas, an inherently clean fuel. A new 200 foot stack and a cooling tower will be added to the facility for Unit 8.

Other existing units at the plant consist of Unit 7, a 44 MW steam boiler fired by natural gas and fuel oil, two older combustion turbines with a nominal rating of 12.5 MW each and a small auxiliary steam boiler fired by natural gas. The City has requested a facility-wide emissions cap for nitrogen oxides (NO_x) and sulfur dioxide (SO₂) to ensure that no increase in these emissions will occur once Unit 8 is constructed. Therefore in the future, emissions from the facility, including Unit 8, will be less than or equal to emissions before the addition of Unit 8. Electrical output from this facility will be about three times higher than the current level with the addition of Unit 8.

Total facility-wide annual emissions including those from the project are summarized below:

Pollutants	Current Actual	Future Estimated Emissions	Net Increase
	ton/yr	ton/yr	ton/yr
PM ₁₀	10.7	59.0	48.3
SO ₂	80.0	80.0	0
NO _x	467.0	467.0	0
CO	66.0	193.0	127.0

An air quality impact analysis was conducted. Emissions from the facility will not significantly contribute to or cause a violation of any state or federal ambient air quality standards. The maximum predicted PSD Class II increments of NO₂, SO₂, and PM₁₀ consumed by all sources in the area, including this project, will be as follows:

<u>PSD Class II Increment Consumed (µg/m³)</u>	<u>Allowable Increment (µg/m³)</u>	<u>Percent Increment Consumed</u>
PM₁₀		
24-hour 3.3	31	11
Annual 0.3	17	2
SO₂		
3-hour 14.4	512	3
24-hour 2.4	91	3
Annual 0.0	20	0
NO₂		
Annual 6.2	25	25

IN THE NEWSPAPER

The maximum predicted PSD Class I increments of NO₂, SO₂, and PM₁₀ in the St. Marks National Wilderness Area and the Bradwell Bay National Wilderness Area consumed by all sources in the area, including this project, will be as follows:

<u>PSD Class I Increment Consumed (µg/m³)</u>		<u>Allowable Increment (µg/m³)</u>	<u>Percent Increment Consumed</u>
PM₁₀			
24-hour	0.73	8	9
Annual	0.16	4	4
SO₂			
3-hour	16.9	25	68
24-hour	4.9	5	98
Annual	0.0	2	0
NO₂			
Annual	0.91	2.5	36

The Department will issue the FINAL Permit, in accordance with the conditions of the DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days from the date of publication of this Notice. Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

The issuance of this PSD permit is being coordinated with a certification under the Power Plant Siting Act (Chapter 403.501-519, Florida Statutes). If a petition for an administrative hearing on the preliminary determination and proposed PSD permit is filed by a substantially affected person, that hearing shall be consolidated with the certification hearing, as provided under Section 403.507(3), Florida Statutes.

The Department will issue FINAL Permit with the conditions of the DRAFT Permit unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. or a party requests mediation as an alternative remedy under Section 120.573 before the deadline for filing a petition. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for petitioning for a hearing are set forth below, followed by the procedures for requesting mediation.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 904/488-9370, fax: 904/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition (or a request for mediation, as discussed below) within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the Department's action or proposed action addressed in this notice of intent.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice of intent. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

IN THE NEWSPAPER

A person whose substantial interests are affected by the Department's proposed permitting decision, may elect to pursue mediation by asking all parties to the proceeding to agree to such mediation and by filing with the Department a request for mediation and the written agreement of all such parties to mediate the dispute. The request and agreement must be filed in (received by) the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, by the same deadline as set forth above for the filing of a petition.

A request for mediation must contain the following information: (a) The name, address, and telephone number of the person requesting mediation and that person's representative, if any; (b) A statement of the preliminary agency action; (c) A statement of the relief sought; and (d) Either an explanation of how the requester's substantial interests will be affected by the action or proposed action addressed in this notice of intent or a statement clearly identifying the petition for hearing that the requester has already filed, and incorporating it by reference.

The agreement to mediate must include the following: (a) The names, addresses, and telephone numbers of any persons who may attend the mediation; (b) The name, address, and telephone number of the mediator selected by the parties, or a provision for selecting a mediator within a specified time; (c) The agreed allocation of the costs and fees associated with the mediation; (d) The agreement of the parties on the confidentiality of discussions and documents introduced during mediation; (e) The date, time, and place of the first mediation session, or a deadline for holding the first session, if no mediator has yet been chosen; (f) The name of each party's representative who shall have authority to settle or recommend settlement; and (g) The signatures of all parties or their authorized representatives.

As provided in Section 120.573 F.S., the timely agreement of all parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57 F.S. for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons whose substantial interests will be affected by such modified final decision of the Department have a right to petition for a hearing only in accordance with the requirements for such petitions set forth above. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under Sections 120.569 and 120.57 F.S. remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action and electing remedies under those two statutes.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida, 32301
Telephone: 850/488-1344
Fax: 850/922-6979

Department of Environmental Protection
NW District Office
160 Government Center
Pensacola, Florida 32501
Telephone:(850) 444-8300
Fax: :(850) 444-8417

The complete project file includes the application, technical evaluations, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 904/488-1344, for additional information.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S., or a party requests mediation as an alternative remedy under Section 120.573 F.S. before the deadline for filing a petition. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for petitioning for a hearing are set forth below, followed by the procedures for requesting mediation.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 904/488-9730, fax: 904/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition (or a request for mediation, as discussed below) within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the action or proposed action addressed in this notice of intent.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice of intent. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A person whose substantial interests are affected by the Department's proposed permitting decision, may elect to pursue mediation by asking all parties to the proceeding to agree to such mediation and by filing with the Department a request for mediation and the written agreement of all such parties to mediate the dispute. The request and agreement must be filed in (received by) the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, by the same deadline as set forth above for the filing of a petition.

A request for mediation must contain the following information: (a) The name, address, and telephone number of the person requesting mediation and that person's representative, if any; (b) A statement of the preliminary agency action; (c) A statement of the relief sought; and (d) Either an explanation of how the requester's substantial interests will be affected by the action or proposed action addressed in this notice of intent or a statement clearly identifying the petition for hearing that the requester has already filed, and incorporating it by reference.

The agreement to mediate must include the following: (a) The names, addresses, and telephone numbers of any persons who may attend the mediation; (b) The name, address, and telephone number of the mediator selected by the parties, or a provision for selecting a mediator within a specified time; (c) The agreed allocation of the costs and fees associated with the mediation; (d) The agreement of the parties on the confidentiality of discussions and

documents introduced during mediation; (e) The date, time, and place of the first mediation session, or a deadline for holding the first session, if no mediator has yet been chosen; (f) The name of each party's representative who shall have authority to settle or recommend settlement; and (g) The signatures of all parties or their authorized representatives.

As provided in Section 120.573 F.S., the timely agreement of all parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57 F.S. for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons whose substantial interests will be affected by such modified final decision of the Department have a right to petition for a hearing only in accordance with the requirements for such petitions set forth above. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under Sections 120.569 and 120.57 F.S. remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action and electing remedies under those two statutes.

In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2) F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

DRAFT PSD PERMIT CONDITIONS

General Conditions

Same as always.

Specific Conditions:

Purdom Unit 8

The construction and operation of the City of Tallahassee Purdom Unit 8, a combined cycle combustion turbine, shall be in accordance with all applicable provisions of Chapters 62-210 through 297 and 62-4, Florida Administrative Code (F.A.C.), and 40 CFR 60 Subparts A and GG (1997 version). The following emission limitations and conditions reflect the BACT determinations for Purdom Unit 8. In addition to the foregoing, the project shall comply with the following conditions:

A. General Operation Requirements

1. The maximum heat input rates, based on the lower heating value (LHV) of each fuel to Purdom Unit 8 at ambient conditions of 95°F temperature, 60% relative humidity, and 14.7 psi pressure shall not exceed 1,467.7 mmBtu/hr when firing natural gas, nor 1,659.5 mmBtu/hr when firing No. 2 fuel oil. These maximum heat input rates will vary depending upon ambient conditions and the combustion turbine characteristics. Manufacturer's curves or equations for correction to other ambient conditions shall be provided to the Department of Environmental Protection (DEP) at least 90 days prior to initial compliance testing. These curves or equations shall be used to establish the maximum allowable heat inputs at other ambient conditions for compliance determinations.
2. Purdom Unit 8 may operate continuously (i.e., 8760 hours per year).
3. Only natural gas or No. 2 fuel oil with a maximum sulfur content of 0.05% by weight shall be fired in the combined cycle combustion turbine.
4. The permittee shall install duct module(s) suitable for possible future installation of an oxidation catalyst and/or SCR equipment on the combined cycle generating unit.
5. Dry low NO_x combustors shall be used on Unit 8 when firing natural gas and water injection shall be used when firing No. 2 fuel oil for control of NO_x emissions.
6. During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary.

B. Emission Limits and Standards

The following shall apply upon completion of the initial compliance tests:

1. Best Available Control Technology. The following is a summary of the BACT determinations by DEP:

Pollutant	Fuel	BACT Standard
NO _x	Gas	12 ppmvd (a) (d)
	Oil	42 ppmvd (a) (b) (d)
SO ₂	Gas	Good combustion
	Oil	Good combustion of low (0.05%) sulfur fuel oil
PM/PM ₁₀ (d)	Gas	Good combustion
	Oil	Good combustion of low (0.05%) sulfur fuel oil
Visible Emissions	Gas	10 percent opacity
	Oil	10 percent opacity
CO	Gas	25 ppmvd (c) (d)
	Oil	90 ppmvd (c) (d)
(a) 30-day rolling average. (b) Plus an allowance for fuel bound nitrogen using the formula provided in Condition B4. (c) 3-hour blocked average. (d) Not corrected to ISO conditions.		

- Visible Emissions. Visible emissions shall not exceed 10 percent opacity when firing either natural gas or No. 2 fuel oil.
- Oxides of Nitrogen. Oxides of nitrogen emissions when firing natural gas shall not exceed 12 ppmvd at 15% O₂ on a 30-day rolling average basis (except during periods of startup, shutdown, malfunction or fuel switching), as measured by applicable compliance measures.
- Oxides of Nitrogen. Oxides of nitrogen emissions when firing No. 2 fuel oil shall not exceed 42 ppmvd at 15% O₂ on a 30-day rolling average basis (except during periods of startup, shutdown, malfunction or fuel switching), as measured by applicable compliance measures, when fuel bound nitrogen values are less than or equal to 0.015 percent. For higher fuel bound nitrogen values (up to 0.03 percent), oxides of nitrogen shall be limited by the following formula:

$$\text{STD} = 0.0042 + F \text{ where:}$$

STD = allowable NO_x emissions (percent by volume at 15 percent O₂ and on a dry basis).

F = NO_x emission allowance for fuel-bound nitrogen defined by the following table:

Fuel-Bound Nitrogen (% by Weight)	F (NO_x % by Volume)
0 < N ≤ 0.015	0
0.015 < N ≤ 0.03	0.04 (N-0.015)

where: N = the nitrogen content of the fuel (% by weight).

5. Oxides of Nitrogen. Annual emissions of NO_x shall not exceed 467 tons per year from the Purdom facility (Unit 8, Unit 7, GT1, GT2, and the auxiliary boiler) on a calendar year basis, as measured by applicable compliance methods.
6. Sulfur Dioxide. Annual emissions of SO₂ shall not exceed 80 tons per year from the Purdom facility (Unit 8, Unit 7, GT1, GT2, and the auxiliary boiler) on a calendar year basis, as measured by applicable compliance methods.
7. Carbon Monoxide. Carbon monoxide emissions when firing natural gas shall not exceed 25 ppmvd on a 3-hour blocked average basis (except during periods of startup, shutdown, malfunction or fuel switching), as measured by applicable compliance methods.
8. Carbon Monoxide. Carbon monoxide emissions when firing No. 2 fuel oil shall not exceed 90 ppmvd on a 3-hour blocked average basis (except during periods of startup, shutdown, malfunction or fuel switching), as measured by applicable compliance methods.

C. Excess Emissions

1. Excess emissions resulting from startup, shutdown, malfunction or fuel switching shall be permitted provided that best operational practices are adhered to and the duration of excess emissions shall be minimized but in no case exceed four hours in any 24-hour period for cold startup or two hours in any 24-hour period for other reasons unless specifically authorized by DEP for longer duration.
2. Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown or malfunction shall be prohibited pursuant to Rule 62-210.700, F.A.C.

D. Compliance Determination

1. Compliance with the allowable emission limiting standards shall be determined within 60 days after achieving the maximum production rate at which this unit will be operated, but not later than 180 days of initial operation of the unit and annually thereafter, by using the following reference methods as described in 40 CFR 60, Appendix A (1997 version), and adopted by reference in Chapter 62-297, F.A.C.

Initial (I) compliance tests shall be performed on Unit 8 while firing each fuel (gas, oil).

Annual (A) compliance tests shall be performed during every federal fiscal year (October 1 - September 30) pursuant to Rule 62-297.340, F.A.C., on Unit 8.

- Method 9 Visual Determination of the Opacity of Emissions from Stationary Sources (I, A); annual on oil if greater than 400 hours of oil firing; however, testing on gas is required only once every five years.
- Method 10 Determination of Carbon Monoxide Emissions from Stationary Sources (I, A).
- Method 20 Determination of Oxides of Nitrogen and diluent emissions from Stationary Gas Turbines (I only, for compliance with 40 CFR 60 Subpart GG)

- 40 CFR 75 Determination of Oxides of Nitrogen emissions will be by a Continuous Emissions Monitoring System (CEMs).(Continuous Method of Compliance)

Note: No other methods may be used for compliance testing unless prior DEP approval is received in writing. The DEP may request a special compliance test pursuant to Rule 62-297.340(2), F.A.C., when, after investigation (such as complaints, increased visible emissions, or questionable maintenance of control equipment), there is reason to believe that any applicable emission standard is being violated.

2. Notwithstanding the requirements of Rule 62-297.340, F.A.C., the exclusive use of fuel oil with a maximum sulfur content limit of 0.05% or less, by weight, is the method for determining compliance for SO₂ and PM₁₀. For the purposes of demonstrating compliance with 40 CFR 60.333 SO₂ emission limit and the 0.05% S limit, fuel oil analysis using ASTM D2880-71 or D4294 (or equivalent) for the sulfur content of liquid fuels and D1072-80, D3031-81, D4084-82 or D3246-81 (or equivalent) for sulfur content of gaseous fuel shall be utilized in accordance with an EPA approved custom fuel monitoring schedule. For the purposes of demonstrating compliance with the emissions caps (Conditions B4 and B5) and for acid rain compliance purposes, natural gas and fuel oil supplier data for sulfur content may be submitted or the natural gas sulfur content referenced in 40 CFR 75 Appendix D may be utilized. However, the applicant is responsible for ensuring that the procedures above are used for determination of fuel sulfur content. Analysis may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency pursuant to 40 CFR 60.335 (e) (1997 version).
3. An initial test for CO, concurrent with the initial NO_x test, is required. The initial NO_x and CO test results shall be the average of three valid one-hour runs. The DEP's Northwest District office shall be notified, in writing, at least 30 days prior to the initial compliance tests and at least 15 days before annual compliance test(s). Testing of emissions shall be conducted with the combustion turbine operating at permitted capacity. Permitted capacity is defined as 95-100 percent of the maximum heat input rate allowed by the permit, corrected for the average ambient air temperature during the test (with 100 percent represented by a curve depicting heat input vs. ambient temperature). If it is impracticable to test at permitted capacity, the source may be tested at less than permitted capacity. In this case, subsequent operation is limited by adjusting the entire heat input vs. ambient temperature curve downward by an increment equal to the difference between the maximum permitted heat input (corrected for ambient temperature) and 105 percent of the value reached during the test until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purposes of additional compliance testing to regain the permitted capacity. Compliance test results shall be submitted to the DEP's Northwest District office no later than 45 days after completion of the last test run.

E. Notification, Reporting and Recordkeeping

1. All measurements, records, and other data required to be maintained by the City of Tallahassee shall be retained for at least five (5) years following the date on which such

measurements, records, or data are recorded. These data shall be made available to the DEP representatives.

F. Monitoring Requirements

1. The permittee shall install, calibrate, maintain, and operate a continuous emission monitor in the stack to measure and record the nitrogen oxides emissions from this source. Thirty day rolling average periods when NO_x emissions (ppmvd @ 15% oxygen) are above the BACT standards (12/42 ppmvd for gas/oil) shall be reported as excess emissions following the format of 40 CFR 60.7 (1997 version). The continuous emission monitor must comply with 40 CFR 75. Periods of startup, shutdown, malfunction, and fuel switching shall be monitored and recorded. The NO_x CEMS will be used in lieu of the water/fuel monitoring system and fuel bound nitrogen (FBN) monitoring, which are required in accordance with 40 CFR 60, Subpart GG (1997 version), and are used as indicators of compliance with the NO_x standard specified in the subpart. Since the NO_x emission standard from Subpart GG is more than twice the BACT standard, monitoring for emissions in excess of the BACT limits using the NO_x CEMS is more stringent. FBN levels are not required for excess emission reports when excess emissions are reported and based on the stack monitoring system. The calibration of the water/fuel monitoring device required in 40 CFR 60.335 (c)(2) (1997 version) will be replaced by certification tests of the NO_x CEMS.
2. The following custom monitoring schedule for No. 2 fuel oil is approved (pending EPA concurrence). For all bulk shipments of No. 2 fuel oil received at the Purdom Station, an analysis which reports the sulfur content and the fuel bound nitrogen content of the fuel shall be provided by the fuel vendor. The analysis shall also specify the methods by which the analyses were conducted and shall comply with the requirements of 40 CFR 60.335(d).
3. The following custom monitoring schedule for natural gas is approved (pending EPA concurrence) in lieu of the daily sampling requirements of 40 CFR 60.334 (b)(2).
 - a. Monitoring of natural gas nitrogen content shall not be required.
 - b. Analysis of the sulfur content of natural gas shall be conducted using one of the EPA-approved ASTM reference methods for the measurement of sulfur in gaseous fuels, or an approved alternative method. Once Unit 8 becomes operational, monitoring of the sulfur content of the natural gas shall be conducted semiannually.
 - c. Should any sulfur analysis indicate noncompliance with 40 CFR 60.333, the City shall notify DEP of such excess emissions and the customized fuel monitoring schedule shall be reexamined. The sulfur content of the natural gas will be monitored weekly during the interim period while the monitoring schedule is reexamined.
 - d. The City shall notify DEP of any change in natural gas supply for reexamination of this monitoring schedule. A substantial change in natural gas quality (i.e., sulfur content variation of greater than 1 grain per 100 cubic foot of natural gas) shall be considered as a change in the natural gas supply. Sulfur content of the natural gas will be monitored weekly by the natural gas supplier during the interim period when this monitoring schedule is being reexamined.

- e. Records of sampling analysis and natural gas supply pertinent to this monitoring schedule shall be retained by the City for a period of five years, and shall be made available for inspection by the appropriate regulatory personnel.
 - f. The City shall obtain the sulfur content of the natural gas from the fuel supplier (Florida Gas Transmission Company).
4. Compliance with the annual facility-wide NO_x cap shall be determined by adding the annual NO_x emissions in tons per year determined by the CEMS required by 40 CFR 75 for Unit 8 along with existing Unit 7 to annual NO_x emissions calculated for existing GT1, GT2 and the auxiliary boiler determined by the following formulas:

GT 1 & GT 2 NO_x (natural gas)= (Fuel Usage)X (Heating Value of Natural Gas) X (0.44 lb/mmBtu)

Fuel usage shall be measured by fuel meter, recorded daily when unit is operated
 Heating value of natural gas will be determined from fuel supplier data
 0.44 lb/mmBtu = AP-42 emission factor

GT 1 & GT 2 NO_x (fuel oil)= (Fuel Usage)X (Heating Value of Fuel Oil) X (0.698 lb/mmBtu)

Fuel usage shall be measured by fuel meter, recorded daily when unit is operated
 Heating Value of fuel oil will be determined from fuel supplier data
 0.698 lb/mmBtu = AP-42 emission factor

Aux. Boiler NO_x (natural gas)= (Fuel Usage)X (140 lb/mmCF)

Fuel usage shall be measured by flow meter, recorded daily when unit is operated
 140 lb/mmCF = AP-42 emission factor

5. Compliance with the annual facility-wide SO₂ cap shall be determined by adding the annual SO₂ emissions in tons per year determined by the CEMS required by 40 CFR 75 for Unit 8 along with existing Unit 7 to annual SO₂ emissions calculated for existing GT1, GT2 and the auxiliary boiler determined by the following formulas:

GT 1 & GT 2 SO₂ Emissions (natural gas)= (Fuel Usage) X (Heating Value of Natural Gas) X (0.0006 lb/mmBtu)

Fuel usage shall be measured by fuel meter, recorded daily when unit is operated
 Heating Value of natural gas from fuel supplier data
 Sulfur Content default of NADB = 0.0006 lb-SO₂/mmBtu

GT 1 & GT 2 SO₂ Emissions (fuel oil) = (Fuel Usage) X (% Sulfur Content of oil) X (Molecular weight SO₂ / Molecular weight of S) X (Conversion factor)

Fuel usage shall be measured by fuel meter, recorded daily when unit is operated

% Sulfur will be determined from fuel oil analysis each time fuel is delivered

Molecular weight of SO₂ = 64

Molecular weight of S = 32

Conversion factor of 95% = 0.95

Aux. Boiler SO₂ Emissions (natural gas)= (Fuel Usage) X (Heat Rate of Natural Gas) X (0.0006 lb/mmBtu)

Fuel usage shall be measured by Fuel Meter, Recorded Daily when unit is operated

Heating Value of Natural Gas from fuel supplier data

Sulfur Content default of NADB = 0.0006 lb/mmBtu

G. Rule Requirements

1. The emission unit shall be in compliance with all applicable provisions of Chapter 403, F.S., and Chapters 62-4, 210, 212, 275, 296 and 297, F.A.C., except as otherwise specified herein.
2. The emission unit shall be in compliance with all applicable requirements of 40 CFR 60, Subpart A, Appendix A and Appendix B (1997 version), Subpart GG - Standards of Performance for Stationary Gas Turbines (1997 version), and Rule 62-204.800 (7) (b) 38, F.A.C., except as otherwise specified herein. The Subpart GG requirement to correct test data to ISO conditions applies. However, such correction is not used for compliance determinations with the BACT standard(s). All notifications and reports required by this specific condition shall be submitted to the DEP's Northwest District office.
3. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting requirements and regulations (Rule 62-210.300(1), F.A.C.).
4. Except as otherwise specified herein, the emission unit shall be in compliance with all applicable provisions of Rule 62-210.650, F.A.C.: Circumvention; Rule 62-210.700, F.A.C.: Excess Emissions; Rule 62-204.800 (7) (b) 38, F.A.C.: Standards of Performance for New Stationary Sources (NSPS); Chapter 62-297, F.A.C.: Stationary Sources - Emissions Monitoring; and, Rule 62-4.130, F.A.C.: Plant Operation - Problems.
5. If construction does not commence within 18 months of issuance of this permit, the permittee shall obtain from the DEP's Bureau of Air Regulation a review and, if necessary a modification of the BACT determination and allowable emissions (40 CFR 52.21(r)(2) (1997 version)).
6. Quarterly excess emission reports, in accordance with 4 CFR 60.7 (7) (c) (1997 version), shall be submitted to the DEP's Northwest District office.

7. Pursuant to Rule 62-210.370(2), F.A.C., Annual Operation Reports, the permittee is required to submit annual reports on the actual operating rates and emissions from this facility. Annual operating reports shall be sent to the DEP's Northwest District office by March 1st of each calendar year.
8. Stack sampling facilities shall be installed in accordance with Rule 62-297.345, F.A.C.
9. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (Rule 62-4.090, F.A.C.).

H. Modifications

1. The permittee shall give written notification to the Department when there is any modification to this facility. This notice shall be submitted sufficiently in advance of any critical date involved to allow sufficient time for review, discussion, and revision of plans, if necessary. Such notice shall include, but not be limited to, information describing the precise nature of the change; modifications to any emission control system; production capacity of the facility before and after the change; and the anticipated completion date of the change.



CITY HALL
300 S. ADAMS ST.
TALLAHASSEE, FL
32301-1731
904/891-0010
TDD 1-800/955-8771

SCOTT MADDOX
Mayor
STEVE MEISBURG
Mayor Pro Tem

JOHN PAUL BAILEY
Commissioner
DEBBIE LIGHTSEY
Commissioner
RON WEAVER
Commissioner

ANITA R. FAVORS
City Manager
ROBERT B. INZER
City Treasurer-Clerk

JAMES R. ENGLISH
City Attorney
RICARDO FERNANDEZ
City Auditor

June 25, 1997

HAND DELIVERED

Mr. Al Linero
Bureau of Air Regulation
Florida Department of Environmental Protection
Mail Station #5505
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RECEIVED
JUN 25 1997
BUREAU OF
AIR REGULATION

**Re: City of Tallahassee Sam O. Purdom Generating Station
PSD Permit Conditions**

Dear Mr. Costello:

On June 19, 1997, the City of Tallahassee met with the Department to discuss draft specific conditions for the Purdom Unit No. 8 Project. We would like to thank Department for taking time to meet with us to discuss the permitting of Unit No. 8. Most particularly, we appreciate the Department's receptiveness to comments detailed by the City and the encouragement to submit draft condition language for consideration by the Department. As such, we thought it may be most helpful to forward a draft of specific conditions that the City is expecting to see in the permit. For your convenience, we have incorporated the format utilized by FDEP in previously-issued PSD permits and have included an electronic copy of the conditions.

It should be noted that the attached document excludes malfunction from the 12 ppmvd 30-day rolling average limit on oxides of nitrogen (NO_x). In support of this exclusion, the City would like to emphasize that malfunctions will be restricted by other regulatory means. Pursuant to Rule 62-210.700(1), F.A.C., malfunctions are restricted to two hours in any 24-hour period. Further restrictions will be inherent through establishing a facility-wide cap (inclusive of malfunctions) of 467 tons of NO_x per year. Furthermore, the City has consulted with its design contractor and understands that uncertainties associated with malfunctions further support the City's need to exclude malfunctions from the NO_x limit. Thus, the City requests that the Department consider the reasons outlined above and the Departments historical practice of excluding malfunctions from NO_x limits as the conditions of certification are being drafted.

If you have any questions regarding the draft conditions of certification, please feel free to contact me at (904) 891-8850.

Sincerely,

A handwritten signature in black ink that reads "Karl Bauer for". The signature is written in a cursive style and is positioned above the typed name of the signatory.

Jennette Curtis
Environmental Administrator

JC/kb

Attachments

cc: Clair Fancy, FDEP
Martin Costello, FDEP
Rob McGarrah, COT
Gordon King, COT
Karl Bauer, COT



CITY HALL
300 S. ADAMS ST.
TALLAHASSEE, FL
32301-1731
904/891-0010
TDD 1-800/955-8771

SCOTT MADDOX
Mayor
STEVE MEISBURG
Mayor Pro Tem

JOHN PAUL BAILEY
Commissioner
DEBBIE LIGHTSEY
Commissioner
RON WEAVER
Commissioner

ANITA R. FAVORS
City Manager
ROBERT B. INZER
City Treasurer-Clerk

JAMES R. ENGLISH
City Attorney
RICARDO FERNANDEZ
City Auditor

April 28, 1997

Hand Delivered

Mr. Cleve Holladay
New Source Review Section
Bureau of Air Regulation
Division of Air Resources Management
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RECEIVED

APR 29 1997

**BUREAU OF
AIR REGULATION**

Dear Mr. Holladay:

Subject: City of Tallahassee
Purdom Unit 8 Project
Supplemental NO₂ Modelling

In response to your request during a discussion with Messrs. Doug Fulle and Mike Bilello of Foster Wheeler Environmental on Monday, April 21, 1997, this letter provides the results of a supplemental modelling analysis of short-term nitrogen dioxide (NO₂) impacts due to the Purdom Unit 8 Project. As you recall, you questioned the basis of the short-term NO₂ concentrations used in the Air Quality Related Values (AQRV) portion of the Prevention of Significant Deterioration (PSD) report.

Please be aware that the short-term results presented in the AQRV portion of the PSD report were based on simply scaling the results of the annual modelling for NO₂ using standard factors (i.e., 0.9 for 3-hr, 0.7 for 8-hr, 0.4 for 24-hr, and 0.05 for annual, when compared to a 1-hr value). Thus, the 1-hr concentration was estimated by multiplying the annual value (including a background concentration) by 20 (i.e., 1/0.05), the 3-hr was the annual multiplied by 18 (i.e., 0.9/0.05), etc. Also, please note that the annual impact-value was computed using the facility wide cap for the whole Purdom Station (i.e., 467 tons per year converted to grams/second) rather than a 9 parts per million by volume, dry (ppmvd) emission rate for Unit 8 alone.

At your suggestion we have conducted a supplemental analysis for NO₂ using maximum short-term emission rates instead of the annual facility wide cap. We assumed that Unit 7 and the two existing combustion turbines (GT1 and GT2) would be operating at full load on No. 6 fuel oil and diesel fuel, respectively. We also assumed that the proposed Unit 8 was operating on diesel fuel at 42 ppmvd at its worst case impact load (50% load at 20°F).

We did not model an emission rate of 97 ppmvd (allowed under the New Source Performance Standards (NSPS)) as the Unit will not actually operate at this level for either fuel. Also included in the modelling were the other existing sources included in the ambient air quality standards (AAQS) emission inventory for NO_x. Since there are no short-term background concentrations available, the annual background value of 14 micrograms per cubic meter (ug/m³) was scaled up using the ratios indicated above; I'm sure you will agree that this is a very conservative approach.

The ISCST3 model was run using the same five years of meteorological data and coarse grid receptors as were used in the PSD report. After the five years of modelling were completed, a fine grid was modelled for each averaging period. A figure depicting the receptor locations is attached.

The results of the modelling analysis are summarized in the attached table. The sum of the highest second-high modelled NO₂ impact plus the scaled background NO₂ concentration was compared with the low end of the vegetation threshold range for each averaging period. As indicated, all predicted total concentrations are below the respective thresholds. Please note that the 1-hr threshold value is 18,800 ug/m³ rather than the 1,880 ug/m³ indicated in the PSD report. This was a typographical error and will be corrected when we issue errata to the Site Certification Application. As you can see, while the results of modelling the individual sources are different from those produced by the scaling analysis presented in the PSD report, the conclusions are the same. No impacts on vegetation are anticipated. As you can also see, even if a 97 ppmvd emission rate had been used for Unit 8, the conclusions of the analysis would be the same.

We trust that this supplemental analysis is helpful. Enclosed is a disk containing a file which, when unzipped, will contain the input and output files used in the analysis. Please call me at (904) 891-8850 should you have any questions.

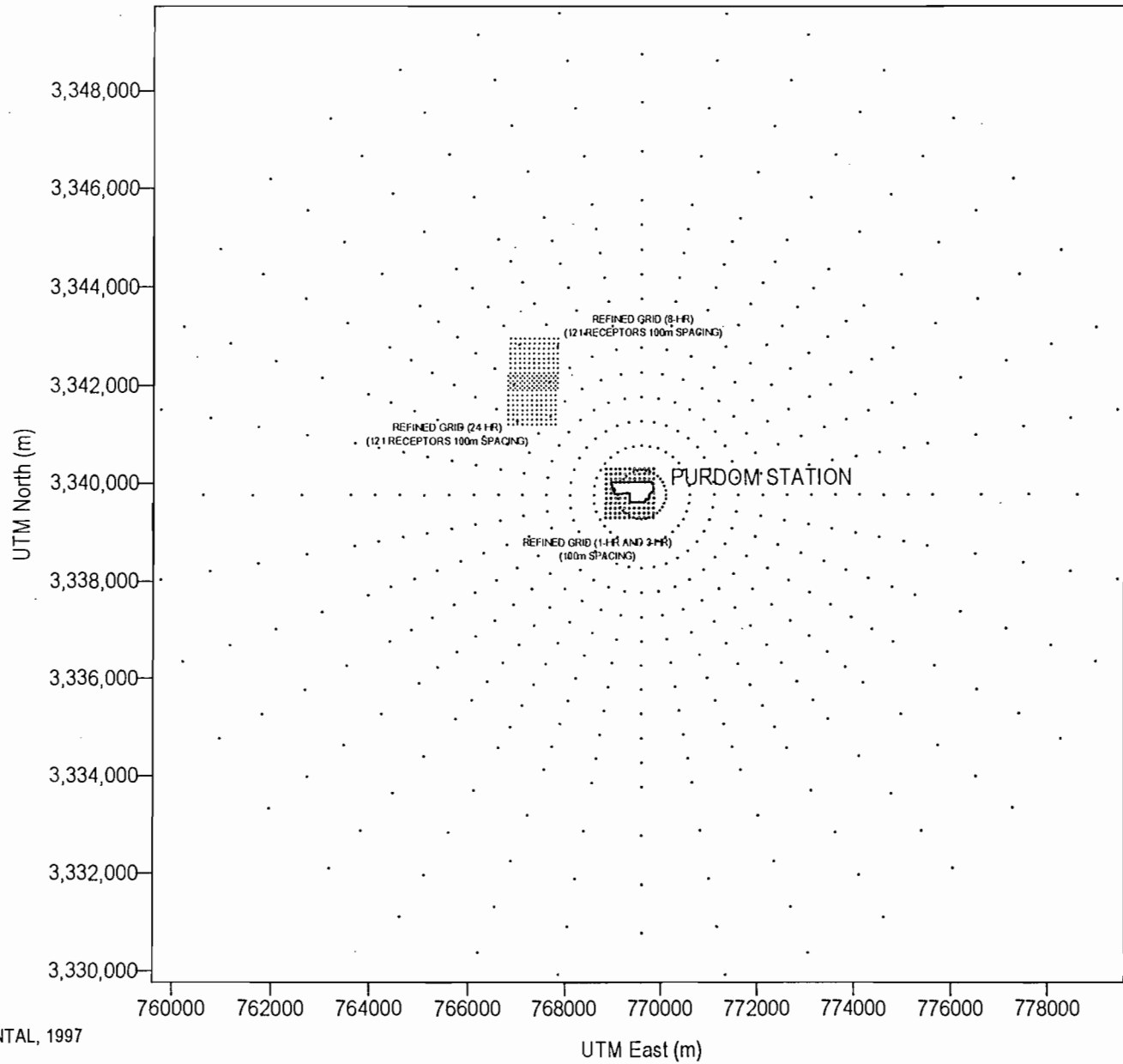
Sincerely,



Jennette Curtis
Environmental Administrator

Enclosures

cc. H. Owen(FDEP)
M. Costello(FDEP)
E. Porter (USFWS)
D. Wergowske(USFS)
R. McGarrah(COT)



SOURCE: FOSTER WHEELER ENVIRONMENTAL, 1997



CITY OF TALLAHASSEE

PURDOM UNIT 8 PROJECT - ST MARKS, FLORIDA

NO2 SHORT TERM

REFINED GRID - ISCST3 MODELLING RECEPTORS

SUPPLEMENTAL ANALYSIS: NITROGEN DIOXIDE IMPACTS VERSUS VEGETATION THRESHOLDS

Pollutant	Avg Period	Max ⁽¹⁾ Refined Conc (µg/m ³)	Background (µg/m ³) ⁽²⁾	Modelled + Background (µg/m ³)	Vegetation Min Threshold Range ⁽³⁾ (µg/m ³)	Period (ymmddhh)	Receptor Location ⁽⁴⁾		Preliminary Maximum ⁽¹⁾ Concentration by Year				
							East (m)	North (m)	1985 (µg/m ³)	1986 (µg/m ³)	1987 (µg/m ³)	1988 (µg/m ³)	1989 (µg/m ³)
Nitrogen Dioxide (NO ₂)	Annual ⁽⁵⁾	21.4	14	35	94	87	767511	3341895	5.1	7.4	10.4	9.1	6.8
Nitrogen Dioxide (NO ₂)	24-hr	102.3	112	214	1880	86111324	767511	3341695	38.8	67.4	66.0	59.1	44.0
Nitrogen Dioxide (NO ₂)	8-hr	162.9	196	359	4324	86072916	767460	3334348	79.2	126.8	105.3	112.2	85.1
Nitrogen Dioxide (NO ₂)	3-hr	718.3	252	970	22560	85090112	769362	3339793	718.3	191.1	155.8	194.1	137.8
Nitrogen Dioxide (NO ₂)	1-hr	1500.0	280	1780	18800	85090115	769362	3339793	1500.0	252.4	251.3	239.9	256.6

⁽¹⁾ Short-term values are highest second high values for this analysis.

⁽²⁾ Short-term values ratioed from annual value.

⁽³⁾ Vegetation thresholds from Section 8.3.1.3 of the PSD Report.

⁽⁴⁾ Unit 8 stack location 769,611 m East 3,339,767 m North.

⁽⁵⁾ Annual values were not run as they were and continue to be based on the facility wide cap emissions. Thus, they are the same values as in Table 7-10 of the PSD Report.

Source: Foster Wheeler Environmental, 1997

~5 times background

shut down units w
1986?



ELECTRIC OPERATIONS
2602 JACKSON BLUFF RD.
TALLAHASSEE, FL 32304

SCOTT MADDOX
Mayor
STEVE MEISBURG
Mayor Pro Tem

JOHN PAUL BAILEY
Commissioner
DEBBIE LIGHTSEY
Commissioner
RON WEAVER
Commissioner

ANITA R. FAVORS
City Manager
ROBERT B. INZER
City Treasurer-Clerk

JAMES R. ENGLISH
City Attorney
RICARDO FERNANDEZ
City Auditor

~~OK AIR~~
June 2, 1997
~~AL~~ **RECEIVED**
~~Harvey~~ JUN 04 1997
~~Clare~~ DIVISION OF AIR
~~Heather~~ RESOURCES MANAGEMENT
Kim - To Purdom & files.

CERTIFIED MAIL

Mr. Howard Rhodes, Director
Division of Air Resources Management
Florida Department of Environmental Protection
2600 Blair Stone Road
Mail Stop 5500
Tallahassee, Florida 32399-2400

**Re: Actual Startup Notification
Auxiliary Boiler - Construction Permit No. 1290001-002-AC
Sam O. Purdom Generating Station**

Dear Mr. Rhodes:

This letter is being provided to inform you of the actual startup date in accordance with Chapter 40 of the Code of Federal Regulations (CFR) Part 60.7(a), as adopted by reference in 62-204.800, Florida Administrative Code (FAC). The City of Tallahassee initiated startup on May 31, 1997, of the above-referenced emission unit at the Sam O. Purdom Generating Station located at 667 Port Leon Drive, St. Marks, Wakulla County, Florida. The emission unit is a 16.74 million British thermal units per hour (mmBtu/hr) natural gas-fired auxiliary boiler subject to regulation under 40 CFR Part 60, Subpart Dc, as adopted by reference in 62-204.800, FAC.

If you have any questions regarding this anticipated startup notification, please feel free to contact either myself at (904) 891-5534 or Ms. Jennette Curtis at (904) 891-8850.

Yours Truly,

Robert McGarrath, Superintendent
Electric Production Division

cc: Johnathan K. Holtom, DEP
Winston A. Smith, EPA Region IV
B. Cowart, COT
G. King, COT
J. D. Curtis, COT

RECEIVED

JUN 05 1997

BUREAU OF
AIR REGULATION

CITY OF TALLAHASSEE
 UTILITY ENVIRONMENTAL
 SUPPORT SERVICES
 FACSIMILE COVER SHEET

DATE: 5/9/97

922-6979

TO: ~~Al Linero, Cleve Holladay~~

488-

FROM: Jennette D. Curtis, Environmental Services Administrator
 TELEPHONE NO: (904) 891-8850

SUBJECT: U. S. Department of Agriculture Letter

Copy - Marty
Original to Tallahassee
Pardon & file

Attached please find a copy of the letter I promised to send you during our recent meeting.

For questions regarding this fax please call: Environmental Affairs at (904) 891-8852, Fax (904) 891-8277



United States
Department of
Agriculture

Forest
Service

National
Forests in
Florida

Suite F-100
325 John Knox Road
Tallahassee, FL 32303
(904) 942-9300



File Code: 2580

97 MAY -5 PM 3:41

Date: MAY 02 1997

Ms. Jennette Curtis
City of Tallahassee
300 S. Adams Street
Tallahassee, FL 32301-1731


Dear Ms. Curtis:

We have received the PSD Application, Purdom Unit 8 Site Certification Application - Volume 3, that you sent on March 31. Our review of the document shows that the project has been developed very much as described in previous discussions.

Essentially, the project replaces older equipment with that of more recent technology, thereby providing a significant increase in generating capacity while increasing PM10 emissions only slightly and, holding NOx and SOx emissions at current levels. The technology employed to control PSD significant pollutants from the facility is consistent with new source performance standards established by the U.S. Environmental Protection Agency for areas where existing air quality surpasses national standards.

We appreciate your effort to involve the Forest Service so early in the development of this project. We have no additional comments or questions at this time.

Sincerely,


KARL P. SIDERITS
Forest Supervisor



Caring for the Land and Serving People





Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

May 6, 1997

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Robert E. McGarrah, Production Superintendent
City of Tallahassee, Electric Utility
2602 Jackson Bluff Road
Tallahassee, Florida 32304

Re: Title V Permit Revision Application for Unit Number 8
File No.: 1290001-003-AV
Sam O. Purdom Generating Station, Wakulla County

Dear Mr. McGarrah:


The application for revision to the Title V permit for the Sam O. Purdom Generating Station received on March 7, 1997, submitted with the Site Certification application, can not be further acted upon until the Prevention of Significant Deterioration (PSD)/New Source Review (NSR) construction permit has been finalized.

The processing of this application will continue when the Title V Section receives a written notification from the City of Tallahassee stating that the PSD/NSR construction permit has been issued in its final version and that a copy of this final permit has been provided to the Title V Section.

If the PSD/NSR permit is not finalized within ninety days of receipt of this letter, a request for additional time to process the Title V operation permit revision request needs to be made pursuant to Rule 62-213.420(1)(b)6., F.A.C.

If you should have any questions, please contact Jonathan Holtom or me at (904) 488-1344.

Sincerely,


Scott M. Sheplak, P.E.
Administrator
Title V Section

SMS/jh


CC: Mr. Darrel Graziani, P.E., Foster Wheeler Environmental Corporation
Mr. Karl Baur, P.E., City of Tallahassee
Mr. Ed Middleswart, DEP, Northwest District Office
Mr. Gerry Neubauer, DEP, Northwest District Branch Office
Mr. Buck Oven, DEP, Power Plant Siting Office
Mr. Al Linero, DEP, PSD/New Source Review Section ✓

"Protect, Conserve and Manage Florida's Environment and Natural Resources"

Florida Department of
Environmental Protection

Memorandum

TO: Buck Oven, Siting Coordination Office

THROUGH: Al Linero 

FROM: Martin Costello ^{nic}

DATE: April 21, 1997

SUBJECT: City of Tallahassee
Purdom Generating Station, Unit 8
Permit No. PA97-36

We have reviewed the subject application and hereby provide comments for incorporation into the in-house sufficiency review.

The Department plans to review the project with respect to Rule 62-212.400, Prevention of Significant Deterioration, and to make a Best Available Control Technology determination for at least carbon monoxide, particulate matter, nitrogen oxides, and sulfur dioxide. Sufficient information has been provided in the application to make these determinations.

We request that the City provide a comparison between nitrogen oxides emissions from the existing units at the facility based on the Acid Rain Program data versus the data in the application which is based on AP-42 emission factors.

HOPPING GREEN SAMS & SMITH

PROFESSIONAL ASSOCIATION

ATTORNEYS AND COUNSELORS

123 SOUTH CALHOUN STREET

POST OFFICE BOX 6826

TALLAHASSEE, FLORIDA 32314

(904) 222-7500

FAX (904) 224-8551

FAX (904) 425-3412

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ELIZABETH C. BOWMAN
RICHARD S. BRIGHTMAN
PETER C. CUNNINGHAM
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GARY P. SAME
ROBERT P. SMITH
CHERYL G. STUART

GARY M. HUNTER, JR.
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ROBERT A. MANNING
ANGELA R. MORRISON
GARY V. PERKO
KAREN M. PETERSON
R. SCOTT RUTH
W. STEVE SYKES
T. KENT WETHERELL, II

OF COUNSEL
W. ROBERT FOKES

Writer's Direct Dial No.
(904) 425-2258

E-mail: morrisona@hgss.com

MEMORANDUM

TO: Jennette Curtis
FROM: Angela R. Morrison
DATE: April 18, 1997
RE: PSD "Netting" Issue

Attached are excerpts from the preamble statements made by the U.S. Environmental Protection Agency when it proposed and finalized the Prevention of Significant Deterioration rules. As we discussed earlier today, these statements discuss EPA's position regarding "netting" to avoid PSD review. You might want to pass along copies of these excerpts to the Department of Environmental Protection. Please call me if you have any questions.

cc: Karl Bauer
Doug Fulle
Darrel Graziani

Excerpt from Proposed
PSD Rules

51932 Federal Register / Vol. 44, No. 173 / Wednesday, September 5, 1979 / Proposed Rules

review, increments and even standards could easily be violated.

While increased protection of air quality might be achieved by reviewing groupings even bigger than a plant, review of larger groupings is infeasible. New units not on adjacent property or under common control would be an awkward grouping to evaluate and regulate. Therefore, PSD review will apply to groupings of new construction no larger than a plant.

* Plant-wide review also serves the basic purposes of PSD when pieces of equipment are being built or modified at existing plants. With plant-wide review, industry can construct new and modified equipment without a permit, by reducing emissions enough that net emissions at the plant do not increase. (Allowing use of offsetting emission reductions within the source to avoid NSR is called the "bubble" approach. For discussion of the bubble, see "Modification"). The purposes of PSD are served, because assuring that there will be no net increase in emissions from the plant also assures that the construction will not interfere with maintaining good air quality.

Permitting offsets only within individual process units would go beyond maintaining the status quo. While additional emission reductions beyond existing levels are needed to attain standards in nonattainment areas (see discussion in the next section), such reductions are ordinarily unnecessary to meet the purposes of the PSD program. In addition, the review itself would not make sense relative to RSD goals, if new units at sources with offsetting plant-wide decreases were forced to undergo review. Sources might be required to model and monitor increment consumption when air quality is expected to improve or stay the same. In addition, application of the bubble on a plant-wide basis encourages voluntary upgrading of equipment, and growth in productive capacity.

* Since obtaining offsets is often less expensive and less time-consuming than obtaining a PSD permit, providing industry with the offset option will facilitate upgrading of production capacity, and encourage application of improved controls to obtain offsets. Permitting plant-wide use of offsets provides the greatest opportunity for both of these desirable results. Thus, plant-wide review is the preferred approach under PSD for reviewing construction of both new plants, and new and modified pieces of equipment at existing plants.

For these reasons, EPA proposes that PSD review apply to a large grouping of pollutant-emitting activities, like an

industrial plant. To accomplish this, EPA proposes to define "building, structure, facility, or installation" to mean a grouping of activities on contiguous or adjacent properties and under common control. The term "grouping" is intended to include a plant consisting of a single isolated activity, as well as a plant consisting of many activities.

C. Sources Subject to Nonattainment Requirements.

1. Purpose to be Served by Nonattainment NSR Definitions. Unlike the PSD provisions, the nonattainment provisions are primarily intended not merely to prevent excessive increases in emissions, but to reduce emissions. This fundamental difference in purpose requires a different approach to defining the sources that will be subject to NSR. To assure adequate review, EPA believes that both entire plants and individual pieces of equipment must be subject to NSR. The one exception under EPA's proposal is for areas subject to fully complete SIPs satisfying Part D requirements. In these areas, where attainment is assured, NSR need apply only to entire plants.

To assure adequate review of new plants, a large grouping must be subject to nonattainment NSR for the reasons discussed above for PSD. To do otherwise would allow a new plant that is divided into separate process units, each below the potential emission threshold, to escape review. New emissions could thus be added to the existing violation, without review, making attainment virtually impossible. Therefore, EPA believes that nonattainment programs, like PSD programs, must apply NSR to entire plants.

EPA believes that pieces of process equipment within plants should also be subject to NSR under nonattainment programs. This would prevent use of plant-wide offsets for increases from construction or modification of major pieces of process equipment. The plant-wide bubble is less appropriate for nonattainment programs than for PSD programs because it only holds emissions constant. Nonattainment programs, in contrast to PSD programs, must positively reduce emissions.

If increases from construction of new or modified pieces of process equipment could be offset on a plant-wide basis the construction would make attainment of the standards substantially more difficult. For each nonattainment area, there are only a limited number of cost-effective ways to reduce existing emissions enough to attain standards. If the cost-effective opportunities to reduce emissions are used to offset

equally large increases from new construction, then other, less cost-effective ways to reduce emissions must be found to achieve attainment.

Therefore, to ensure that construction within existing plants does not make attainment of the standards more difficult, nonattainment programs must provide for NSR new and modified pieces of equipment. The NSR requirements will assure that the most stringent controls are applied to new and modified equipment, and that more than offsetting reductions in existing emissions are obtained to assure adequate continued progress toward attainment. The nonattainment requirements also ensure that other sources in the state, owned or operated by the same owner, are in compliance with SIP requirements needed for attainment.

This policy argument is strongly supported by the legislative history. Even where demolition of obsolete equipment reduces emissions, Congress indicated that construction of replacement equipment should be subject to NSR under nonattainment programs without regard to the offsetting reductions:

Thus, [under the offset ruling and Part D NSR requirements,] a new source is still subject to such requirements as "lowest achievable emission rate" even if it is constructed as a replacement for an older facility resulting in a net reduction from previous emission levels.⁴ (Statement of Senator Muskie, 123 Cong. Rec. at S 13702 col. 2 (daily edition, August 4, 1977)).

2. Proposed Definitions. To implement this specific expression of Congressional intent, as well as the general purposes of the nonattainment provisions discussed above, EPA is proposing to define "source" to include not only plant-wide groupings of activities, but also individual pieces of process equipment. "Building, structure or facility" would be defined as a large grouping of activities (a plant) and "installation" would be defined as an "individual piece of process equipment."

These definitions would prevent use of plant-wide bubble for all new and modified major pieces of process equipment. ("Major" means having high enough potential emissions to be a major stationary source. "Minor" means having less than that.) The plant-wide bubble would still serve to avoid NSR, when emissions from a new or modified minor piece of equipment (or from some installation) are offset by enough

⁴ Then, as now, "facility" was defined in EPA's offset ruling as a piece of process equipment.

⁵ Referred to hereafter as "facility."

Excerpt from Preamble to
Final PSD Rules

Federal Register / Vol. 45, No. 154 / Thursday, August 7, 1980 / Rules and Regulations 52783

approach might have. Several asserted that EPA's proposal would discourage early cleanup and actually perpetuate the existing air quality problem.

The Administrator has reconsidered the interpretation that led to the proposal of the "increase only" approach for carrying out the growth restrictions and concluded that the *Alabama Power* decision does not support it. Thus, in the final rules promulgated today, a major stationary source can construct in a growth restricted area, if sufficient contemporaneous, creditable net reductions are found (subject to the limitations on reconstruction described below).

J. Reconstruction

In the September 5, 1979 proposal, a reconstruction (roughly, improvements at an existing source which equal 50% or more of the capital cost for replacing the source) was to be treated as if it were a new source for purposes of NSR under both PSD and nonattainment rules. Under the proposal, a reconstructed major stationary source would be subject to review regardless of any contemporaneous emissions reductions that would occur at the same source. The Administrator proposed this approach in accordance with Congressional intent to subject new construction in nonattainment areas to requirements such as meeting the lowest achievable emission rate (LAER), even though a replacement of an older unit would result in a net reduction from previous emission levels (see 123 CONG. REC. 13702, col. 2 (daily ed. August 4, 1977) (statement of Senator Muskie)). In the agency's view nonattainment areas require very stringent NSR Procedures to overcome the inertia of the nonattainment problem. Having a reconstruction provision would promote maximum air quality improvements from an area's limited reduction capability by requiring more construction projects to meet LAER and bring other sources in the State under common control into compliance with the SIP.

The reconstruction rule was also proposed for PSD in an effort to be consistent with nonattainment NSR. Although the Administrator recognized that the air quality rationale for having reconstruction in nonattainment areas was considerably stronger than that for PSD inclusion, it was believed that less confusion would result with a parallel application of the reconstruction rule.

All ten commenters on the reconstruction topic voiced general disapproval for the proposal. Eight of the ten favored dropping the concept

entirely from both sets of regulations, with the remaining two requesting that its applicability be restricted. They advised that EPA should rely instead on the reconstruction provisions of NSPS and NESHAP to ensure such construction would apply adequate control technology. Commenters complained that review criteria based solely on the replacement cost of equipment regardless of air quality improvements make little sense for NSR rules charged with safeguarding air quality. They further argued that the added regulatory complexity inherent to the inclusion of a reconstruction provision was not warranted and its addition to NSR would not be consistent with the "no net increase" exemption under *Alabama Power*.

The Administrator agrees that the reconstruction requirement makes only limited air quality sense for PSD and has reconsidered the need to retain this concept for the program. It is true that a reconstructed source not otherwise subjected to PSD review as a major modification (i.e., such source would not cause a significant net emissions increase) would not interfere with the PSD air quality objective of allowing only limited deterioration of existing air quality. On the other hand, the PSD objective of maximizing future use of the allowable increments through application of best available control technology (BACT) would not be strictly met. Nevertheless, the Administrator believes that the general PSD objective of safeguarding existing air quality from significant degradation will not be undermined by deleting the requirement for review of reconstructions.

The proposal would have implemented reconstruction for PSD only on a plant wide basis. Thus, an entire plant would have to be reconstructed in order for it to be subjected to PSD review as a reconstruction. Few instances of plantwide reconstruction are expected. The limited applicability under PSD brings further doubt as to the real need for the added complexity that a reconstruction provision would bring to determining the permit applicability of construction projects. Furthermore, the deletion of reconstruction from PSD would avoid some increment tracking problems: treating reconstruction as new PSD sources could lead to increment consumption unrelated to actual air quality changes.

The Administrator does not agree with the commenters who argued that applying "reconstruction" in nonattainment areas would bring unwarranted complexity and no air

quality benefits. As explained in the proposal, EPA believes that the reconstruction provision within nonattainment NSR rules is consistent with stated Congressional intent and programmatic goals to get reasonable air quality improvements from each major construction activity. Since *Alabama Power* did not strictly bind EPA in nonattainment concerns and since the reconstruction concept was not expressly precluded, the Administrator has determined that reconstruction is warranted in nonattainment areas and is today promulgating this concept as proposed for nonattainment NSR rules.

Commenters also asked that several exemptions be considered if a reconstruction rule were promulgated. Among the exemptions suggested were: (1) current NSPS exemptions for modifications, (2) Fuel-Use Act exemptions, (3) involuntary replacement of damaged equipment, and (4) voluntary fuel switches. The Administrator is not promulgating any of these exemptions into the reconstruction provision. First, the current NSPS exemptions and involuntary replacement of damaged equipment do not avoid applicability of NSPS under 40 CFR 60.15 when a unit would have been reconstructed. Therefore, it would be inconsistent to establish such a concept under nonattainment NSR. In addition, 40 CFR 60.15, which governs how the reconstruction rule will apply in the affected NSR programs (see e.g., 40 CFR Part 61 Appendix B, section II, A(12)), allows the Administrator, in paragraph (f), some case-by-case discretion in determining when a reconstruction would occur. Thus, no specific exemptions such as those suggested appear warranted at this time.

K. Exclusions

In September, EPA proposed to exclude "routine maintenance, repair and replacement" from the category "physical change" which appeared in the proposed PSD and nonattainment definitions of "major modification." At the same time EPA proposed to exclude the following events from the category "change in method of operation," unless previously limited by enforceable permit conditions: (1) a fuel switch due to an order under the Energy Supply and Environmental Coordination Act of 1974 (ESECA) (or any superseding legislation) or due to a natural gas curtailment plan under the Federal Power Act; (2) a voluntary switch to an alternative fuel or raw material that the source prior to January 6, 1975, was capable of accommodating; (3) a fuel switch due to an order or rule under section 125 of the

APPENDIX B
AIR QUALITY MODELLING PROTOCOL

APPENDIX B

AIR QUALITY MODELLING PROTOCOL

Introduction

The development of and agreement on a modelling protocol is suggested by U.S. Environmental Protection (EPA) and the Florida Department of Environmental Protection (DEP) prior to embarking on any major air quality modelling exercise. This protocol describes, in some detail, the models (and model options) which will be used, the meteorological and emissions data which will be input to the model, the receptor grids which will be utilized, and the analyses which will use the model results. Unlike the remainder of this Plan of Study, this modelling protocol is being submitted for formal DEP approval.

Netting Analysis

The proposed project will be a major modification of a major existing source for the criteria pollutants. In accordance with Rule 62-212.400, F.A.C., and the Draft New Source Review Workshop Manual (EPA, 1990), a modification is subject to PSD review only if the net emissions increase of any pollutant emitted by the source, as a result of the modification, is "significant." Typically, this means that the net emissions increase is greater than the PSD Significant Emission Rates (Table 212.400-2 in 62-212.400 F.A.C.). However, since the Purdom Plant is within 10 km of a Class I area, any net increase in a regulated pollutant which will cause an increase of $1 \mu\text{g}/\text{m}^3$ (24-hour average) in the Class I area is considered significant. Prior to commencing the modelling analysis described in this protocol, a netting analysis will be conducted in accordance with the procedures in the PSD Workshop Manual. The PSD regulations indicate that modelling analyses need to be conducted for only those pollutants with significant net increases resulting from the modification. However, in the interest of providing a more complete picture of project impacts, the City of Tallahassee intends to model the proposed project impacts for all PSD regulated pollutants and Florida Draft Ambient Reference Concentrations (FARCs) for which the project will have quantifiable emissions.

General Modelling Approach

General Modelling Approach - The air quality impact assessment will consist of a proposed source significant impact area analysis, a PSD increment consumption analysis, an ambient air quality standards impact analysis, and an additional impacts analysis. In addition, the need for ambient monitoring will be evaluated. These analyses are discussed in greater detail below. The modelling approach will follow EPA and DEP modelling guidelines for determining compliance with applicable PSD increments and ambient air quality standards (AAQS). EPA modelling guidance is provided in the Guideline on Air Quality Models (40 CFR 51, Appendix W) as well as the Draft New Source Review Workshop Manual (EPA, 1990). DEP guidance on conducting the analyses is provided in Rule 62-212.400 F.A.C.

Based on current EPA and DEP policies, the highest annual average and highest second-high short-term (i.e., 24 hours or less) predicted concentrations (critical concentrations) will be selected for comparison to applicable AAQS and PSD increments. However, the highest short-term predicted concentrations will be used for comparison to significance levels. The use of a

five-year meteorological data base in the modelling analysis, as proposed below, allows a comparison of the predicted highest second-high short-term concentration to applicable short-term PSD increments and ambient air quality standards. The highest second-high concentration is calculated for a receptor field by:

- Eliminating the highest concentration predicted at each receptor;
- Identifying the second-high concentration predicted at each receptor; and
- Selecting the highest concentration among those second-high concentrations.

This approach is consistent with the air quality standards and PSD increments which permit one short-term average exceedance per year at each receptor.

The general modelling approach for each air quality impact analysis will commence with a significant level impact phase. Then, if indicated, screening and refined multi-source modelling phases will be conducted for those pollutants having a significant impact. The major difference between the two latter phases is the receptor grid used when predicting concentrations and the number of meteorological data periods evaluated. In general, concentrations for the screening phase will be predicted using a coarse mesh receptor grid and a five-year meteorological data base. The screening phase will identify the critical receptors associated with the highest and highest second-high short-term concentrations for all applicable pollutants and averaging periods. The predicted concentrations at those critical receptors will be evaluated in greater detail in the refined phase of the analysis.

The refined phase of the analysis will be performed by predicting concentrations using a fine mesh receptor grid centered over each of the critical receptors identified in the screening phase of the modelling analysis. Several critical receptors will be evaluated for each year of meteorological data containing the meteorological conditions which caused the critical concentrations identified in the screening phase analysis. This approach will be used to ensure that valid highest second-highest (critical) short-term concentrations will be obtained for comparison to applicable air quality standards and PSD increments.

Model Selection and Use

The most current version of Industrial Source Complex (ISC) dispersion model will be used to evaluate the emissions from the proposed units. As of the date of this protocol, this is ISC3 (Version 95250). This model has been downloaded from the EPA Technology Transfer Network (TTN), Support Center for Regulatory Air Models (SCRAM) bulletin board. The model and its use are covered in a Users Guide (EPA, 1995a). The ISC3 model was selected primarily for the following reasons:

1. EPA and DEP have approved the general use of the model for air quality dispersion analysis because the model assumptions and methods are consistent with those in the Guideline on Air Quality Models.
2. The ISC3 model is capable of predicting the impacts from stack, area, and volume sources that are spatially distributed over large areas and located in flat or gently rolling terrain.

3. The results from the ISC3 model are appropriate for addressing compliance with AAQS and PSD increments since the model can predict the highest as well as the highest second-high concentration and period of occurrence for 1-hour, 3-hour, 8-hour and 24-hour averaging periods at each receptor for each full year of hourly meteorological data used. The short-term or long-term versions of the ISC3 model can be used for annual averages.
4. The ISC3 model has several options and features that allow it to handle certain situations in a variety of ways. For this analysis, the EPA regulatory default options will be used to predict the maximum impacts from the facility.

Area Classification

The ISC3 model has rural and urban options which affect the wind speed profile exponent law, dispersion rates, and mixing-height formulations used in calculating ground-level concentrations. The criteria used to determine when the rural or urban mode is appropriate are based on land use near the proposed plant's surroundings (Auer, 1978). If the land use is classified as heavy industrial, light-moderate industrial, commercial, or compact residential for more than 50 percent of the area within a 3 km radius circle centered on the proposed source, the urban option should be selected. Otherwise, the rural option is more appropriate.

Based on the use of USGS topographic maps, it has been preliminarily concluded that the land use is consistent with the use of the rural rather than urban options.

GEP Stack Height/Downwash Considerations

If the stack for the proposed unit or existing units are less than Good Engineering Practice (GEP), then the potential for building downwash based upon the dimensions of nearby buildings must be considered in the modelling analysis. The procedures used for addressing the effects of building downwash are those recommended in the ISC3 Dispersion Model User's Guide and are incorporated into the ISC3 model. The effective height and effective width of structures are input to the model and are used to modify the dispersion parameters. The Unit 8 stack is planned for GEP height; however, the stacks of the existing units are believed to be less than GEP.

The possibility of on-site structures influencing off-site concentrations due to the structures creating a cavity recirculation region will be evaluated. The first level of screening will be performed to determine if a structure is within 3H of the property line (where H = structure height). Structures greater than 3H from the property line are not expected to have an off-site cavity. Structures which are within 3H of the property line will be further evaluated using the method presented in the SCREEN3 Model User's Guide (EPA, 1995b) to determine the cavity height, length and concentration. The results of these calculations will be used in subsequent analyses.

Plant Loads/Ambient Temperatures

Operating load can affect emission parameters, and therefore ground-level impacts, because exit temperature and velocity change along with source emission rate. Three Unit 8 operating load cases will be analyzed before the significant impact area analysis using ISC3 and one year of meteorological data. These loads will be selected to cover the range of normal plant operations (probably 60%, 80% and 100%). The Unit 8 load case shown in the analysis to cause the highest

impacts will be used in the subsequent analyses. The new unit will also be modelled at three ambient temperatures (20°F, 59°F and 95°F) to determine which produces the highest impacts. Thus, with three loads and three ambient temperatures to consider, a matrix of at least nine cases will be evaluated.

Meteorological Data

The air quality modelling analysis will use hourly preprocessed National Weather Service (NWS) surface meteorological data from Tallahassee, Florida and concurrent twice-daily mixing heights from Apalachicola, Florida for the years 1985 to 1989. These are the locations and years recommended by DEP. The preprocessed hourly meteorological data file for each year of record used in the analysis obtained from DEP will contain randomized wind direction, wind speed, ambient temperature, atmospheric stability using the Turner (1970) stability classification scheme, and mixing heights. The anemometer height of 6.7 meters, to be used in the modelling analysis, was obtained from NWS Local Climatological Data summaries for Tallahassee.

Emission Inventory

Emissions and stack parameters of the proposed project for the significant impact area analysis as well as subsequent analyses will be generated from the most current engineering information available at the time the modelling is performed. Emissions data will be obtained for SO₂, NO_x, PM₁₀, lead (Pb) and CO.

For those pollutants for which the project will have a significant impact, it will be necessary to consider other sources in the AAQS and PSD increment consumption analyses. The sources to be considered will be determined in accordance with guidance in EPA's Guideline on Air Quality Models and Draft New Source Review Workshop Manual. Sources located beyond the significant impact area of the proposed source will be screened based on the "Screening Threshold" method (North Carolina DNR, 1985) to determine whether they should be included in the modelling analysis. Source information will be obtained from DEP and from other recent air quality modelling studies for the area. Maximum allowable emission rates will be used in all modelling analyses involving other sources. A listing of sources in the inventory will be submitted to DEP for review and concurrence prior to the initiation of any detailed multi-source modelling effort. Existing sources will be categorized as increment consuming PSD sources, PSD increment expanding sources, or non-PSD affecting sources depending upon whether their emissions have increased or decreased from their "baseline" emissions and whether they commenced construction before or after the PSD baseline date for the area, which also will be obtained from DEP.

Stacks which have similar emission parameters will be modelled as co-located sources to simplify the analysis. Further, stacks which have similar stack gas compositions will be modelled using a unit emission rate and the results scaled to get the impacts for each separate pollutant.

Receptor Locations

Receptors will be placed at locations considered to be "ambient air," which EPA has defined as "that portion of the atmosphere, external to buildings, to which the general public has access" [40 CFR 50.1(e)]. All of the site will not be ambient air because access to it is restricted. Therefore, the closest receptors will be on the site property lines. A plot plan showing the plant boundary

and areas where public access is precluded will be provided, as will a description of the measures taken to prohibit public access (e.g., fences, signs along the river).

The significant impact area analysis will use a polar receptor grid centered over the proposed source. The polar receptor grid will consist of 36 radials, each separated by 10 degree increments and extending out from the plant boundary line in all 36 directions. The length of the radials will depend upon the distance at which the proposed source impacts reach the significant impact levels as defined for each applicable pollutant in the PSD regulations, but will be no more than 50 km.

The screening phase for the air quality impact analysis will use a coarse mesh polar receptor grid (0.50 km distance between rings with radials spaced 10 degrees apart out to 6 km and then at 1.0 km spacing out to at least 10 km) centered over the proposed source. The receptor grid will begin coverage at the plant boundary line and extend outward in all directions. The receptor grid will provide sufficient receptor coverage to determine the locations of all critical concentration receptors to be evaluated in the refined phase of the analysis.

The refined phase of the air quality impact analysis will use a fine mesh cartesian receptor grid (0.10 km grid resolution) composed of 121 discrete receptors within a 1.0 km square grid centered over each critical receptor.

Background Concentrations

To analyze impacts relative to AAQS, estimates of background pollutant concentrations will be needed. Background concentrations should include contributions from sources not included in the modelling analyses as well as contributions from natural sources. Since it is anticipated that no on-site monitoring program will be required, background concentrations will be obtained from DEP.

The Guideline on Air Quality Models provides some guidance regarding the determination of background concentrations. The data collected as part of the DEP monitoring network will be interpreted following this guidance. For pollutants not monitored in the area, recommendations regarding representative background concentrations will be obtained from DEP.

Proposed Analyses

Proposed Source Significant Impact Area Analysis - The proposed project will be modelled using the SO₂, NO_x, PM₁₀, and CO emissions data discussed above. The significant impact area will be defined on a pollutant-specific basis for all applicable averaging periods according to the significant impact levels defined in the PSD regulations. Highest rather than highest second-high short-term values will be used in this analysis. The greatest significant impact area resulting from an analysis of all applicable averaging periods for a given pollutant will be the significant impact area for that pollutant. The significant impact area will be used to determine the source interaction zone for the screening phase of the air quality impact analysis.

Ambient Air Monitoring Requirements Analysis - The results of the significant impact area analysis will be compared to "de minimis" monitoring concentrations in Table 212.400-3 in 62-212.400 F.A.C. to determine if ambient air monitoring is required or if a monitoring exemption will be granted. While the City of Tallahassee does not anticipate the need for ambient air monitoring, a monitoring plan will be prepared if the modelling results demonstrate a need.

PSD Increment Consumption Analysis

The Purdom Site is in a Class II PSD area. However, two Class I areas are located nearby, the St. Marks Wilderness Area (as close as 0.875 km south, southeast, and southwest of the site) and the Bradwell Bay Wilderness Area (28 km west of the site). The next closest Class I areas are the Okefenokee Wilderness Area in Georgia (about 170 km east-northeast of the site) and the Chassahowitzka Wilderness Area in Florida (about 200 km southeast of the site); these are too far away to warrant consideration in the analysis. The Class II PSD increment consumption analysis will consist of modelling the PSD source inventory for those PSD pollutants projected to have a significant off-site impact using the ISC3 model and comparing the highest second-highest short-term average and highest annual average impacts to the appropriate Class II PSD increments. For the Class I PSD increment consumption analysis, the ISC3 model will be used to assess whether the net proposed project impact will be "significant," with significance defined by the EPA in the recently proposed New Source Review Reform Regulations (61 FR 38,249, dated July 23, 1996). If the net proposed project impacts are predicted to be significant, the City of Tallahassee will conduct multi-source modelling using an agreed upon inventory of sources whose emissions would impact the Class I areas for the pollutant or pollutants of concern.

Ambient Air Quality Standards Impact Analysis - The area around the Purdom site is attainment or unclassifiable for all of the criteria pollutants. The ambient air quality standards impact analysis will consist of modelling all appropriate (permitted) and existing sources identified on the emissions inventory for each criteria air pollutant (SO₂, NO₂, CO, PM₁₀, and Pb) for which the proposed project will have a significant impact. The highest second-high short-term and highest annual average impacts will be combined with appropriate background concentrations for each applicable air pollutant and averaging time and compared to the appropriate state and federal ambient air quality standards to determine whether the ambient air quality standards are exceeded. The background concentrations for each applicable air pollutant will be determined using the procedures described above. No modelling of proposed project impacts on ozone (O₃) concentrations is planned as it is not considered to be feasible for single source impact analysis.

Additional Impacts Analysis -Additional impacts analysis will be performed for those criteria and non-criteria PSD regulated air pollutants emitted in significant quantities to determine air pollution impacts on soils and vegetation caused by emissions from the proposed project and emissions resulting from associated growth. Specifically, a growth projection analysis including population growth projection and industrial growth project data will be performed. The impacts of this growth on air quality will be estimated. Modelled concentrations and/or depositions will be used to determine if there will be any significant impacts on soils or vegetation. The need for an Air Quality Related Values (AQRV) analysis for the St. Marks and Bradwell Bay Wilderness Areas will be determined after further discussions with the DEP and the Federal Land Managers. A screening (level-1) visibility impact analysis will be conducted for the nearest Class I Areas using the technical guidance provided in the Workbook for Plume Visual Impact Screening and Analysis (EPA, 1988b).

FARC Analysis

The analysis of hazardous air pollutants (HAPs) will follow the DEP guidelines. The maximum impacts from the proposed project for those HAPs regulated under the Clean Air Act Amendments and on the DEP Draft FARC list will be predicted and compared with the guidelines.

References

- Auer, A.H., Jr. 1978. Correlation of Land Use and Cover with Meteorological Anomalies. *Journal of Applied Meteorology*. 17:636-643.
- North Carolina Department of Natural Resources and Community Development. Screening Threshold Method for PSD Modelling. Letter of approval from Bruce P. Miller, USEPA Region IV.
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- U.S. Environmental Protection Agency. 1995a. Users Guide for the Industrial Source Complex (ISC3) Dispersion Models. Volume I. EPA - 454/B-95-003a. Office of Air Quality Planning and Standards. Research Triangle Park, NC.
- U.S. Environmental Protection Agency. 1995b. SCREEN3 Model Users Guide. EPA- 454/B-95-004. Office of Air Quality Planning and Standards. Research Triangle Park, NC.
- U.S. Environmental Protection Agency. 1996. Guideline on Air Quality Models (40 CFR 51 Appendix W).

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JENNETTE CURTIS
Environmental Services Administrator
Electric Department
Route 4 Box 448
Tallahassee, Florida 32304
Telephone No. 904/891-5894 Fax No. 904/891-5899

TO: CLAIR FANCY DATE: 4/14/97

RE: PSD APPLICABILITY

FYI. ATTACHED PLS FIND THE RATIONALE / REGULATORY BASIS THE CITY OF TALLAHASSEE UTILIZED IN THEIR NETTING ANALYSIS, ALONG WITH SOME MEMORANDUM FROM EPA WE WERE ABLE TO LOCATE ON THE SUBJECT.

I HOPE THIS IS HELPFUL.

JENNETTE

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AIR REGULATION

CITY OF TALLAHASSEE
Sam O. Purdom Generating Station
Unit 8 Project
PSD Applicability--Netting Analysis
April 14, 1997

- Purdom Station is a "major facility" (current potential to emit is greater than 100 TPY)
- Addition of Unit No. 8 would be a "modification" to a major facility
- Key is whether the modification would result in a "significant net emissions increase," comparing past actuals to future potentials
- First, consider past actual emissions of the facility (i.e., average TPY from last two years)

NO_x

Units 5 and 6 -	209
Unit 7 -	251
Combustion Turbines 1 and 2 -	7
Auxiliary Boiler -	<u>0</u>
Total -	467

- Next, consider any "contemporaneous creditable increases and decreases" in those actual emissions from the facility
 - * Increases include the modification (e.g., Unit 8), any new minor units installed within the last five years (e.g., auxiliary boiler), and any anticipated increase in emissions from existing units because of the modification
 - * Creditable decreases include the shut down of units (e.g., Units 5 and 6) and federally enforceable limitations on operation or utilization (e.g., though an emissions cap)
 - * "Potential" emissions are defined as: The maximum capacity of an emissions unit *or facility* to emit a pollutant under its physical and operational design. Any enforceable physical or operational limitation on the capacity of the emissions unit *or facility* to emit a pollutant, . . . shall be treated as part of its design provided that, for any regulated air pollutant, such physical or operational limitation is federally enforceable.
 - * A facility-wide emissions cap based on past actual emissions will ensure no *net* increase, and that all increases and decreases are contemporaneous

• **Netting Analysis**

- * Units 5 and 6 will be permanently shut down, subject to federally enforceable requirement
- * "Potential" NO_x and SO₂ emissions from Combustion Turbines 1 and 2, Auxiliary Boiler, Unit 7, and new Unit 8 will be limited by a federally enforceable cap to ensure no net emissions increase from the facility

NO_x

Units 5 and 6: Decrease of 208

Combustion Turbines 1 and 2: No change anticipated, but limited by facility-wide cap

Auxiliary Boiler: Potential increase of 2 TPY; limited by facility-wide cap

Unit 7 and New Unit 8: Contemporaneous increases and decreases; limited by facility-wide cap (Unit 8 potential: 320 TPY)

Total from facility: CAP of 467 TPY, equal to past actual emissions; therefore, no net increase

- December 1, 1986 memorandum from EPA provides that an "agency can act (via an emissions cap) to limit the increase so as to ensure no net emissions increase at the source." "A State may act to place a federally enforceable emissions cap, based on historical actual emissions," on a source to ensure no net emissions increase. (Copy attached.)
- July 14, 1992, memorandum from EPA provides that a facility-wide cap can effectively limit emissions to avoid triggering a major modification under the PSD program. (Copy attached.)
 - * An emissions limit can be accepted which reflects past actual emissions.
 - * A federally enforceable emissions limit may be used to limit the potential to emit if a CEM (or acceptable alternative) is used.
 - * The emissions cap will provide assurance that any increases will be offset by equivalent decreases.



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SCOTT MADDOX
Mayor Pro Tem

JOHN PAUL BAILEY
Commissioner
DEBBIE LIGHTSEY
Commissioner
SIEVE MEISBURG
Commissioner

STEVEN C. BURKEIT
City Manager
ROBERT B. INZER
City Treasurer-Clerk

JAMES R. ENGLISH
City Attorney
RICARDO FERNANDEZ
City Auditor

March 31, 1997

RECEIVED

APR 03 1997

BUREAU OF
AIR REGULATION

Via Overnight Delivery

Mr. David Wergowske
USDA Forest Service
2946 Chestnut Street
Montgomery, AL 36107-3610

Dear Mr. Wergowske:

On March 7, 1997, the City of Tallahassee submitted to the State of Florida Department of Environmental Protection (DEP) a Site Certification Application for a proposed power plant addition to the existing Sam O. Purdom Generating Station in St. Marks, Florida. You may recall that this project was discussed with you and representatives from other agencies at a meeting in Tallahassee on September 25, 1996. The City is proposing to add a new combined cycle combustion turbine, along with associated facilities, and to permanently shut down two of the existing units at the Purdom Generation Station to help minimize any environmental impacts.

The Site Certification Application was submitted to DEP in accordance with Florida's Power Plant Siting Act (Part II of Chapter 403, Florida Statutes), and included a Prevention of Significant Deterioration (PSD) air construction permit application as Appendix 10.1.5. A copy of this application is enclosed for your review and information. As you may be aware, the Siting Act provides for a centralized environmental and land use licensing process that is coordinated by DEP. As part of the Site Certification Application, therefore, the City addressed many different environmental and land use aspects of the proposed project, including but not limited to air quality.

The City welcomes all comments that you and your staff may have regarding the expected impacts of the air emissions from the proposed project on the Bradwell Bay National Wilderness Area within the Apalachicola National Forest. As shown in the application, the project will not cause or contribute to any exceedances of the Ambient Air Quality Standards or PSD increments. In addition, as discussed in the application, there should be no adverse impacts on Air Quality Related Values in the Class I areas.

In keeping with the schedule that has been established by DEP for receiving requests for additional information from the various state, local, and regional agencies reviewing the Application, the City would greatly appreciate receiving any comments that the U.S. Forest Service may have on or before May 1, 1997. By receiving your comments on this schedule, the City will be able to coordinate its responses and provide any additional information to the

Mr. David Wergowske
March 31, 1997
Page 2

various agencies reviewing the Application in a timely manner. Thank you in advance for your cooperation.

If you have any questions regarding the Application or will be unable to submit your comments by May 1, please contact me at (904) 891-8850.

Sincerely,

A handwritten signature in cursive script that reads "Jennette Curtis".

Jennette Curtis
Environmental Administrator

Enclosure

cc (without enclosure):

Andrew Colaninno, USDA Forest Service
Hamilton S. Oven, Jr. (Buck), DEP
Martin Costello, DEP
Rob McGarrah, City of Tallahassee



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

DEC 1 1986

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MEMORANDUM

SUBJECT: Need for Emission Cap on Complex Netting Sources
FROM: Darryl D. Tyler, Director *Darryl*
Control Programs Development Division (MD-15)
TO: David Kee, Director
Air Management Division, Region V (5AR-26)

This is in response to your correspondence dated November 4, 1986, concerning a request from a State to provide further guidance on: (1) the appropriate context for defining an emissions decrease for prevention of significant deterioration (PSD), and (2) the level of administrative effort appropriate to make an emissions decrease permanent and enforceable. Your example involves an applicant proposing to modify a source and wanting to net out of PSD review by taking federally enforceable restrictions on existing units.

The PSD rules at 40 CFR 52.21(b)(2)(i) define a major modification as

. . . any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act.

Net emissions increase is defined as:

. . . the amount by which the sum of the following exceeds zero: (a) Any increase in actual emissions from a particular physical change or change in method of operation at a stationary source; and (b) Any other increases and decreases in actual emissions at the source that are contemporaneous with the particular change and are otherwise creditable.

Major modifications are, therefore, determined by examining changes in actual emission levels at the source. Actual emissions are defined as:

. . . the actual rate of emissions of a pollutant from an emissions unit, as determined in accordance with paragraphs(b)(21)(ii) through (iv) . . .

-2-

(ii) In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a two-year period which precedes the particular date and which is representative of normal source operation. The Administrator shall allow the use of a different time period upon a determination that it is more representative of normal source operation. Actual emissions shall be calculated using the unit's actual operating hours, production rates, and types of materials processed, stored or combusted during the selected time period.

(iii) The Administrator may presume that source-specific allowable emissions for the unit are equivalent to the actual emissions of the unit.

(iv) For any emissions unit which has not begun normal operations on the particular date, actual emissions shall equal the potential to emit of the unit on that date.

From subparagraph (iv), it is clear that a new unit's actual rate of emissions is equal to its potential to emit. Any federally enforceable physical and operational limitations which an applicant is willing to accept on the new emissions unit is considered in evaluating the new unit's potential to emit.

To determine the actual emissions decrease from the shutdown emissions unit, the reviewing agency applies the method defined in subparagraph (ii). Specifically, the average rate, in tons per year, at which the unit actually emitted during a 2-year period prior to shutdown. Furthermore, for the emissions decrease from the shutdown to be creditable, the requirement to shut down must be made federally enforceable.

After the new unit's potential to emit and the creditable emissions decrease have been quantified, the reviewing agency should then evaluate the extent to which the modification to the source will affect changes to actual emissions levels at other emissions units. Of particular concern (as you have pointed out in your example) is where existing emissions units, historically operated at less than their full capacity or allowable level, will increase operational levels for the sole purpose of compensating for the shutdown unit. If the emissions units in question do not have source-specific allowable emissions, actual emissions are determined as set forth in subparagraph (ii). If the reviewing agency determines that an increase in actual emissions at the existing emissions units will be directly attributable to the startup of the new unit, then the agency can act (via an emissions cap) to limit the increase so as to ensure no net emissions increase at the source.

-3-

Suppose, however, as specified in subparagraph (iii), actual emissions (for the purpose of performing a "net emissions increase" calculation) are presumed to be source-specific allowable emissions for these units; in such a case, there is probably no increase in "actual" emissions. This results from the fact that, though in reality emissions may increase at these units, their actual emissions have been presumed to be equivalent to their allowable emissions and their allowable emissions have not changed. In such a case, after the modification, the atmosphere may in reality experience an increase in emissions. For example, emissions at the source after modification could equal the source's previous emissions level (three units operating at 67 percent rather than four units at 50 percent) plus the additional emissions from the new emissions unit. In effect, a significant emissions increase occurs at the source without PSD review.

Although the regulations provide a presumption for the use of allowable emissions when source-specific limits are established, the preamble at 45 FR 52718 (August 7, 1980) states that:

The presumption that federally enforceable source-specific requirements correctly reflect actual operating conditions should be rejected by EPA or a state, if reliable evidence is available which shows that actual emissions differ from the level established in the SIP or the permit.

Further along that section of the preamble states that:

EPA, a state, or source remains free to rebut the presumption by demonstrating that the source-specific requirement is not representative of actual emissions. If this occurs, however, EPA would encourage states to revise the permits or the SIP to reflect actual source emissions.

Therefore, a State may act to revise source-specific requirements if such a revision in the State's view is needed to establish allowable emissions limits consistent with historical actual emissions. Accordingly, in the modification scenario you describe, a State may act to place a federally enforceable emissions cap, based on historical actual emissions, on the source. It can do this on the knowledge (or presumption) that the three remaining boilers will (or would logically be expected to) operate at a higher capacity in the future to make up for the shutdown unit. Simply shifting the load like this should not result in a "credit" that can be used to net a new emissions unit out of review. The emissions cap would prevent such an occurrence.

-4-

If the modification is a direct replacement, then an emissions cap is required on the new unit's production capacity to ensure that its potential to emit, when balanced against the shutdown credit, does not result in a significant emissions increase. Depending on the available shutdown credit, this may result in a limit in production capacity at the source.

For a major source to net out of PSD review, a permit agency must take all administrative measures necessary to ensure that the requirements to decrease emissions are explicit and meet the criteria for being considered "federally enforceable." The credits may come from any emissions unit within the source as long as the emissions unit meets the criteria for being a part of that "major source."

If you have any questions regarding this matter, please have your staff contact David Solomon of the New Source Review Section at 629-5697.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUL 14 1992

OFFICE OF
AIR AND RADIATION

MEMORANDUM

SUBJECT: 3M Tape Manufacturing Division Plant, St. Paul,
Minnesota

FROM: John B. Rasnic, Director
Stationary Source Compliance Division

TO: David Kee, Director
Air and Radiation Division

This is in response to your memorandum of June 8, 1992, regarding a proposed renewal project at the Industrial Specialties Division Tape plant in St. Paul, Minnesota owned by the 3M corporation. The company desires to enter into a federally enforceable state construction permit under which it would be required to operate such that current emissions levels would not be exceeded in order to lawfully avoid being treated as a major modification under the PSD program for a period of five years. My staff has reviewed the letter dated May 14, 1992 from the Minnesota Pollution Control Agency (MPCA) and the accompanying draft permit outline. Based on the information submitted to us, we believe that the draft permit, with some minor changes, is sufficient to allow 3M to make the changes as specified in the permit without triggering a major modification under the PSD program.

In general, a permit application must be sufficiently detailed so as to allow the permitting agency to be certain of the nature of the physical or operational changes proposed, and to accurately account for any resulting increase or decrease in emissions. In this case, we recognize that 3M is accepting an emission limitation which reflects its historically low current level of actual emissions. Further, the source plans to undertake a five-year renewal project that may cause it to deviate, during the project, from the level of normal source operations

established following installation of the thermal oxidizers. We agree that 3M may use the 1990 and 1991 years as representative of normal source operation for any changes during the five year period of the renewal project. Please note, however, that should 3M deviate from changes allowed under the permit, this may result in another period being deemed more representative of normal operations relative to that change. Accordingly, we suggest that you advise 3M to check with your office if its plans change substantially in the future in order to reaffirm that 1990-1991 continues to be the appropriate baseline period. Further, we agree that a federally enforceable emissions limit may be used in this case to limit the potential to emit as long as a continuous emissions monitor (CEM) or an acceptable alternative is used. A CEMs alternative is one that is demonstrated as providing information with the same precision, reliability, accessibility, and timeliness as that provided by CEMs. Considering 3M's baseline and the emissions limitations that restrict the plant's potential to emit, we recognize that more specificity in this permit would serve little purpose beyond that which the notification requirements already ensure for the permitting agency.

MPCA presently has no reason to believe that the National Ambient Air Quality Standard (NAAQS) for ozone is threatened by this source or any other sources in the area. It also believes that there will be no need for ambient impact analysis since the emissions cap in the draft permit will prevent the 3M renewal project from resulting in emissions increases over the 1990-1991 levels. As discussed above, with the presumption that 3M will not change its renewal plans so as to alter our conclusion that the 1990-1991 period is representative of normal source operations, changes at this source during the five year period of the permit will not be considered a major modification for New Source Review (NSR) purposes. Important to this conclusion is that the authority to construct the modifications authorized by the proposed permit will expire five years from the date of the permit's issuance, and the emissions cap will remain in place thereafter. This means that there will be contemporaneity between the acceptance of an emissions cap and the proposed modification, thereby providing assurance that any significant increases will be offset by equivalent decreases during the life of the permit.

Thus, the permit should be revised to reflect the most current two years of actual emissions. The permit must also require the use of a acceptable CEM equivalent. In addition, the permit must make it clear that any deviation from the permit requires notification to MPCA and may result in NSR applicability or another period being considered representative.

Lastly, we would like to review any other permits that take a similar approach to ensure that the goals of PSD are met.

If you have any questions, please contact me or have your staff contact Clara Poffenberger at (703) 308-8709.

cc: Greg Foote, OGC
Jeff Renton, OGC
Julie Domike, AED
John Calcagni, AQMD
David Solomon, NSRS

62-210.200 Definitions.

(1) THROUGH (19) - No Change.

(20) "Air Emissions Bubble" or "Bubble" - An air pollution control strategy wherein a facility complies with a multi-unit aggregate emissions limit or cap, in lieu of unit-specific limits, on a pollutant-specific basis for carbon monoxide, nitrogen oxides, sulfur dioxide, particulate matter, PM₁₀, or volatile organic compounds (VOCs).

(20) THROUGH (47) - Renumber as 21 THROUGH 48.

(49) "Bubble Baseline Emissions" or "Bubble Baseline" - For purposes of establishing an air emissions bubble, the sum of emissions of each pollutant from the emissions units included within the bubble, expressed both on a short-term and long-term basis.

(a) On a short-term basis, the bubble baseline shall be calculated by summing the allowable emissions of each unit after converting the allowable emissions to the equivalent pounds per hour.

(b) On a long-term basis the bubble baseline shall be calculated in tons per year by multiplying the allowable emissions times the actual capacity of each unit, actual capacity being determined as the average of the highest two out of the last five calendar years prior to the permit application for the bubble. For steam generating units, the actual capacity shall be expressed as million British Thermal Units per year.

(48) THROUGH (312) Renumber As (50) THROUGH (314).
Specific Authority 403.061, FS. Law Implemented 403.021,
403.031, 403.061, 403.087, 403.08735, FS. History Formerly 17-
2.100, Amended 2-9-93, 11-28-93, Formerly 17-210.200, Amended
11-23-94, 4-18-95, 1-2-96, 3-13-96, 3-21-96, 8-15-96, 10-7-96,
10-15-96,_____.

62-210.300 Permits Required.

(1) Air Construction Permits. An air construction permit shall be obtained by the owner or operator of any proposed new or modified facility or emissions unit prior to the beginning of construction or modification, in accordance with all applicable provisions of this chapter, Chapter 62-212 and Chapter 62-4, F.A.C. Except as provided under Rule 62-213.415, F.A.C., the owner or operator of any facility seeking to create or change an air emissions bubble shall obtain an air construction permit in accordance with all the applicable provisions of this chapter, Chapter 62-212 and Chapter 62-4, F.A.C. The construction permit shall be issued for a period of time sufficient to allow construction or modification of the facility or emissions unit and operation while the new or modified facility or emissions unit is conducting tests or otherwise demonstrating initial compliance with the conditions of the construction permit.

(2) Air Operation Permits. Upon expiration of the air operation permit for any existing facility or emissions unit, subsequent to construction or modification, or subsequent to the creation of or change to a bubble, and demonstration of

compliance with the conditions of the construction permit for any new or modified facility or emissions unit, any air emissions bubble, or as otherwise provided in this chapter or Chapter 62-213, F.A.C., the owner or operator of such facility or emissions unit shall obtain a renewal air operation permit, an initial air operation permit, or an administrative correction or revision of an existing air operation permit, whichever is appropriate, in accordance with all applicable provisions of this chapter, Chapter 62-213 (if the facility is a Title V source), and Chapter 62-4, F.A.C.

(3) THROUGH (5) No Change.

Specific Authority 403.061, FS. Law Implemented 403.021, 403.031, 403.061, 403.087, 403.08735, FS. History Formerly 17-2.210, Amended 11-28-93, Formerly 17-210.300, Amended 11-23-94, 4-2-95, 4-18-95, 10-16-95, 1-2-96, 3-13-96, 3-21-96, 5-13-96, 8-15-96, 10-7-96, _____.

62-212.100 Purpose and Scope. The Department of Environmental Protection adopts this chapter to establish the preconstruction review requirements for proposed new emissions units or facilities, and proposed modifications. The requirements of this chapter apply to those proposed activities for which an air construction permit is required pursuant to Chapter 62-210, F.A.C. This chapter includes general preconstruction review requirements and specific requirements for emissions units subject to prevention of significant deterioration (PSD) and nonattainment-area preconstruction review. It also includes preconstruction review requirements applicable to specific emissions unit types and to authorizing the creation or change to any air emissions bubble.

Specific Authority 403.061, FS. Law Implemented 403.021, 403.031, 403.061, 403.087, 403.0875, FS. History New 2-2-93, Formerly 17-212.100, Amended 11-23-94, 3-13-96,_____.

62-212.710 Air Emissions Bubble.

(1) General Restrictions. The Department shall not authorize the creation of or change to an air emissions bubble that would:

(a) Cause or contribute to a violation of any ambient air quality standard or PSD increment;

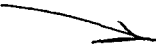
(b) Result in an increase of the maximum ambient ground-level concentration;

(c) Allow for an emissions increase, for any emissions unit included within such bubble, above an applicable limitation under any of the following: Best Available Control Technology (BACT)

pursuant to Rule 62-212.400, F.A.C.; Lowest Achievable Emissions Rate (LAER) pursuant to Rule 62-212.500, F.A.C.; the Federal Acid Rain Program; National Emissions Standards for Hazardous Air Pollutants pursuant to Rule 62-204.800, F.A.C.; and Standards of Performance for New Stationary Sources pursuant to Rule 62-204.800, F.A.C., provided that municipal waste combustors may apply for a bubble under this rule and subject to the provisions of 40 CFR 60, Subpart Cb, adopted and incorporated by reference in Rule 62-204.800, F.A.C.;

(d) At a facility located in a nonattainment area or in an area of influence, interfere with reasonable further progress toward attaining ambient air quality standards;

(e) Allow for an increase in opacity for any emissions unit included within such bubble above the unit's previous opacity limit;

 (f) Allow any emissions unit included within such bubble to avoid any preconstruction review requirements of Chapter 62-212, F.A.C.; or

(g) Relieve any emissions unit included within such bubble from any requirements that apply to hazardous air pollutants.

(2) Permit Application Requirements. Each applicant for an air emissions bubble shall provide the following information as part of its permit application for such bubble, in addition to any other information required under rules applicable to the facility.

(a) Identification of each emissions unit proposed to be included within the bubble, along with the following for each such unit:

1. The processes and operations authorized under the facility's construction permit(s) and current operation permit(s);

2. The applicable emission limits, production limits or other limiting factors specified in the facility's construction permit(s) and current operation permit(s);

3. Any requested changes in operations under the proposed air emissions bubble and the requested emissions limit for each emissions unit operating under the bubble.

(b) A plan for quantifying emissions from the proposed bubble and for demonstrating continuous compliance with the multi-unit aggregate emissions limit, including the method of measurement, frequency of measurement, method of standardization or audit, quality control protocols and statistical information correlating the actual emission rates with capacity or production rates.

(c) A demonstration that the proposed bubble would operate within the requirements of Rules 62-212.710(1)(a) through (g), F.A.C. For purposes of Rules 62-212.710(1)(a) and (b), F.A.C., the demonstration shall comply with the following requirements:

1. For bubbles of nitrogen oxides or volatile organic compounds, no ambient impact analysis is required to demonstrate compliance with ozone ambient air quality standards or to

demonstrate no increase in maximum ambient ground-level concentration.

2. For bubbles of sulfur dioxide, nitrogen dioxide, particulate matter 10 (PM₁₀), carbon monoxide, and lead, an ambient impact analysis is required, as specified in Rule 62-212.710(3), F.A.C., if any one of the following conditions would occur under the bubble:

a. Emissions would be shifted from one emissions unit to another with a lower plume height such that there is an emissions increase at the unit with the lower plume height;

b. One or more emissions units whose emissions would be increased have emissions points that may not avoid a downwash situation, as defined in 40 CFR Part 51, Appendix W, adopted and incorporated by reference in Rule 62-204.800, F.A.C.;

c. Two or more emissions points included within the bubble are 250 meters or more apart from one another;

d. A source of fugitive particulate matter is included within the bubble; or

e. Complex terrain, as defined in 40 CFR Part 51, Appendix W, exists within the area of significant impact of the bubble or within 50 kilometers of the facility, whichever is less.

(3) Ambient Impact Analysis Requirements. If an ambient impact analysis is required pursuant to Rule 62-210.700(2)(c)2., F.A.C., the applicant shall perform the analysis in accordance with the provisions of 40 CFR Part 51, Appendix W, adopted and

incorporated by reference in Rule 62-204.800, F.A.C. For purposes of this demonstration, the applicant shall use the most recent one-year period of meteorological data available and shall perform the analysis for each applicable pollutant and relevant averaging period.

(a) The applicant shall demonstrate compliance with Rule 62-212.710(1)(a), F.A.C., by modeling all emissions units in the bubble by comparing in a single model run the difference between the allowable emissions in the existing permit(s) and the bubble baseline emissions for the proposed bubble. If at any receptor point the maximum concentration change has an increase above a significant impact level, as set forth in Rule 62-204.200, F.A.C., the applicant shall demonstrate compliance with ambient air quality standards and prevention of significant deterioration increments by performing an analysis which considers all emissions units at the facility and in the surrounding area according to the procedures of 40 CFR Part 51, Appendix W.

(b) The applicant shall demonstrate compliance with Rule 62-212.710(1)(b), F.A.C., by comparing the maximum concentration over the receptor grid of the allowable emissions in the existing permit(s) for all emissions units in the bubble with the maximum concentration over the receptor grid of the bubble baseline emissions for the proposed bubble.

(4) Permit Content. In addition to any other permit conditions, a permit authorizing creation of, change to or use of

an air emissions bubble shall include the following provisions with respect to such bubble:

(a) The multi-unit aggregate emissions limit for the emissions units included in the bubble, not to exceed the bubble baseline emissions;

(b) A requirement that the owner or operator shall calculate, record and report on the same basis the emissions for each emissions unit included in the bubble, such as mass/time, mass/unit of production, or mass/unit of heat input, as applicable to the facility's operations;

(c) A requirement that the owner or operator shall average the emissions from all emissions units under the bubble on a rolling 24 hours basis, except that a longer averaging period may be used if authorized under the facility's construction or existing operation permit(s), but in no case shall the averaging period exceed 30 days;

(d) The plan for quantifying emissions from the bubble and for demonstrating continuous compliance as required under Rule 62-212.710(2)(b), F.A.C.

(5) Monitoring.

(a) The owner or operator shall monitor emissions from each emissions unit included in the bubble according to all requirements that apply to the facility, except that the provisions set forth in this rule shall additionally apply to emissions units included in the bubble.

(b) The owner or operator shall follow the requirements of Rule 62-210.700, F.A.C., if excess emissions occur from the emissions units included in the bubble.

(6) Records. The owner or operator shall maintain all records related to the bubble for a period of five years. Such records shall demonstrate continuous compliance with the multi-unit aggregate emissions limit.

Specific Authority 403.061, FS. Law Implemented 403.08735, FS. History New _____.



CITY HALL
300 S. ADAMS ST.
TALLAHASSEE, FL
32301-1731
904/891-0010
TDD 1-800/955-8771

SCOTT MADDOX
Mayor
STEVE MEISBURG
Mayor Pro Tem

JOHN PAUL BAILEY
Commissioner
DEBBIE LIGHTSEY
Commissioner
RON WEAVER
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ANITA R. FAVORS
City Manager
ROBERT B. INZER
City Treasurer-Clerk

JAMES R. ENGLISH
City Attorney
RICARDO FERNANDEZ
City Auditor

April 3, 1997

CERTIFIED MAIL P 483 230 230

Mr. Martin Costello
Bureau of Air Regulation
Division of Air Resources Management
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Re: Purdom 8 SCA Preliminary Review Meeting Confirmation

Dear Mr. Costello:

As you and Karl Bauer had discussed earlier this week, the City of Tallahassee would like to re-confirm our interest in meeting with you and other members of the FDEP DARM Group on Wednesday, April 9, 1997, from 10:30 AM- 12:00 noon at the FDEP offices at the Magnolia Square Office Complex to discuss preliminary issues noted during the Department's review of the Purdom Unit 8 Project Site Certification Application.

If you have any questions regarding the meeting, please feel free to contact me at (904) 891-8850.

Sincerely,

Jennette Curtis
Environmental Services Administrator

JC/kb

cc: Buck Oven, PE, FDEP
Claire Fancy, PE, FDEP
Scott Sheplak, PE, FDEP
Cleve Holladay, FDEP
Doug Fulle, FWENC
Darrel Graziani, PE, FWENC

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APR 08 1997

BUREAU OF
AIR REGULATION



CITY HALL
300 S. ADAMS ST.
TALLAHASSEE, FL
32301-1731
904/891-8100
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RON WEAVER
Mayor
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RICARDO FERNANDEZ
City Auditor

March 28, 1997

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MAR 31 1997

BUREAU OF
AIR REGULATION

Mr. Val Urban
Acting Refuge Manager
St. Marks National Wildlife Refuge
Post Office Box 68
St. Marks, FL 32355

Dear Mr. Urban:

On March 7, 1997, the City of Tallahassee submitted to the State of Florida Department of Environmental Protection (DEP) an Application for a proposed power plant addition to the existing Sam O. Purdom Generating Station in St. Marks, Florida. The City is proposing to add a new combined cycle combustion turbine, along with associated facilities, and to permanently shut down two of the existing units at the Purdom Generation Station to help minimize any environmental impacts.

The four-volume Application was submitted to DEP in accordance with Florida's Power Plant Siting Act (Part II of Chapter 403, Florida Statutes). You should have received a copy of the Application described above for review on March 25, 1997. As you may be aware, the Siting Act provides for a centralized environmental and land use licensing process that is coordinated by DEP. As part of the Application, therefore, the City addressed many different environmental and land use aspects of the proposed project.

The City welcomes all comments that you and your staff may have regarding the Application, but most specifically we would like your comments as to the expected impacts of the air emissions from the proposed project on the St. Marks National Wilderness Area. The Prevention of Significant Deterioration (PSD) air construction permit application is included as Appendix 10.1.5 of the Application, which describes the potential emissions from the proposed facility and the impacts of such emissions on the St. Marks National Wilderness Area. As shown in the Application, the project will not cause or contribute to any exceedances of the Ambient Air Quality Standards or PSD increments. In addition, as discussed in the Application, there should be no adverse impacts on Air Quality Related Values in the Class I areas.

In keeping with the schedule that has been established by DEP for receiving requests for additional information from the various state, local, and regional agencies reviewing the

Application, the City would greatly appreciate receiving any comments that the U.S. Fish and Wildlife Service may have on or before May 1, 1997. By receiving your comments on this schedule, the City will be able to coordinate its responses and provide any additional information to the various agencies reviewing the Application in a timely manner. Thank you in advance for your cooperation.

If you have any questions regarding the Application or will be unable to submit your comments by May 1, please contact me at (904) 892-8850.

Sincerely,



Jennette Curtis
Environmental Administrator

cc: Hamilton S. Oven, Jr.
Martin Costello
Rob McGarrah



CITY HALL
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JAMES R. ENGLISH
City Attorney
RICARDO FERNANDEZ
City Auditor

March 28, 1997

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MAR 31 1997

**BUREAU OF
AIR REGULATION**

Mr. Andrew Colaninno
District Ranger
Apalachicola National Forest
U.S. Forest Service
Post Office Box 579
Bristol, Florida 32321

Dear Mr. Colaninno:

On March 7, 1997, the City of Tallahassee submitted to the State of Florida Department of Environmental Protection (DEP) an Application for a proposed power plant addition to the existing Sam O. Purdom Generating Station in St. Marks, Florida. The City is proposing to add a new combined cycle combustion turbine, along with associated facilities, and to permanently shut down two of the existing units at the Purdom Generation Station to help minimize any environmental impacts.

The four-volume Application was submitted to DEP in accordance with Florida's Power Plant Siting Act (Part II of Chapter 403, Florida Statutes). You should have received a copy of the Application described above for review on March 25, 1997. As you may be aware, the Siting Act provides for a centralized environmental and land use licensing process that is coordinated by DEP. As part of the Application, therefore, the City addressed many different environmental and land use aspects of the proposed project.

The City welcomes all comments that you and your staff may have regarding the Application, but most specifically we would like your comments as to the expected impacts of the air emissions from the proposed project on the Bradwell Bay National Wilderness Area within the Apalachicola National Forest. The Prevention of Significant Deterioration (PSD) air construction permit application is included as Appendix 10.1.5 of the Application, which describes the potential emissions from the proposed facility and the impacts of such emissions on the Bradwell Bay National Wilderness Area. As shown in the Application, the project will not cause or contribute to any exceedances of the Ambient Air Quality Standards or PSD increments. In addition, as discussed in the Application, there should be no adverse impacts on Air Quality Related Values in the Class I areas.

In keeping with the schedule that has been established by DEP for receiving requests for additional information from the various state, local, and regional agencies reviewing the Application, the City would greatly appreciate receiving any comments that the U.S. Forest Service may have on or before May 1, 1997. By receiving your comments on this schedule, the City will be able to coordinate its responses and provide any additional information to the various agencies reviewing the Application in a timely manner. Thank you in advance for your cooperation.

If you have any questions regarding the Application or will be unable to submit your comments by May 1, please contact me at (904) 892-8850.

Sincerely,

A handwritten signature in cursive script that reads "Jennette Curtis".

Jennette Curtis
Environmental Administrator

cc: Hamilton S. Oven, Jr.
Martin Costello
Rob McGarrah



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JAMES R. ENGLISH
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RICARDO FERNANDEZ
City Auditor

March 28, 1997

Mr. John Bunyak
Chief
Policy, Planning & Permit Review Branch
National Park Service
Post Office Box 25287
Denver, CO 80225-0287

RECEIVED

MAR 31 1997

BUREAU OF
AIR REGULATION

Dear Mr. Bunyak:

On March 7, 1997, the City of Tallahassee submitted to the State of Florida Department of Environmental Protection (DEP) Site Certification Application for a proposed power plant addition to the existing Sam O. Purdom Generating Station in St. Marks, Florida. The City is proposing to add a new combined cycle combustion turbine, along with associated facilities, and to permanently shut down two of the existing units at the Purdom Generation Station to help minimize any environmental impacts.

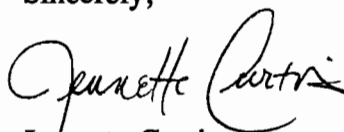
The Application was submitted to DEP in accordance with Florida's Power Plant Siting Act (Part II of Chapter 403, Florida Statutes), and included a Prevention of Significant Deterioration (PSD) air construction permit application as Appendix 10.1.5. We understand that DEP is sending you a copy of the PSD application for review, along with the air and fuel quality sections (Sections 3.3, 3.4, 4.5, 5.6, and 6.3). A copy of Appendix 10.4, which includes the existing permits for the Purdom Station, is also being sent to you. As you may be aware, the Siting Act provides for a centralized environmental and land use licensing process that is coordinated by DEP. As part of the Site Certification Application, therefore, the City addressed many different environmental and land use aspects of the proposed project.

The City would appreciate any comments that you or your staff may have regarding the expected impacts of the air emissions from the proposed project on the St. Marks National Wilderness Area. The PSD permit application describes the potential emissions from the proposed facility and the impacts of such emissions on the St. Marks National Wilderness Area. As shown in the application, the project will not cause or contribute to any exceedances of the Ambient Air Quality Standards or PSD increments. In addition, as discussed in the application, there should be no adverse impacts on Air Quality Related Values in the Class I areas.

In keeping with the schedule that has been established by DEP for receiving requests for additional information from the various state, local, and regional agencies reviewing the Application, the City would greatly appreciate receiving any comments that the U.S. Fish and wildlife Service may have on or before May 1, 1997. By receiving your comments on this schedule, the City will be able to coordinate its responses and provide any additional information to the various agencies reviewing the Application in a timely manner. Thank you in advance for your cooperation.

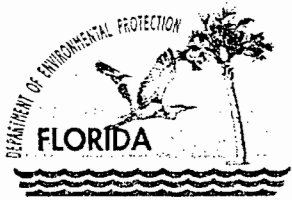
If you have any questions regarding the Application or will be unable to submit your comments by May 1, please contact me at (904) 891-8850.

Sincerely,

A handwritten signature in cursive script that reads "Jeannette Curtis". The signature is written in black ink and is positioned above the printed name.

Jeannette Curtis
Environmental Administrator

cc: Hamilton S. Oven, Jr.
Martin Costello
Rob McGarrah



Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
March 27, 1997

Virginia B. Wetherell
Secretary

Mr. Brian Beals, Section Chief
Air & Radiation Technology Branch
Preconstruction/EAP Section
U.S. EPA- Region IV
100 Alabama Street, SW
Atlanta, Georgia 30303

Re: City of Tallahassee
Application for PSD Permit
New Combined Cycle Unit (Unit 8)

Dear Mr. Beals:

Enclosed for your review and comment is the above referenced application. Please forward your comments to my attention at the letterhead address.

The applicant has proposed BACT limits for CO and particulate matter. The applicant proposes to avoid PSD for NO_x by committing to a permanent shutdown of two existing gas/oil fired boilers (Units 5 and 6) and the establishment of a facility-wide annual cap for NO_x to limit the net emissions increase (future emissions) to the previous 2 year average rate. The NO_x cap will include annual emissions from two existing combustion turbines (GT1 and GT2), a Subpart Dc auxiliary boiler (currently under construction), an existing gas/oil fired boiler (Unit 7), and the new Unit 8. Although the vendor guarantee for NO_x is 9 ppmvd for Unit 8, the applicant is requesting the limit in Subpart GG only since BACT is avoided.

If you have any questions, please contact me at (904)488-1344 or by electronic mail (COSTELLO_M@DEP.STATE.FL.US).

Sincerely,

Martin Costello, P.E.
New Source Review Section

AAL/mc

Enclosures

Memorandum

Florida Department of
Environmental Protection

TO: Power Plant Siting Review Committee
FROM: Buck Oven, Siting Coordination Office *HSO*
DATE: March 17, 1997
SUBJECT: Purdom Unit 8, PA 97-35, Module 8046

RECEIVED

MAR 17 1997

BUREAU OF
AIR REGULATION

Attached please find a copy of the City of Tallahassee's application for certification of a new generating system at the Purdom Power Plant. Please review and comment on the sufficiency of the application and return your comments no later than April 18, 1997.

Attach:

Memorandum

Florida Department of
Environmental Protection

TO: Power Plant Siting Review Committee
FROM: Buck Oven, Siting Coordination Office *HJO*
DATE: March 17, 1997
SUBJECT: Purdom Unit 8, PA 97-35, Module 8046

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MAR 17 1997

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Memorandum

Florida Department of
Environmental Protection

TO: Power Plant Siting Review Committee
FROM: Buck Oven, Siting Coordination Office *HCO*
DATE: March 17, 1997
SUBJECT: Purdom Unit 8, PA 97-35, Module 8046

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ROBERT B. INZER
City Treasurer-Clerk

JAMES R. ENGLISH
City Attorney
RICARDO FERNANDEZ
City Auditor

March 7, 1997

Mr. Cleve Holladay
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399

RECEIVED
MAR 7 1997
BUREAU OF
AIR REGULATION

Dear Mr. Holladay:

Subject: City of Tallahassee
Purdum Unit 8 Project
Air Quality Dispersion Modelling Files

Please find enclosed two packages of 3.5" disks containing the air quality dispersion modelling files which support the PSD application for the subject Project. The application is being filed today under separate cover with Mr. Hamilton Oven. Also enclosed are explanations of the file naming conventions utilized for the dispersion modelling files and hard copy listings of the contents of each of the disks.

Should you have any questions on the disks, please feel free to call me at (904) 891-8850, or you may call Mr. Mike Bilello, of Foster Wheeler Environmental, directly at (770) 825-7143. Should you need paper copies of any of the model runs, we would be happy to provide them.

Sincerely,

Jennette Curtis
Environmental Administrator

Enclosure

cc.(w/o enc.)

H. Oven (FDEP)
R. McGarrah (COT)
K. Bauer (COT)
A. Morrison (HGSS)
D. Fulle (FWENC)
M. Bilello (FWENC)
File 363.501, 363.511, 363.705



CITY HALL
300 S. ADAMS ST.
TALLAHASSEE, FL
32301-1731
904/891-8100
TDD 1-800/955-8771

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City Auditor

February 6, 1997

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FEB 12 1997

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BUREAU OF
AIR REGULATION

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DIVISION OF AIR
RESOURCES MANAGEMENT

CERTIFIED MAIL

Mr. Howard Rhodes, Director
Division of Air Resources Management
Florida Department of Environmental Protection
2600 Blair Stone Road
Mail Stop 5500
Tallahassee, Florida 32399-2400

Dear Mr. Rhodes:

**Commencement of Construction Notification
Auxiliary Boiler - Construction Permit No. 1290001-002-AC
Sam O. Purdom Generating Station**

This letter is being provided to inform you of the commencement of construction date in accordance with Chapter 40 of the Code of Federal Regulations (CFR) Part 60.7(a), as adopted by reference in 62-204.800, Florida Administrative Code (FAC). The City of Tallahassee commenced construction on January 7, 1997, on the above-referenced emission unit at the Sam O. Purdom Generating Station located at 667 Port Leon Drive, St. Marks, Wakulla County, Florida. The emission unit being constructed is a 16.74 million British thermal units per hour (mmBtu/hr) natural gas-fired auxiliary boiler subject to regulation under 40 CFR Part 60, Subpart Dc, as adopted by reference in 62-204.800, FAC.

If you have any questions regarding this commencement notification, please feel free to contact either myself at (904) 891-5534 or Ms. Jennette Curtis at (904) 891-8850.

Yours Truly,

Robert McGarrah, Superintendent
Electric Production Division

cc: Winston A. Smith, Director, EPA Region IV
B. Cowart, COT
G. King, COT
J. Curtis, COT

cc: C. Holladay, BAR



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JAMES R. ENGLISH
City Attorney
RICARDO FERNANDEZ
City Auditor

Certified Mail No. P230 286 990

January 22, 1997

Mr. Hamilton S. Oven, Jr.
Siting Coordination Office
Department of Environmental Protection
2600 Blair Stone Road MS480
Tallahassee, FL 32399

Dear Mr. Oven:

Subject: Purdom Unit 8 Project
Revised Attachment 3 to my January 9, 1997 Letter

Attached please find a revised Attachment 3 to my January 9, 1997 letter to you regarding "Follow-up on Air Quality Approach." Messrs. Doug Fulle and Mike Bilello, of Foster Wheeler Environmental, have been discussing the letter and attachments with Mr. Cleve Holladay of FDEP's Air Division. During those conversations it was discovered that the preliminary air quality modelling at the St. Marks Class I area used to support Attachment 3 was inadvertently done using the proposed Unit 8 emissions rather than the proposed net increase in emissions. Revised modelling using the proper emissions has been done which indicates that only carbon monoxide will have a maximum 24-hour average impact in the Class I area of greater than 1 ug/m³. Therefore, it is only for carbon monoxide that the PSD significance criterion in Table 62-212.400-2 does not apply. The Applicable PSD Significance criteria for NO_x, SO₂, Particulate Matter and PM₁₀ revert back to the values in Table 62-212.400-2. These changes are reflected in the revised Attachment 3.

Please note that this change has no effect whatsoever on the pollutants subject to PSD, as indicated in the revised Attachment 3. These pollutants remain carbon monoxide, particulate matter (both TSP and PM₁₀), and fluorides.

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FEB 04 1997

BUREAU OF
AIR REGULATION

Should you have any questions, please feel free to call me at (904) 891-8850.

Sincerely,



Jennette Curtis
Environmental Administrator

Attachment

JC/ns

cc: ✓ A. Linero (FDEP)
V. Urban (USFWS)
E. Porter (USFWS)
A. Colaninno (USFS)
D. Wergowske (USFS)
D. Fulle (FWENC)
R. McGarrath (COT)
K. Bauer (COT)
F. Michel (RE&C)
A. Morrison (HGSS)
M. Bilello (FWENC)
D. Graziani (FWENC)
File 363.501, .511, .705

cc: Holladay
Costello

**REVISED ATTACHMENT 3
PURDOM PROJECT
PSD APPLICABILITY SUMMARY**

Pollutant	Net Increase in Emissions (tons/year)	Table 212.400-2 PSD Significance Criterion (tons/year)	Applicable PSD Significance Criterion (tons/year)	PSD Applicability Determination
Carbon Monoxide	127	100	0*	yes
Nitrogen Oxides	0	40	40	no
Sulfur Dioxide	0	40	40	no
Ozone (VOCs)	12	40	40	no
Particulate Matter	48	25	25	yes
Particulate Matter (PM ₁₀)	48	15	15	yes
Total Reduced Sulfur	NA	10	10	no
Reduced Sulfur Compounds	NA	10	10	no
Sulfuric Acid Mist	5.6	7	7	no
Fluorides	9.4	3	3	yes
Vinyl Chloride	NA	1	1	no
Lead	0.080	0.6	0.6	no
Mercury	0.0004	0.1	0.1	no
Asbestos	NA	0.007	0.007	no
Beryllium	0.00022	0.0004	0.0004	no

NA - No emissions information available or no emissions expected.

* Due to the proximity to the Class I area, lower criteria apply for those pollutants with a maximum projected 24-hour average impact of 1.0 microgram per cubic meter or more in the Class I area.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
WASHINGTON, D.C. 20240



ADDRESS ONLY THE DIRECTOR,
FISH AND WILDLIFE SERVICE

January 21, 1997

DEPARTMENT OF
ENVIRONMENTAL PROTECTION

JAN 28 1997

SITING COORDINATION

Mr. Hamilton S. Oven
Siting Coordination Office
Florida Department of Environmental Regulation
2600 Blair Stone Road, MS 480
Tallahassee, Florida 32399-2400

Dear Mr. Oven:

We have reviewed our copy of the January 9 letter from Ms. Jennette Curtis, City of Tallahassee, to you regarding the Purdom Unit 8 Project. We agree with Ms. Curtis that a regional haze analysis should not be required for this project. In addition, we agree that, in this case, the observer point for the VISCREEN analysis may be placed at the St. Marks Lighthouse.

If you have questions, please call me at (303) 969-2617.

Sincerely,

Ellen M. Porter
Environmental Specialist

cc:
Dave Wergowske
Air Resources Specialist
USDA Forest Service
2946 Chestnut St.
Montgomery, Alabama 36107

Ms. Jennette Curtis
City Hall
300 S. Adams St.
Tallahassee, Florida 32301-1731

cc: Cleve Holladay
Marty Costello



CITY HALL
300 S. ADAMS ST.
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City Auditor

Certified Mail No. P230 286 990

January 22, 1997

Mr. Hamilton S. Oven, Jr.
Siting Coordination Office
Department of Environmental Protection
2600 Blair Stone Road MS480
Tallahassee, FL 32399

Dear Mr. Oven:

Subject: Purdom Unit 8 Project
Revised Attachment 3 to my January 9, 1997 Letter

Attached please find a revised Attachment 3 to my January 9, 1997 letter to you regarding "Follow-up on Air Quality Approach." Messrs. Doug Fulle and Mike Bilello, of Foster Wheeler Environmental, have been discussing the letter and attachments with Mr. Cleve Holladay of FDEP's Air Division. During those conversations it was discovered that the preliminary air quality modelling at the St. Marks Class I area used to support Attachment 3 was inadvertently done using the proposed Unit 8 emissions rather than the proposed net increase in emissions. Revised modelling using the proper emissions has been done which indicates that **only carbon monoxide will have a maximum 24-hour average impact in the Class I area of greater than 1 ug/m³**. Therefore, it is only for carbon monoxide that the PSD significance criterion in Table 62-212.400-2 does not apply. The Applicable PSD Significance criteria for NO_x, SO₂, Particulate Matter and PM₁₀ revert back to the values in Table 62-212.400-2. These changes are reflected in the revised Attachment 3.

Please note that this change has no effect whatsoever on the pollutants subject to PSD, as indicated in the revised Attachment 3. These pollutants remain carbon monoxide, particulate matter (both TSP and PM₁₀), and fluorides.

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BUREAU OF
AIR REGULATION

Should you have any questions, please feel free to call me at (904) 891-8850.

Sincerely,



Jennette Curtis
Environmental Administrator

Attachment

JC/ns

cc: ✓ A. Linero (FDEP)
V. Urban (USFWS)
E. Porter (USFWS)
A. Colaninno (USFS)
D. Wergowske (USFS)
D. Fulle (FWENC)
R. McGarrah (COT)
K. Bauer (COT)
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M. Bilello (FWENC)
D. Graziani (FWENC)
File 363.501, .511, .705

cc: Holladay
Costello

REVISED ATTACHMENT 3
PURDOM PROJECT
PSD APPLICABILITY SUMMARY

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Ozone (VOCs)	12	40	40	no
Particulate Matter	48	25	25	yes
Particulate Matter (PM ₁₀)	48	15	15	yes
Total Reduced Sulfur	NA	10	10	no
Reduced Sulfur Compounds	NA	10	10	no
Sulfuric Acid Mist	5.6	7	7	no
Fluorides	9.4	3	3	yes
Vinyl Chloride	NA	1	1	no
Lead	0.080	0.6	0.6	no
Mercury	0.0004	0.1	0.1	no
Asbestos	NA	0.007	0.007	no
Beryllium	0.00022	0.0004	0.0004	no

NA - No emissions information available or no emissions expected.

* Due to the proximity to the Class I area, lower criteria apply for those pollutants with a maximum projected 24-hour average impact of 1.0 microgram per cubic meter or more in the Class I area.



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Hand Delivered

January 9, 1997

Mr. Hamilton S. Oven, Jr.
Siting Coordination Office
Department of Environmental Protection
2600 Blair Stone Road MS480
Tallahassee, FL 32399

RECEIVED

JAN 09 1997

BUREAU OF
AIR REGULATION

Dear Mr. Oven:

Subject: Purdom Unit 8 Project
Follow-up on Air Quality Approach

The purpose of this letter is to follow up on our meeting of September 25, 1996 at which we discussed our proposed air quality permitting approach to the Purdom Unit 8 Project. As you recall, we discussed the Project status, our Best Available Control Technology (BACT) and air quality modelling approaches, our plan to maintain annual emissions of SO₂ and NO_x the same as recent actuals through a "facility-wide cap," our expectations regarding increases in other pollutants, and obtained input regarding the air quality concerns of the Department of Environmental Protection (DEP), the U. S. Fish & Wildlife Service, and the U. S. Forest Service. We agreed at the meeting to provide more definitive emissions information for the Project as soon as it became available in order to allow DEP and the Federal Land Managers' (FLMs') representatives to make a final determination regarding the air quality analyses which would be required in the SCA/PSD/Title V application. This letter provides that emissions information, requests concurrence regarding the lack of need for a regional haze modelling analysis, and requests concurrence with our plan to conduct visible plume modelling within the St. Marks Wilderness Area Class I Area at a point near the St. Marks Lighthouse.

A summary of the existing emissions from the Purdom Plant was provided in Table 1-1 of the Preliminary Plan of Study dated September 10, 1996 and was revised slightly in the Final Plan of Study dated November 4, 1996. Since then there have been a few additional minor revisions in the existing emissions values due to reevaluations of some of the assumptions regarding emission factors, corrections of mathematical errors, etc. These changes have been made in an attempt to obtain the most accurate emission estimates possible. Our current estimates of the existing emissions from the Purdom Plant are contained in Attachment 1 (Revision 2 to Table 1-1 from the Plan of Study). A comparison with those in the Preliminary and Final Plans of Study will reveal that the changes from the earlier versions are not substantial.

The estimates of emissions from the proposed Project have taken some time to develop due to the "facility-wide cap" as well as the desire to maintain maximum fuel and unit operational flexibility within the restrictions of the cap. Further, there were delays in obtaining final emissions data from the combustion turbine vendor and from the cooling tower vendor. Finally, it was necessary to develop a series of operating scenarios for Unit 8, Unit 7, the existing combustion turbines (GT1 and GT2), the auxiliary boiler, and the cooling tower to identify the "worst-case" emissions on a pollutant by pollutant basis. Thus, it has taken us longer than anticipated to identify the emissions levels. However, the final emission levels have been identified and are presented in Attachment 2.

As you know, the determination of which pollutants trigger PSD for a major modification of a major stationary source is determined by whether the increases in emissions are "significant." Significance is determined by the values in Table 212.400 -2 of Rule 62-212.400 F.A.C. unless the increases would be at a source within 10 km of a Class I area and the increase would cause an impact in the Class I area of 1.0 ug/m^3 or more on a 24-hour average basis. The net increases in emissions (i.e., the difference between Attachment 1 and Attachment 2) as well as the appropriate significance criterion have been examined for each of the PSD regulated pollutants and the results are presented in Attachment 3. As indicated, there will be no net increase in emissions of SO_2 , NO_x , asbestos, vinyl chloride, reduced sulfur compounds, and total reduced sulfur. There will be net increases in emissions of VOCs, Pb, Be, Hg, and sulfuric acid mist, but they will not be significant. Finally, there will be significant net increases for PM, PM_{10} , CO, and fluorides. Thus, formal PSD review will be triggered by the proposed modification only for these four pollutants.

It was indicated at the September 25, 1996 meeting that the determination of whether a regional haze type visibility analysis would be requested by the U. S. Fish & Wildlife Service hinged on the net increase in emissions of particulates. As indicated in Attachment 3, the maximum net increase in particulate matter emissions is estimated to be 48 tons/yr, approximately 10.5 tons/yr of which is estimated to come from the cooling tower. We believe that this increase in particulate emissions is minor, especially since the cooling tower emissions are for the most part likely to be deposited with the drift droplets close to the source. Therefore, we request your concurrence that a regional haze analysis is not required.

Also with respect to visibility, a visible plume analysis is planned, as indicated in the Plan of Study and Modelling Protocol. This will be done using the VISCREEN model. As requested by the FLM's representative, a background visual range of 65 km will be used in the analysis as one of the input parameters. Another required input parameter is the minimum distance to the Class I area. As this distance is so small in this case (0.6 km), it is requested that the distance from the Plant to a point near the St. Marks Lighthouse (9.6 km) be used instead. We believe that this location is really the closest vantage point from within the St. Marks Wilderness Area from which people would actually be able to see toward the Plant. As requested by the U.S. Forest Service, a VISCREEN analysis will also be conducted for the Bradwell Bay Wilderness Area.

Mr. Hamilton S. Oven, Jr.

January 9, 1997

Page 3

For your information, a monitoring exemption request covering the PSD triggered pollutants (PM, PM₁₀, CO, and fluorides) is being prepared in accordance with Rule 62-212.400(3)(e). It will be submitted separately, but will indicate that preconstruction monitoring is not indicated for any of these pollutants.

Due to our pressing schedule, we are proceeding with the air quality analyses in accordance with the approaches outlined above. If you do not concur with these approaches, please let us know as soon as possible, preferably by January 17, 1997. Should you have any questions on this letter, please call me at (904) 891-8850.

Sincerely,



Jennette Curtis

Environmental Administrator

Attachments

cc: ✓ A. Linero (FDEP)
J. White (USFWS)
E. Porter (USFWS)
A. Colaninno (USFS)
D. Wergowske (USFS)
D. Fulle (FWENC)
R. McGarrah (COT)
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F. Michel (RE&C)
A. Morrison (HGSS)
M. Bilello (FWENC)
D. Graziani (FWENC)
File 363.501
File 363.511
File 363.705

cc: C. Holladay

ATTACHMENT 1 - REV 2 OF TABLE 1-1

TABLE 1-1
Recent Air Pollutant Emissions (Allowables and Actuals)^(1,4)
(tons/year)

Pollutant	UNIT 5				UNIT 6				UNIT 7				GT1 & GT2 ^(1,5)				UNITS 5, 6, 7 & GTs	
	Actual Fuel Oil	Actual Nat. Gas	Actual Totals	Allowable Totals ⁽¹⁾	Actual Fuel Oil	Actual Nat. Gas	Actual Totals	Allowable Totals ⁽¹⁾	Actual Fuel Oil	Actual Nat. Gas	Actual Totals	Allowable Totals ⁽¹⁾	Actual Fuel Oil	Actual Nat. Gas	Actual Totals	Allowable Totals ⁽¹⁾	Actual Totals	Allowable Totals ⁽¹⁾
Particulate Matter ^(2,3)	0.01	1.24	1.25	164.30	0.17	1.22	1.39	164.30	2.30	5.28	7.58	340.00	0.04	0.46	0.50	NR	10.72	668.60 ^(1,6)
PM ₁₀	0.01	1.24	1.25	164.30	0.17	1.22	1.39	164.30	2.30	5.28	7.58	340.00	0.04	0.46	0.50	NR	10.72	668.60 ^(1,6)
Sulfur Dioxide ⁽³⁾	0.30	0.22	0.52	1710.00 ⁽⁴⁾	3.53	0.22	3.75	1710.00 ⁽⁴⁾	74.60	0.93	75.53	5100.00	0.23	0.01	0.24	687.61	80.04	9207.61
Nitrogen Oxides ⁽⁴⁾	0.05	68.08	68.13	NR	1.44	139.22	140.66	NR	0.9	0.9	251.24	NR	0.50	6.86	7.36	NR	467.39	NR
Carbon Monoxide ⁽⁷⁾	0.01	9.90	9.91	NR	0.11	10.13	10.24	NR	2.24	42.24	44.48	NR	0.03	1.71	1.74	NR	66.37	NR
Volatile Organic Compounds ⁽⁸⁾	0.00	0.29	0.29	NR	0.02	0.30	0.32	NR	0.34	1.49	1.83	NR	0.01	0.37	0.38	NR	2.82	NR
Lead ⁽⁹⁾	3.3E-5	NA	3.3E-5	NR	0.001	NA	0.001	NR	0.01	NA	0.01	NR	0.00	N/A	0.00	NR	0.011	NR
Asbestos	NA	NA	NA	NR	NA	NA	NA	NR	NA	NA	NA	NR	N/A	N/A	N/A	NR	NA	NR
Beryllium ⁽¹⁰⁾	0.00	NA	0.00	NR	0.00	NA	0.00	NR	0.0003	NA	0.0003	NR	0.00	N/A	0.00	NR	0.0003	NR
Mercury ⁽¹¹⁾	5.4E-6	1.9E-7	5.6E-6	NR	1.0E-4	2.0E-7	1.0E-4	NR	0.002	8.2E-7	0.002	NR	6.59E-07	1.2E-08	6.66E-07	NR	0.002	NR
Vinyl Chloride	NA	NA	NA	NR	NA	NA	NA	NR	NA	NA	NA	NR	NA	NA	NA	NR	NA	NR
Fluorides ⁽¹²⁾	0.001	NA	0.001	NR	0.02	NA	0.02	NR	0.38	NA	0.38	NR	NA	NA	NA	NR	0.40	NR
Sulfuric Acid Mist ⁽¹³⁾	0.01	0.03	0.04	NR	0.13	0.03	0.16	NR	2.71	0.11	2.82	NR	NA	NA	NA	NR	3.02	NR
Hydrogen Sulfide	NA	NA	NA	NR	NA	NA	NA	NR	NA	NA	NA	NR	NA	NA	NA	NR	NA	NR
Total Reduced Sulfur	NA	NA	NA	NR	NA	NA	NA	NR	NA	NA	NA	NR	NA	NA	NA	NR	NA	NR
Reduced Sulfur Compounds	NA	NA	NA	NR	NA	NA	NA	NR	NA	NA	NA	NR	NA	NA	NA	NR	NA	NR

Period of Record: August 1994-July 1996. All actual fuel usage data for Units 5 and 6 and data through March 1995 for Unit 7 is obtained from monthly generation reports. Fuel usage data for Unit 7 after March 1995 is based on CEMS.

NR - No restrictions

NA - No emissions information available or no emissions expected.

⁽¹⁾ Allowable totals based on emissions limitations contained in State of Florida Permit Number A065-242831 and A065-242827

⁽²⁾ It is assumed that all PM emissions are that of PM₁₀.

⁽³⁾ Actual PM emissions from the boilers for fuel oil are based on the most recent PM test results during both normal and sootblowing operations and actual fuel usage. PM emission from the boilers for natural gas are based on an AP-42 factor and actual fuel usage.

⁽⁴⁾ Allowable SO₂ emissions based on requested SO₂ emissions limitation of 1.3 lb/mmBtu.

⁽⁵⁾ Actual SO₂ emissions for fuel oil are based on an AP-42 formula, percent sulfur in the fuel oil (as-burned analyses for the boilers) and actual fuel usage. SO₂ emissions for natural gas are based on the sulfur content (FGT data) and the actual natural gas usage.

⁽⁶⁾ Actual NO_x emissions for fuel oil and natural gas for Units 5 and 6 are based on an AP-42 factor and actual fuel usage. NO_x emissions for Unit 7 are based on CEMS lb/mmBtu data and total actual fuel usage.

⁽⁷⁾ Actual CO emissions are based on AP-42 factors and actual fuel usage.

⁽⁸⁾ Actual VOC emissions are based on AP-42 factors and actual fuel usage.

⁽⁹⁾ Actual lead emissions are based on AP-42 factors and actual fuel usage.

⁽¹⁰⁾ Actual beryllium emissions are based on AP-42 factors and actual fuel usage.

⁽¹¹⁾ Actual mercury emissions for fuel oil are based on AP-42 factors and actual fuel usage. Actual mercury emissions for natural gas are based on an EPRI factor (no AP-42 factor available) and actual fuel usage.

⁽¹²⁾ Actual fluoride emissions for boilers are based on available FCG factors (no AP-42 factor available) for hydrogen fluoride and actual fuel usage.

⁽¹³⁾ Actual sulfuric acid mist emissions for boilers on fuel oil are based on the AP-42 factor for sulfur trioxide and actual fuel usage; actual sulfuric acid mist emission for boilers on natural gas are based on ten percent of sulfur dioxide and actual fuel usage.

⁽¹⁴⁾ Actual emissions are based on current estimates and emission factors which are subject to change.

⁽¹⁵⁾ The CEMS data on which actual NO_x emissions are based does not distinguish between oil and natural gas consumption.

⁽¹⁶⁾ Actual fuel oil and natural gas emission rate values reflect the sum of emissions from both combustion turbines.

⁽¹⁷⁾ Actual emissions are based on AP-42 factors and actual fuel usage

⁽¹⁸⁾ Allowable totals shown do not include the particulate emissions from the two combustion turbines since Permit A065-242827 has no limit for particulates.

**ATTACHMENT 2
PURDOM PROJECT
WORST-CASE ANNUAL POLLUTANT EMISSION RATES
(UNIT 7, UNIT 8, GT1, GT2, COOLING TOWER AND AUX BOILER)**

Pollutant	Annual Emissions (tons/year)	Scenario
Carbon Monoxide	194	9
Nitrogen Oxides	467	7
Sulfur Dioxide	80	6
Ozone (VOCs)	15.1	9
Particulate Matter	59.1	4
Particulate Matter (PM ₁₀)	59.1	4
Total Reduced Sulfur	NA	NA
Reduced Sulfur Compounds	NA	NA
Sulfuric Acid Mist	8.7	2
Fluorides	9.8	2
Vinyl Chloride	NA	NA
Lead	0.091	2
Mercury	0.0024	2
Asbestos	NA	NA
Beryllium	0.00052	2

NA - No emissions information available or no emissions expected.

Scenario 1	Unit 8 as controlling unit, operating 8,760 hours on natural gas/Unit 7 firing #6 oil SO ₂ limit 1.87 lb/mmBtu (Unit 7 hours limited by SO ₂ cap)
Scenario 2	Unit 8 as controlling unit, operating max hours on #2 fuel oil/no operation of Unit 7 (Unit 8 hours limited by SO ₂ cap)
Scenario 3	Unit 7 as controlling unit, max hours on #6 fuel oil 1.87 lb/mmBtu/no operation of Unit 8 (Unit 7 hours limited by SO ₂ cap)
Scenario 4	Unit 8 as controlling unit, operating 8,760 hours on natural gas/Unit 7 operating on #6 oil assume typical S content (approx 0.95 lb/mmBtu) (Unit 7 hours limited by SO ₂ cap)
Scenario 5	Unit 8 as controlling unit, operating 8,760 hours on natural gas/Unit 7 operation on natural gas (Unit 7 hours limited by NO _x cap)
Scenario 6	Unit 7 as controlling unit, max hours on #6 fuel oil assume typical S content (approx 0.95 lb/mmBtu)/ no operation of Unit 8 (Unit 7 hours limited by SO ₂ cap)
Scenario 7	Unit 7 as controlling unit, max hours on natural gas/ no operation of Unit 8 (Unit 7 hours limited by NO _x cap)
Scenario 8	Unit 8 as controlling unit, operating 8,260 hours on natural gas & 500 hr on #2 Oil/Unit 7 on #6 oil typical S content 1% (approx 0.95 lb/mmBtu) (Unit 7 hours limited by SO ₂ cap)
Scenario 9	Unit 8 as controlling unit, operating 8,260 hours on natural gas & 500 hr on #2 oil/Unit 7 on natural gas (Unit 7 hours limited by NO _x cap)
Scenario 10	Unit 8 as controlling unit, operating 7,021 hrs on natural gas & 425 hr on #2 oil/Unit 7 on #6 oil assume typical S content 1% (approx 0.95 lb/mmBtu) (Unit 7 hours limited by SO ₂ cap)
Scenario 11	Unit 8 as controlling unit (85% cap.) operating 7,021 hours on natural gas & 425 hr on #2 oil/Unit 7 on natural gas (Unit 7 hours limited by NO _x cap)

**ATTACHMENT 3
PURDOM PROJECT
PSD APPLICABILITY SUMMARY**

Pollutant	Net Increase in Emissions (tons/year)	Table 212.400-2 PSD Significance Criterion (tons/year)	Applicable PSD Significance Criterion (tons/year)	PSD Applicability Determination
Carbon Monoxide	127	100	0*	yes
Nitrogen Oxides	0	40	0*	no
Sulfur Dioxide	0	40	0*	no
Ozone (VOCs)	12	40	40	no
Particulate Matter	48	25	0*	yes
Particulate Matter (PM ₁₀)	48	15	0*	yes
Total Reduced Sulfur	NA	10	10	no
Reduced Sulfur Compounds	NA	10	10	no
Sulfuric Acid Mist	5.6	7	7	no
Fluorides	9.4	3	3	yes
Vinyl Chloride	NA	1	1	no
Lead	0.080	0.6	0.6	no
Mercury	0.0004	0.1	0.1	no
Asbestos	NA	0.007	0.007	no
Beryllium	0.00022	0.0004	0.0004	no

NA - No emissions information available or no emissions expected.

* Due to the proximity to the Class I area, lower criteria apply for those pollutants with a maximum projected 24-hour average impact of 1.0 microgram per cubic meter or more in the Class I area.



CITY HALL
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TALLAHASSEE, FL
32301-1731
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TDD 1-800/955-8771

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ROBERT B. INZER
City Treasurer-Clerk

JAMES R. ENGLISH
City Attorney
RICARDO FERNANDEZ
City Auditor

Certified Mail No. P230 286 989

January 15, 1997

Mr. Hamilton S. Oven, Jr.
Siting Coordination Office
Department of Environmental Protection
2600 Blair Stone Road MS480
Tallahassee, FL 32399

RECEIVED
JAN 21 1997
BUREAU OF
AIR REGULATION

Dear Mr. Oven:

Subject: Purdom Unit 8 Project
Monitoring Exemption Request

As indicated in my letter to you dated January 9, 1997, the City of Tallahassee has had a preliminary air quality impact analysis conducted in support of a monitoring exemption request for the subject project. The analysis and the request for an exemption from the pre- and post-construction monitoring requirements of Rules 62-212.400(5)(f) and (g) F.A.C., respectively, as allowed under Rule 62-212.400(3)(e) F.A.C., are attached.

Please provide a written response to this request by the end of January, if possible. If a decision on post-construction monitoring cannot be made at this time, we would appreciate a timely decision on the pre-construction monitoring. Should you have any questions, please feel free to call me at (904) 891-8850.

Sincerely,

Jennette Curtis
Environmental Administrator

Attachment

JC/ns

cc: A. Linero (FDEP)
V. Urban (USFWS)
E. Porter (USFWS)
A. Colaninno (USFS)
D. Wergowske (USFS)
D. Fulle (FWENC)
R. McGarrah (COT)
K. Bauer (COT)

F. Michel (RE&C)
A. Morrison (HGSS)
M. Bilello (FWENC)
D. Graziani (FWENC)
File 363.501
File 363.511
File 363.705

cc: C. Holladay

OVENLTR.DOC/1/15/97

MONITORING EXEMPTION REQUEST

Preliminary Air Quality Modelling Assessment

In order to determine if the proposed project's impacts would be insignificant and therefore be eligible for pre- and post-construction monitoring exemptions under the Prevention of Significant Deterioration (PSD) rules (Rule 62-212.400(3)(e) F.A.C.), a modelling analysis was conducted. This analysis used procedures described in the Environmental Protection Agency's (EPA's) New Source Review Workshop Manual (Draft) (EPA 1990), as well as the project-specific modelling procedures and protocol accepted by the Florida Department of Environmental Protection (FDEP). The approach and results are described in the following paragraphs.

The Purdom site was determined to be a "rural" area for modelling based upon the technique for urban/rural determinations as documented in the EPA Guideline on Air Quality Models (EPA, 1996). The Industrial Source Complex - Short Term 3 (ISCST3) dispersion model, as described in a User's Guide (EPA 1995), was selected for application in the air quality impact analysis used to identify the need for monitoring. Version 96113 of ISCST3, downloaded from the EPA bulletin board, was used. Because of the general lack of variation in site elevation, the flat terrain option of the ISCST3 model was utilized. The regulatory default mode was also used. The ISCST3 model was used to determine the highest concentrations and the period of occurrence for 1-hour, 3-hour, 8-hour, 24-hour, and annual averaging periods at each of 632 receptors for each full year of hourly meteorological data used. Tallahassee surface and Apalachicola upper air meteorological data, supplied by the FDEP, for the years 1985-1989 were utilized.

Ambient concentrations were predicted for receptors in a polar grid consisting of 36 radial directions at 10 degree intervals at distances listed below (in kilometers) from the origin, the proposed Unit 8 stack location (UTM coordinates 769.611 km east, 3339.767 km north):

0.5	2.5	4.5	7.0
1.0	3.0	5.0	8.0
1.5	3.5	5.5	9.0
2.0	4.0	6.0	10.0

Receptors within the project site boundaries were not included but additional receptors were placed around the site boundary. Figure 1 presents the location of the preliminary modelling receptors.

A comparison of the Unit 8 stack with that allowed by the Good Engineering Practice (GEP) stack height regulations (Rule 62-210.550 F.A.C.) was made. The EPA Building Profile Input Program (BPIP) software program (EPA, 1995a) was used for this purpose and to provide building induced downwash parameters to the ISCST3 model. All the major existing and proposed structures at the Purdom site were included in the analysis. The proposed Unit 8 stack height of 60.97 meters was found to be above the calculated GEP height of 60.0 meters and within the allowable GEP height of 65 meters determined by the BPIP program and therefore in compliance with the FDEP stack height policy.

Cavity calculations were performed for the existing Unit 7, the two existing combustion turbines (GT1/GT2), and the new auxiliary boiler using the SCREEN3 Model. Cavity calculations were

Purdom Unit 8

not appropriate for Unit 8, as its stack will be GEP. The results indicate that the critical wind speed is greater than 20 m/s for Unit 7 and the existing GT1/GT2, and the model sets the cavity concentration to zero. The new auxiliary boiler will have a cavity which can extend 9 meters out from any side of the building, depending on the wind direction. The auxiliary boiler will be approximately 11 meters from the nearest site boundary.

In order to determine the "worst case" conditions, preliminary modelling runs were conducted using one year of meteorology at three ambient temperatures (95°F, 59°F, and 20°F) and three loads (100%, 75%, and 50%) for both natural gas and fuel oil. Thus, there were a total of 18 preliminary modelling runs conducted using the 1985 meteorological data set. Only Unit 8 was included in these preliminary runs. A summary of the preliminary modelling runs is presented in Table 1. As a result of these preliminary runs, it was determined that the 20°F at 50% load firing fuel oil case for Unit 8 produced the "worst case" impacts for all short-term averaging periods and pollutants.

In accordance with Rule 62-212.400(2)(f)3, F.A.C., only pollutants for which the net increase in emissions exceed certain applicability thresholds are subject to PSD preconstruction review (including the preconstruction air quality monitoring). The net changes in emissions for this project were determined and are presented in Table 2, along with the applicable thresholds. Based on these results, it was determined that only particulate matter (both PM and PM₁₀), carbon monoxide (CO) and fluorides (Fl) trigger PSD. For this application, emissions of PM (total suspended particulates) and particulate matter less than 10 microns in diameter (PM₁₀) were considered to be equal. As a result of this analysis, the remainder of this monitoring exemption request is restricted to PM₁₀, CO, and Fl. (There is no monitoring de minimus level for PM (TSP)).

After the "worst case" temperature/load condition was determined for Unit 8, the proposed project (including the retirement of Units 5 & 6) was modelled using all applicable sources on site. The net change in emission rates associated with the modification were determined by subtracting the current actual emission rates (Aug 1994 - Jul 1996) from the future emission rates. A summary of unit specific emission rates is included as Attachment 1. Each of the pollutants was modelled using five years of meteorological data and the receptors indicated in Figure 1. Table 3 presents the results of this preliminary modelling.

As indicated in the modelling protocol, an additional refined receptor grid was added, centered on the receptor which contained the highest predicted impact from the preliminary modelling runs. This refined grid contained 121 receptors spaced at 0.1 km. Figures 2 and 3 depict the locations of these receptors along with the original receptors.

These more refined receptor grids were used with the year of meteorological data which produced the highest preliminary impact. The "worst case" load and ambient temperature combinations described above were also used in the refined analysis. The results are presented in Table 4.

Monitoring Exemption Request

As indicated in Table 4, the maximum modelled ambient impacts of the project are below the monitoring de minimus levels, which indicates that pre- and post-construction monitoring exemptions for PM₁₀, CO, and FI should be granted in accordance with Rule 62-212.400(3)(e), F.A.C.

References

- U.S. Environmental Protection Agency. 1996. Guideline on Air Quality Models. 40 CFR51 Appendix W. Office of Air Quality Planning and Standards. Research Triangle Park, NC.
- U.S. Environmental Protection Agency. 1990. Draft New Source Review Workshop Manual. Office of Air Quality Planning and Standards. Research Triangle Park, NC.
- U.S. Environmental Protection Agency. 1995. Users Guide for the Industrial Source Complex (ISC3) Dispersion Models. Volumes I. EPA 4541B-95-003 a-b. Office of Air Quality Planning and Standards. Research Triangle Park, NC.
- U.S. Environmental Protection Agency. 1995a. Users Guide Profile Input Program (Revised Feb. 8, 1995). EPA 454/R-93-038. Office of Air Quality Planning and Standards. Research Triangle Park, NC.

Purdom Unit 8

**TABLE 1
PURDOM UNIT 8 PRELIMINARY MODELLING RESULTS USING 1985 MET DATA**

Fuel	Load (%)	Temp (°F)	Maximum NO ₂ (µg/m ³)	Maximum SO ₂ (µg/m ³)			Maximum CO (µg/m ³)		Maximum PM ₁₀ (µg/m ³)	
			Annual	3-Hour	24-Hour	Annual	1-Hour	8-Hour	24-Hour	Annual
Natural Gas	100	95	0.06	0.26	0.06	0.005	4.3	0.9	0.14	0.010
Natural Gas	100	59	0.06	0.28	0.06	0.005	4.7	1.0	0.14	0.010
Natural Gas	100	20	0.06	0.29	0.07	0.005	5.0	1.1	0.14	0.009
Natural Gas	75	95	0.06	0.24	0.06	0.005	4.5	1.0	0.17	0.012
Natural Gas	75	59	0.06	0.25	0.06	0.005	4.9	1.1	0.17	0.012
Natural Gas	75	20	0.07	0.27	0.07	0.005	5.3	1.1	0.17	0.012
Natural Gas	≈55	95	0.06	0.30	0.06	0.005	12.1	2.6	0.21	0.015
Natural Gas	50	59	0.06	0.28	0.06	0.005	12.8	2.8	0.21	0.015
Natural Gas	50	20	0.07	0.32	0.07	0.005	13.6	2.9	0.21	0.016
Fuel Oil	100	95	0.26	5.0	1.3	0.08	14.1	3.0	0.26	0.02
Fuel Oil	100	59	0.30	5.5	1.4	0.09	15.4	3.2	0.26	0.02
Fuel Oil	100	20	0.31	6.3	1.4	0.10	16.7	3.1	0.22	0.02
Fuel Oil	75	95	0.30	4.5	1.2	0.09	17.6	3.7	0.30	0.02
Fuel Oil	75	59	0.34	5.0	1.3	0.10	18.1	3.8	0.30	0.02
Fuel Oil	75	20	0.36	5.4	1.4	0.10	18.9	3.9	0.30	0.02
Fuel Oil	50	95	0.29	4.0	1.2	0.09	34.9	8.7	0.39	0.03
Fuel Oil	50	59	0.33	5.9	1.3	0.10	45.4	9.3	0.38	0.03
Fuel Oil	50	20	0.37	6.3	1.4	0.11	46.4	9.9	0.39	0.03

Purdom Unit 8

**TABLE 2
PURDOM PROJECT
PSD APPLICABILITY SUMMARY**

Pollutant	Net Increase in Emissions (tons/year)	Table 212.400-2 PSD Significance Criterion (tons/year)	Applicable PSD Significance Criterion (tons/year)	PSD Applicability Determination
Carbon Monoxide	127	100	0*	yes
Nitrogen Oxides	0	40	0*	no
Sulfur Dioxide	0	40	0*	no
Ozone (VOCs)	12	40	40	no
Particulate Matter (TSP)	48	25	0*	yes
Particulate Matter (PM ₁₀)	48	15	0*	yes
Total Reduced Sulfur	NA	10	10	no
Reduced Sulfur Compounds	NA	10	10	no
Sulfuric Acid Mist	5.6	7	7	no
Fluorides (F1)	9.4	3	3	yes
Vinyl Chloride	NA	1	1	no
Lead	0.080	0.6	0.6	no
Mercury	0.0004	0.1	0.1	no
Asbestos	NA	0.007	0.007	no
Beryllium	0.00022	0.0004	0.0004	no

NA - No emissions information available or no emissions expected.

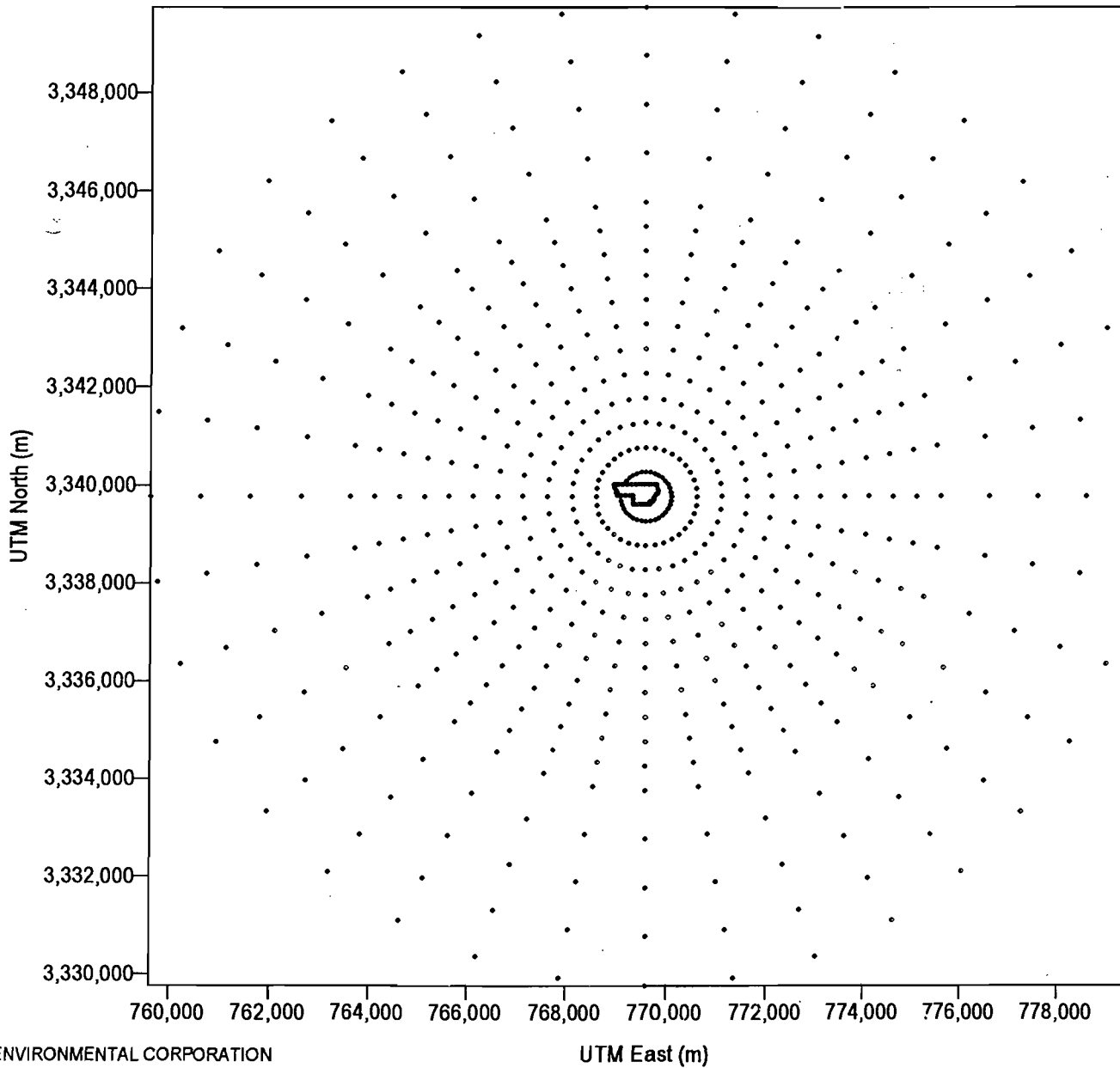
* Due to the proximity to the Class I area, lower criteria apply for those pollutants with a maximum projected 24-hour average impact of 1.0 microgram per cubic meter or more in the Class I area.

**TABLE 3
PRELIMINARY MONITORING EXEMPTION ANALYSIS
MODELLING SUMMARY**

Pollutant	Averaging Period	Monitoring Sig. Value ($\mu\text{g}/\text{m}^3$)	1985 ($\mu\text{g}/\text{m}^3$)	1986 ($\mu\text{g}/\text{m}^3$)	1987 ($\mu\text{g}/\text{m}^3$)	1988 ($\mu\text{g}/\text{m}^3$)	1989 ($\mu\text{g}/\text{m}^3$)
PM ₁₀	24-hr	10	3.8	6.5	5.4	5.5	3.9
CO	8-hr	575	3.4	4.6	5.1	4.2	4.3
F1	24-hr	0.25	0.08	0.11	0.12	0.09	0.09

**TABLE 4
REFINED MODELLING RESULTS FOR MONITORING EXEMPTION**

Pollutant	Averaging Time	Maximum Impact ($\mu\text{g}/\text{m}^3$)	Monitoring De Minimus Level ($\mu\text{g}/\text{m}^3$)	Monitoring Required
PM ₁₀	24-hr	6.5	10	No
CO	8-hr	5.4	575	No
F1	24-hr	0.13	0.25	No

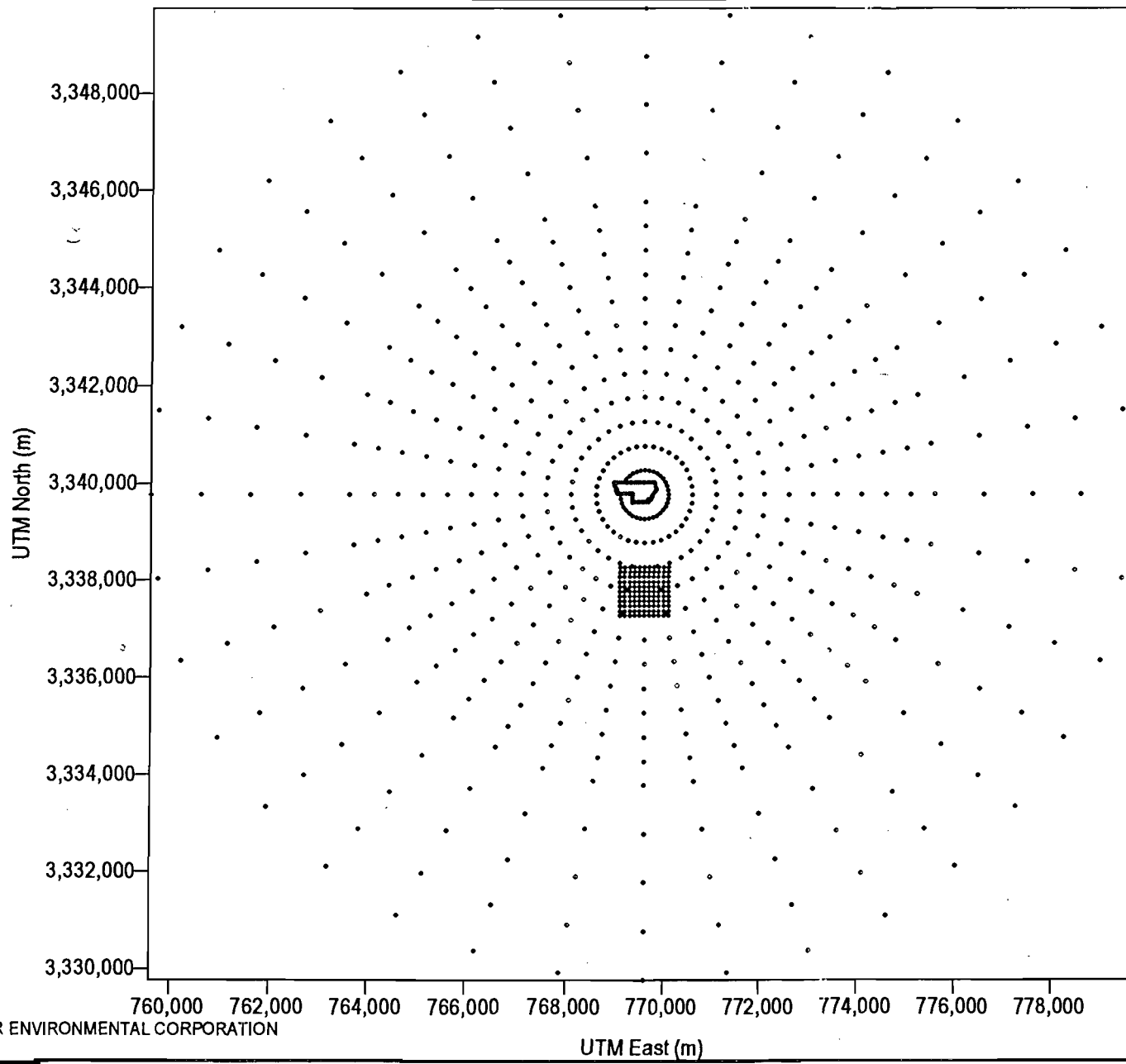


SOURCE: FOSTER WHEELER ENVIRONMENTAL CORPORATION



PURDOM UNIT 8 MONITORING EXEMPTION REQUEST
PRELIMINARY ISCST3 MODELLING RECEPTORS
PURDOM UNIT 8 PROJECT - ST MARKS, FLORIDA

Figure
1

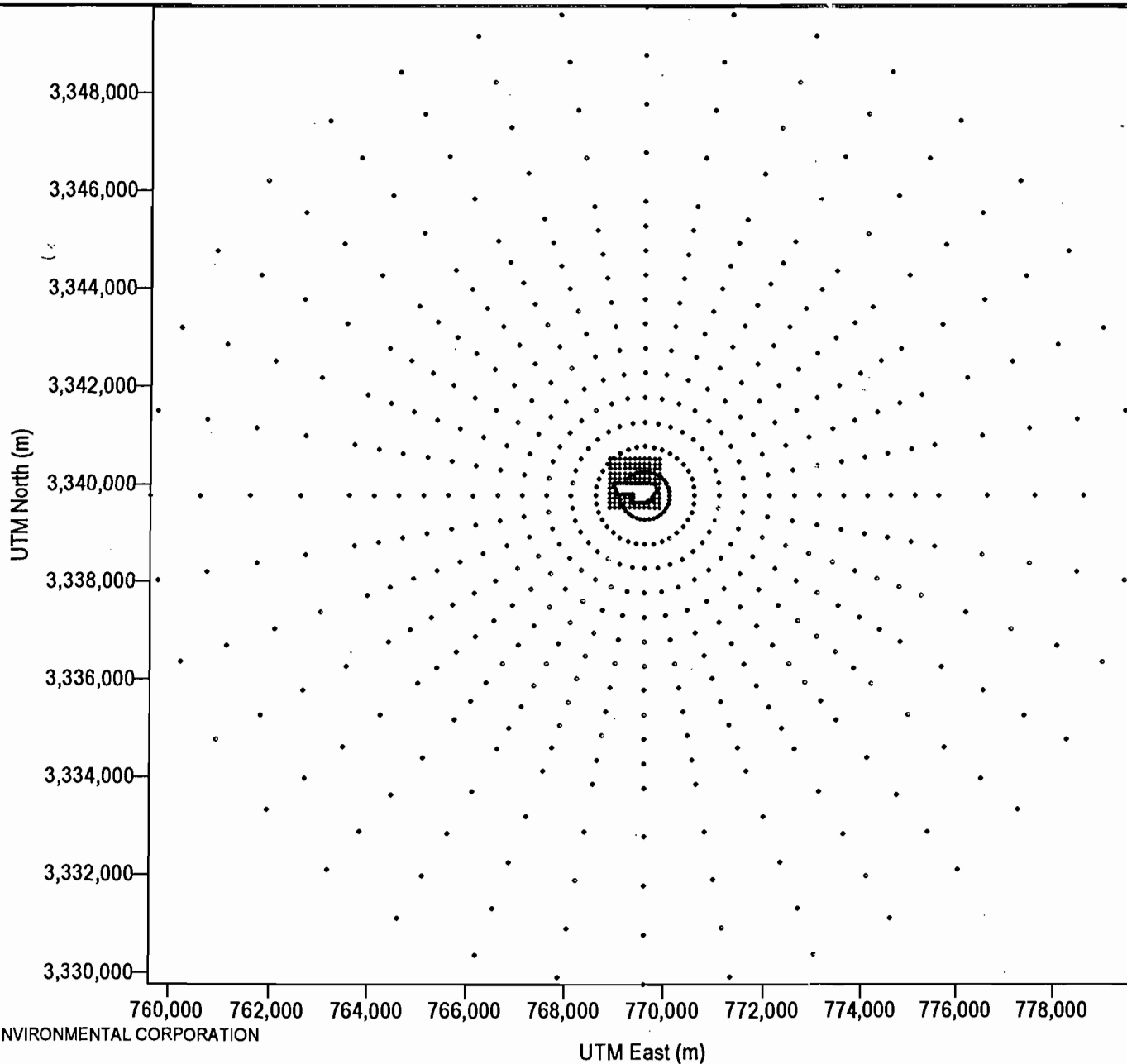


SOURCE: FOSTER WHEELER ENVIRONMENTAL CORPORATION

PURDOM UNIT 8 MONITORING EXEMPTION REQUEST
 CARBON MONOXIDE AND FLUORIDE
 ISCST3 PRELIMINARY AND REFINED RECEPTORS
 PURDOM UNIT 8 PROJECT - ST MARKS, FLORIDA

Figure
 2





SOURCE: FOSTER WHEELER ENVIRONMENTAL CORPORATION



PURDOM UNIT 8 MONITORING EXEMPTION REQUEST
 PARTICULATE MATTER
 ISCST3 PRELIMINARY AND REFINED RECEPTORS
 PURDOM UNIT 8 PROJECT - ST MARKS, FLORIDA

Figure
 3

MONITORING EXEMPTION

EMISSION RATES BASED ON:

Future Emis (yr 2000) - Current Actual

	CURRENT ACTUAL PERIOD	UNIT 1-4				UNIT 5				UNIT 6				UNIT 7			
		SHEET #	FUTURE -CURRENT	=(g/s)		SHEET #	FUTURE -CURRENT	.(g/s)		SHEET #	FUTURE -CURRENT	(g/s)		SHEET #	FUTURE -CURRENT	(g/s)	
PM SHORT	Aug94Jul96	NO-NO	0.00	0.00	0.00	NO - 6	0.00	4.73	-4.73	NO - 6	0.00	4.73	-4.73	4 - 6	9.79	9.79	0.00
CO SHORT	Aug94Jul96	NO-NO	0.00	0.00	0.00	NO - 6	0.00	1.26	-1.26	NO - 6	0.00	1.26	-1.26	4 - 6	2.61	2.61	0.00
FI SHORT	Aug94Jul96	NO-NO	0.00	0.00	0.00	NO - 6	0.00	0.2121	-0.2121	NO - 6	0.0E+00	2.1E-01	-2.1E-01	4 - 6	4.4E-01	4.4E-01	0.0E+00

MONITORING EXEMPTION

EMISSION RATES BASED ON:

Future Emis (yr 2000) - Current Actual

	CURRENT ACTUAL PERIOD	UNIT GT1			UNIT GT2			UNIT ε		UNIT Cooling Tower		AUXILIARY BOILER			
		SHEE	FUTURE	CURRENT	(g/s)	SHEET #	FUTURE	CURRENT	(g/s)	SHEET #	(g/s)	SHEET #	(g/s)		
PM SHORT	Aug94Jul96	4 - 6	1.09	1.09	0.00	4 - 6	1.09	1.09	0.00	4	2.14	4	0.30	NA**	NA
CO SHORT	Aug94Jul96	4 - 6	1.38	1.38	0.00	4 - 6	1.38	1.38	0.00	4	12.11	NA	NA	NA**	NA
FI SHORT	Aug94Jul96	4 - 6	1.8E-01	1.8E-01	0.0E+00	4 - 6	1.8E-01	1.8E-01	0.0E+00	4	9.8E-01	NA	NA	NA**	NA

** aux Boiler will never operate with the other steam units (unit 7 & 8) so it is not included in any "short term" Modelling

NO = Not Operating

CITY OF TALLAHASSEE

FINAL PLAN OF STUDY AND AIR QUALITY MODELLING PROTOCOL

PURDOM UNIT 8

NOVEMBER 4, 1996

**Foster Wheeler Environmental Corporation
in association with
Raytheon Engineers & Constructors and Moore/Bowers**



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Purdom Unit 8

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Purdom Unit 8

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1.0 THE PURDOM UNIT 8 PROJECT

1.1 INTRODUCTION

The City of Tallahassee has initiated engineering and environmental studies for the purpose of preparing the necessary permit applications for a proposed new unit (Unit 8) at its existing Purdom Generating Station in St. Marks, Wakulla County, Florida. The location of the Purdom Generating Station is depicted in Figure 1-1.

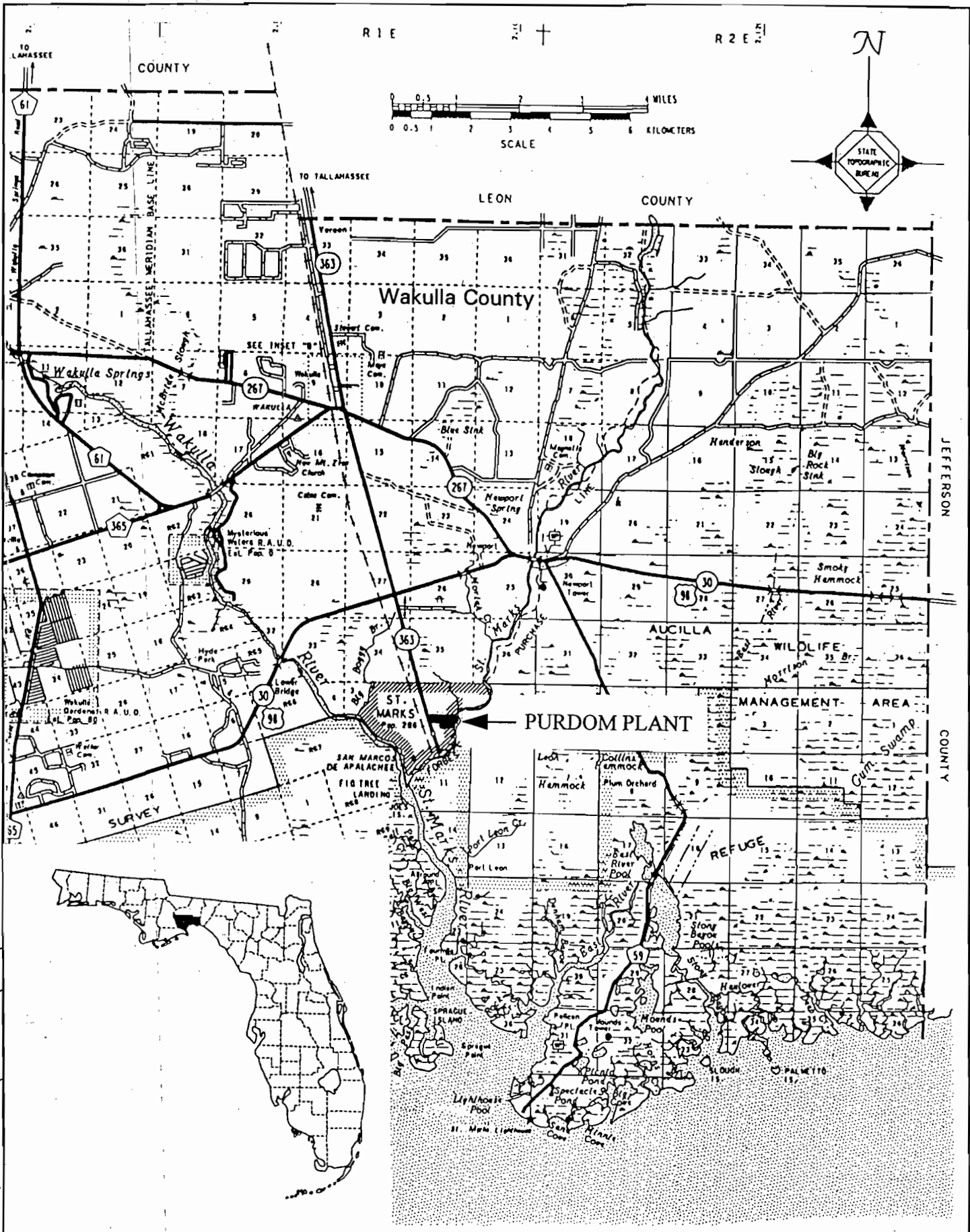
The primary purposes of this Plan of Study are to provide preliminary information about the project (which includes the early retirement of Purdom Units 5 and 6) and to initiate discussions between the City of Tallahassee as the applicant, the regulatory agencies, and other interested parties. The format deliberately highlights the study objectives that are expected to be of greatest interest for this particular project in order to focus attention on those key aspects of the project at an early stage of the permit application process. The intent is to encourage a productive, collaborative "scoping" process with regulatory agencies, the local community, and environmental and other interest groups. In addition to circulating the Plan of Study, the City of Tallahassee will sponsor several public meetings to inform citizens about the project and seek public input.

The Plan of Study is also intended to clarify the proposed approach to preparation of the Department of Environmental Protection's (DEP's) permit application for power plants under the Florida Electrical Power Plant Siting Act, known as a Site Certification Application (SCA). In general, the SCA for the Purdom Unit 8 project will follow the prescribed format and include the data and analysis called for in the Instruction Guide for Certification Application [DEP Form 62-1.211(1)]. However, as with every project, there are unique aspects of the setting and proposed project design that suggest a slightly modified approach on certain topics required to be addressed in the application. This Plan of Study identifies those unique aspects of the project and describes the proposed approach to application preparation. Appendix A to this Plan of Study provides a proposed outline for the application and cross-references to the sections of this plan in which the various SCA sections are discussed. The City of Tallahassee intends to apply for certification of the entire Purdom site, based on its existing permits, pursuant to the optional procedure available under Section 403.5175, Florida Statutes.

1.2 REASON FOR THE PROJECT

The City of Tallahassee Electric Department's mission is "to provide high quality, reliable, competitively priced electric services within [its] retail and wholesale market areas." The Purdom Unit 8 Project is being proposed for three reasons:

- To meet the electric generating capacity needs of the City of Tallahassee's customers in the year 2000 and beyond;
- To improve the efficiency of the City of Tallahassee's electric generating system through the introduction of new, highly efficient electric generating technology; and



PLOT DATE AUGUST 8, 1996 C:\15840002\00000-01.DWG



GENERAL SITE LOCATION MAP
CITY OF TALLAHASSEE - PURDOM UNIT 8 PROJECT
ST MARKS, FLORIDA

Figure
1-1

- To lower the cost of electric production within the City of Tallahassee's system in an effort to maintain competitive electric rates while preparing to meet the challenge of deregulation within the electric utility industry.

1.2.1 Capacity Need

Demand for electricity within the City of Tallahassee's electric service area is growing at a rate of slightly less than two percent per year. In addition, the City of Tallahassee's contract with Southern Company, which presently provides about 20 percent of the City's capacity, expires in the year 2000. So there is need to both keep up with growing demand and to replace capacity presently being supplied under a purchased power agreement that will expire in the next several years.

Energy conservation programs are helpful to reduce the need for additional electricity supplies, but the savings are not enough to allow existing facilities to keep up with demand. The use of electricity for advanced communications and other technology in the workplace and home is growing. Load management and conservation programs merely slow the rate of growth rather than eliminate it. Thus, new generating capacity is needed.

Another benefit of building Unit 8, while retiring Units 5 and 6 at Purdom, is to maintain and enhance the City of Tallahassee electric system's stability. By locating a substantial generating capability at Purdom, the City of Tallahassee is also able to support the Florida Power Corporation and Talquin Electric Cooperative systems with which the City of Tallahassee is interconnected. The result is a more reliable supply of electricity throughout the region.

1.2.2 Improved Efficiency

Some of the City of Tallahassee's generating equipment is approaching 40 years of operating life. In recent years, electric generating technology has made great strides in terms of efficiency (i.e., in the number of megawatts (MW) of electricity produced per unit of fuel consumed) and reduced environmental impact. For example, combined cycle technology, which is the technology proposed for the Purdom Unit 8 Project, captures waste heat from the initial fuel combustion to make steam and produce additional electricity. Also, currently available technology generates fewer air emissions per MW of electricity produced than older units. Thus, the newer technology is beneficial in terms of economics, conservation of energy resources, and reduced environmental impact.

Since the City of Tallahassee is growing and there is a need to add capacity to meet demand, there is an opportunity to upgrade equipment in the system and to improve the system's overall efficiency. The City of Tallahassee will also be retiring some outdated equipment during the next few years and will use this new efficient unit to replace that capacity.

1.2.3 Lowering Costs and Enhancing Competitive Position

The City of Tallahassee currently depends on its electric utility for revenues to support a broad range of municipal services. Thus, the City of Tallahassee's electric utility contributes in a significant way to residents' quality of life. To remain competitive (i.e., to retain its largest

electric customers, and maintain this important revenue stream) the City of Tallahassee must address trends in the industry that are forcing electric rates down.

In the last decade, electric utilities in Florida have begun to experience competition in their industry. The Florida Public Service Commission, the U.S. Congress, and the Federal Energy Regulatory Commission have taken steps to encourage this competition. Other industries, such as the telephone industry and the airlines, have been deregulated, resulting in fierce competition in industries that were previously operated as regulated monopolies.

The City of Tallahassee is preparing to meet this challenge by taking steps to make its electric rates more competitive. Because of the efficiency of the proposed Purdom Unit 8 Project, system production costs will be reduced, allowing the possibility of a rate decrease or, at least, reducing the likelihood of future rate increases. Competitive electric rates will mean that the City of Tallahassee's largest electrical customers will not be tempted to turn to other electric suppliers to keep their own operating costs low.

1.3 PROJECT SELECTION PROCESS

1.3.1 Integrated Resource Planning

In 1994, the Tallahassee Electric Department began a review of customer electricity requirements, fuel price forecasts, and resulting resource needs. The City of Tallahassee's system planning process utilized Integrated Resource Planning (IRP) modelling and procedures to ensure that the best choices in resources, considering both new generation and energy conservation, were blended to provide the least cost plan for meeting the customers' future needs. During the initial stages of this planning work, a citizens committee was utilized to identify the types of conservation programs and generation alternatives that should be considered and the criteria that should be utilized in framing the final recommendations for selection by the City Commission. The results of the planning process showed that:

- There was a need for additional power supplies beginning in 2000;
- Recent advances in available electric generating technology provided an opportunity for the City of Tallahassee's customers to benefit by installing a new combined cycle unit and retiring older, less efficient units earlier than scheduled; and
- The appropriate size of the new unit for the City of Tallahassee's utility system would be 250 MW.

1.3.2 Competitive Bidding Process

Following the identification of the Year 2000 need, the City of Tallahassee voluntarily embarked on a competitive solicitation process by issuing a Request for Proposals (RFP) to secure the additional power supply resources. This process allowed independent developers and other electric utilities to provide proposals for meeting the City of Tallahassee's need. In addition, the City of Tallahassee developed two "self-build" alternatives utilizing a team of City of Tallahassee electric employees and outside consulting engineers with expertise in power plant design, permitting, construction, and operation. The self-build alternatives included fixed price

“turn-key” construction proposals and fixed price natural gas pricing for the 2000 - 2020 operating period.

Evaluation of the external and “self-build” alternatives was completed utilizing the same IRP modelling techniques that identified the need. In addition to the proposals received by the City of Tallahassee in the RFP process, other generation options (purchased power, alternative generation options) were included in the IRP evaluation. The evaluation process also included sensitivity and risk analysis to determine how changes in assumptions about load growth, fuel prices, economic growth, retail wheeling, inflation, interest rates and so on might change the outcome of the evaluation.

The review and evaluation of the proposals and alternatives included participation by three different groups:

- A Technical Evaluation Committee consisting of three senior staff members from the Electric Department, one from the Treasurer-Clerk’s office, and one from the Water & Sewer Department. This team was supported by Stone & Webster Management Consultants, Inc., who performed the modelling, and other outside legal and technical experts.
- A City Management Team consisting of the Assistant City Manager for Utilities, the Electric Department General Manager, and the Electric Planning Administrator; and
- An Oversight Committee formed to give feedback and advice to the Technical Evaluation Committee. This committee consisted of representatives of the City of Tallahassee’s two largest customers, outside industry experts, an Assistant City Manager, the Treasurer-Clerk, and members that represented business, environmental and neighborhood interests.

In addition, the evaluation process was reviewed by R. W. Beck, Inc., an outside consulting engineering firm, and the City Auditor.

The review and evaluation concluded that the power supply plan which included one of the City of Tallahassee’s “self-build” alternatives, the Purdom Unit 8 Project, was the least cost plan to meet the City of Tallahassee’s energy needs for the year 2000 and beyond. The review conducted by R. W. Beck and the City Auditor found the process and evaluation to be fair. On July 10, 1996, the City Commission concurred with the recommendation of the evaluation committee and authorized staff to move forward with the Purdom Unit 8 Project.

Based on a comparison with the outside proposals offered in response to the RFP, the key competitive advantages of the Purdom Unit 8 Project were:

- Utilization of an existing site already owned by the City of Tallahassee and properly designated on the City of St. Marks’ comprehensive plan and zoning map;
- The degree of detail in the City of Tallahassee’s alternative, which enabled a more definitive assessment of potential environmental impact and risk to the immediate environment around the proposed site;
- The availability of tax exempt financing;

Purdom Unit 8

- A 20-year net present value (NPV) cost that was approximately 16 percent lower than the next lowest cost proposal;
- The opportunity to optimize staffing and share common facilities as a result of utilizing an existing power plant site;
- Utilization of a site already connected to the City of Tallahassee's power grid so that no new transmission facilities needed to be constructed; and
- Cost advantages associated with not having to pay profit normally included in any proposal made by a taxable entity.

1.4 PROJECT LICENSING PROCESS

1.4.1 "One-Stop" Permitting under the Power Plant Siting Act

The Purdom Unit 8 Project will be permitted under the Florida Electrical Power Plant Siting Act (PPSA) process. Considered a "one-stop" permitting process, the PPSA actually provides for a coordinated review of a single permit application (the SCA), which results in one consolidated permit, known as the Site Certification. The Site Certification will address the proposed Unit 8, the remaining existing units, and the entire existing site. All local, regional and state reviews and permits are covered by the Site Certification. Federal permits and reviews are handled separately but are coordinated with the PPSA process, and rely on the same information.

1.4.2 Certification Hearing

After reviewing the City of Tallahassee's application, each of the local, regional and state agencies will file a report with the DEP. As the coordinator of the review process, the DEP will incorporate the comments and recommendations of all the other agencies and make a recommendation for approval or denial of site certification. After receiving the other agencies' reports, the DEP will prepare one consolidated report, incorporating all the agencies' findings and recommendations plus the findings and recommendations of its own staff.

Following the issuance of the DEP report, a certification hearing will be held before an administrative law judge appointed by the Florida Division of Administrative Hearings. Public comment will be taken during the certification hearing at a time specifically set aside for the public to speak. After the judge hears the testimony and evidence, he or she will prepare a recommended order, outlining "findings of fact" and "conclusions of law" and recommending approval or denial of the project. Typically, in recommending approval, the judge will also recommend an extensive list of conditions that have been proposed by the various parties to the proceeding. This recommendation will be forwarded to the Governor and Cabinet for final action.

A separate hearing on the air quality Prevention of Significant Deterioration (PSD)/Title V Application may be held, if requested. However, it is likely that such a hearing would be scheduled to coincide with the certification hearing.

1.4.3 Governor and Cabinet Approval

The final decision on the site certification will be made by the Governor and Cabinet at one of their regular, twice monthly meetings. The applicant and the public will have the opportunity to speak briefly before the Governor and Cabinet take action on the site certification.

The PPSA is *procedurally* preemptive. That is, it preempts the permitting procedures of the individual agencies and local government but requires compliance with their substantive requirements. For example, the project will not have to follow the procedures of the local site plan review process, but a demonstration of compliance with the adopted Land Development Code of the City of St. Marks will have to be made through the PPSA process. If any variances from the substantive requirements of the agencies are sought by the applicant, they must be approved by the Governor and Cabinet.

DEP will likely take final action on the PSD/Title V permit about 30 days after the decision by the Governor and Cabinet.

1.4.4 Licensing Schedule

As of late July 1996, the Purdom Unit 8 Project team had begun the studies necessary for preparation of the SCA. The following are a few key milestones of the licensing process with their expected dates.

Preparation of the SCA	July 1996 through February 1997
Application Filing	February 1997
Application Sufficiency Review	February 1997 through June 1997
Agency Review of Application	June 1997 through October 1997
Filing of Agency Reports	September 1997
Filing of DEP's Report	October 1997
Certification Hearing	January 1998
Filing of Hearing Officer's Recommended Order	March 1998
Decision by Governor and Cabinet	May 1998
DEP Approval of PSD/Title V Permits	June 1998

1.4.5 Public Participation

The PPSA provides for public notices in the form of large newspaper ads of the application filing and the certification hearing. As mentioned above, public comment is taken during the certification hearing, and the public is allowed to speak briefly before the Governor and Cabinet take action on the final site certification.

In addition to the formal mechanisms for public notice and public participation provided in the PPSA, the City of Tallahassee welcomes public input and has developed a special program to meet with citizens, share information about the project, and listen to citizens' views. Public meetings on the project will ~~be~~ be held in Tallahassee and St. Marks during September 1996 to

present information on the progress and provide citizens the opportunity to ask questions and express their views.

A question and answer column will be included with customers' bills and a project newsletter will be sent periodically to persons on the project mailing list. The City of Tallahassee would welcome the opportunity to make a brief presentation to civic, neighborhood, and business groups on the project and is continuing to meet with local government and agency representatives as requested or as needed to keep them informed.

A voice mailbox, e-mail address, and an Internet World Wide Web page have been established for citizen inquiries about the project. For questions or comments contact:

- Voice Mail: (904) 891-5585
- E-mail: purdom8@sc.ci.tlh.fl.us
- Web Page: <http://www.state.fl.us/citytlh/purdom8/>
- Mailing Address: Mr. Rob McGarrah
2602 Jackson Bluff Road
Tallahassee, FL 32304

1.5 PROJECT DESCRIPTION

1.5.1 Existing Purdom Plant and Site

The Purdom Generating Station is located at 667 Leon Drive (State Road 363), St. Marks, Florida.

1.5.1.1 Plant History and Operation

The station has nine generating units, consisting of seven gas/No. 6 fuel oil-fired steam electric units (numbered 1 through 7) and two gas/diesel fuel oil-fired gas turbine units (numbered GT 1 and GT 2). Units 1 through 4 are rated at 7.5 MW (nominal, the output varies slightly with weather and fuel conditions) each. They were placed in operation between 1952 and 1954 and are now being retired. Units 5 and 6 are rated at 22 MW (nominal) and were placed in operation in 1958 and 1961, respectively. The gas turbines are each rated at 12.5 MW (nominal) and were installed in 1961 (GT 1) and 1966 (GT 2). Unit 7, rated at 44 MW (nominal), became operational in June of 1966.

The units were all installed with once-through cooling systems using water from the St. Marks River and have operated under a National Pollutant Discharge Elimination System (NPDES) wastewater discharge permit since the inception of the NPDES permitting program and a state-issued Industrial Wastewater (IWW) permit. An intake flume and discharge canal were constructed along with Units 1 through 4. The St. Marks River was dredged and a fuel oil barge unloading terminal was installed at the same time. A second discharge canal was installed with Unit 6 and an intake canal was installed with Unit 7. Ground water from on-site or near-site wells has been used as the source of boiler water makeup. Units 1 through 4 are now being retired, while Units 5 through 7, GT 1 and GT 2 are presently used for meeting peak load requirements.

1.5.1.2 Existing Plant Description and Setting

The existing plant consists of the retired steam electric units 1-4, the active steam electric units 5-7 and their associated facilities, and the GT Units 1 and 2. Figure 1-2 depicts the locations of the existing units. The steam electric units, which can fire either natural gas or number 6 fuel oil, are located south of the intake canal. Units 5 and 6 share a common stack and Unit 7 has its own 180-foot stack. A new, small auxiliary boiler is presently in the process of being permitted. The two discharge canals are located south of these units with the main oil storage area between them. The oil barge unloading facility is located on the east side of the main oil storage area. The plant access road runs east-west and separates the generating units from the large oil storage area, which is used to store number 6 fuel oil for the steam electric units.

The wastewater treatment system (for low volume wastewater and metal cleaning wastes) includes two wastewater treatment ponds and lies west of the generating units and north of the plant access road. The plant switchyard lies to the west of the wastewater treatment ponds. The plant warehouse is south of the wastewater treatment ponds and south of the plant access road. West of the warehouse is an elevated water tower, presently used to store well water prior to its treatment for use as boiler makeup. A diesel oil tank for the gas turbines is west of the water tank. The gas turbines which can fire either natural gas or diesel (number 2 fuel) oil, are enclosed in a building west of the diesel oil tank and south of the plant access road.

The Purdom Station switchyard is scheduled to be refurbished in the next several years. Construction on the refurbishment is scheduled to be completed no later than the summer of 1999. This work was planned independently of the Unit 8 installation and is intended to replace obsolete equipment and upgrade the switchyard design and functionality.

1.5.2 Proposed Unit 8

The proposed Unit 8, the location of which is also depicted in Figure 1-2, consists of a combined cycle unit rated at a nominal 250 MW. The combined cycle unit includes an advanced combustion turbine (a device similar to a jet aircraft engine) that turns an electrical generator, a waste heat recovery steam generator (which uses the hot exhaust gases from the combustion turbine to make steam), and a steam turbine which turns another electrical generator (see Figure 1-3). The combined cycle configuration is the most efficient type of fossil-fueled power plant currently available. This means that the largest amount of power can be generated from the smallest amount of fuel, and a correspondingly smaller amount of air pollutants will be emitted for the amount of power generated.

Chapter 3.0 of the SCA will contain a detailed description of the proposed new combined cycle unit and ancillary facilities.

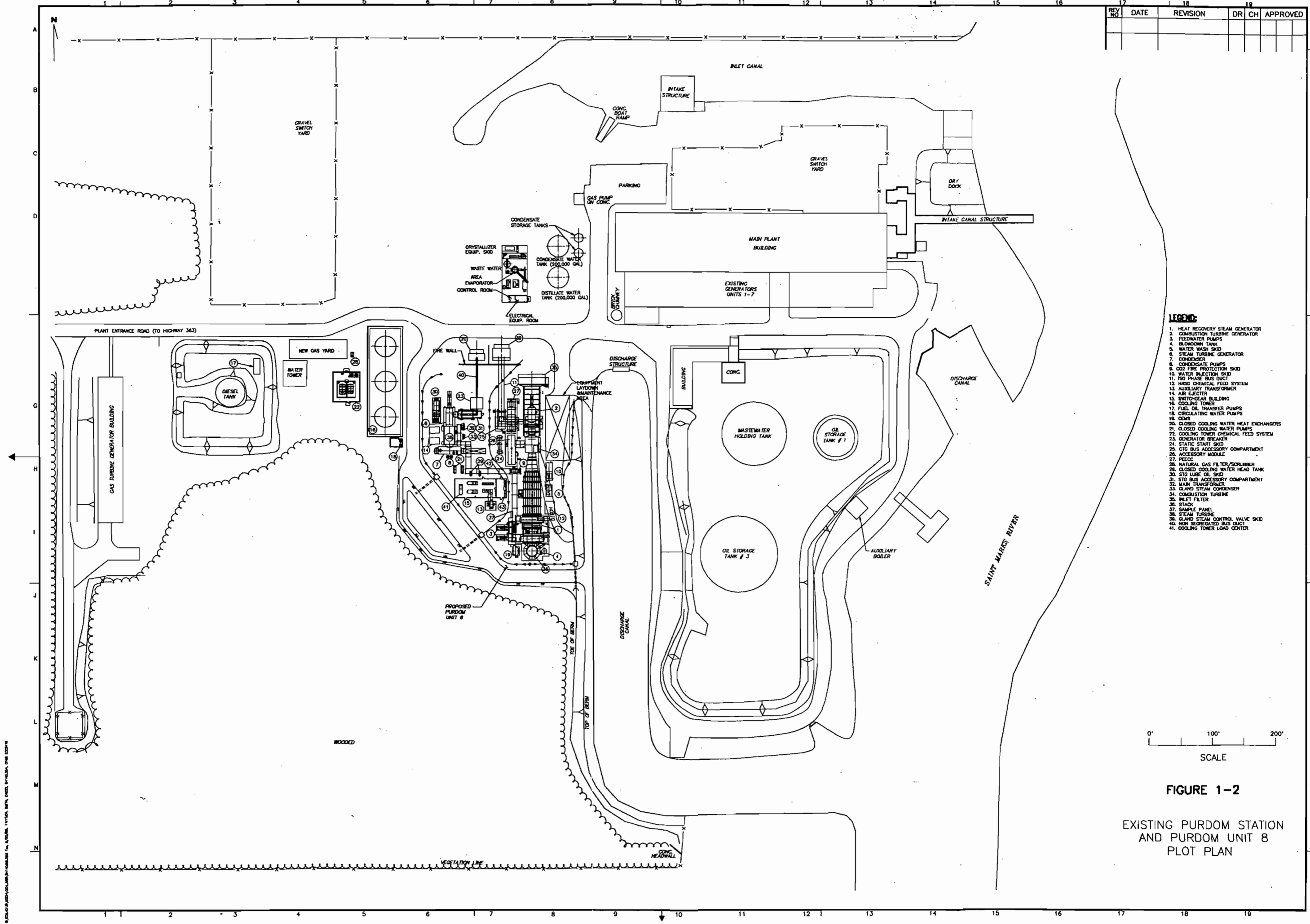
1.5.2.1 Design Philosophy

The proposed project design reflects an appreciation for the environment in Wakulla County and attempts to protect that environment while providing for the growing electricity needs of the Tallahassee area. Commitments incorporated into the preliminary design include special protections for air quality, water resources and habitat, taking into account the Purdom Station's proximity to the St. Marks National Wildlife Refuge and its location along the St. Marks River.

Purdom Unit 8

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REV. NO.	DATE	REVISION	DR	CH	APPROVED



LEGEND:

1. HEAT RECOVERY STEAM GENERATOR
2. COMBUSTION TURBINE GENERATOR
3. FEEDWATER PUMPS
4. BLENDING TANK
5. WATER WASH SKID
6. STEAM TURBINE GENERATOR
7. CONDENSER
8. CONDENSATE PUMPS
9. CO2 FIRE PROTECTION SKID
10. WATER INJECTION SKID
11. ISO PHASE BUS DUCT
12. HISS CHEMICAL FEED SYSTEM
13. AUXILIARY TRANSFORMER
14. AIR EJECTOR
15. SWITCHGEAR BUILDING
16. COOLING TOWER
17. FUEL OIL TRANSFER PUMPS
18. CIRCULATING WATER PUMPS
19. COWS
20. CLOSED COOLING WATER HEAT EXCHANGERS
21. CLOSED COOLING WATER PUMPS
22. COOLING TOWER CHEMICAL FEED SYSTEM
23. GENERATOR BREAKER
24. STATIC START SKID
25. CTO BUS ACCESSORY COMPARTMENT
26. ACCESSORY MODULE
27. PECC
28. NATURAL GAS FILTER/SCRUBBER
29. CLOSED COOLING WATER HEAD TANK
30. STO LUBE OIL SKID
31. STO BUS ACCESSORY COMPARTMENT
32. MAIN TRANSFORMER
33. GLAND STEAM CONDENSER
34. COMBUSTION TURBINE
35. INLET FILTER
36. STACK
37. SAMPLE PANEL
38. STEAM TURBINE
39. GLAND STEAM CONTROL VALVE SKID
40. NON SEGREGATED BUS DUCT
41. COOLING TOWER LOAD CENTER

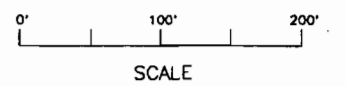
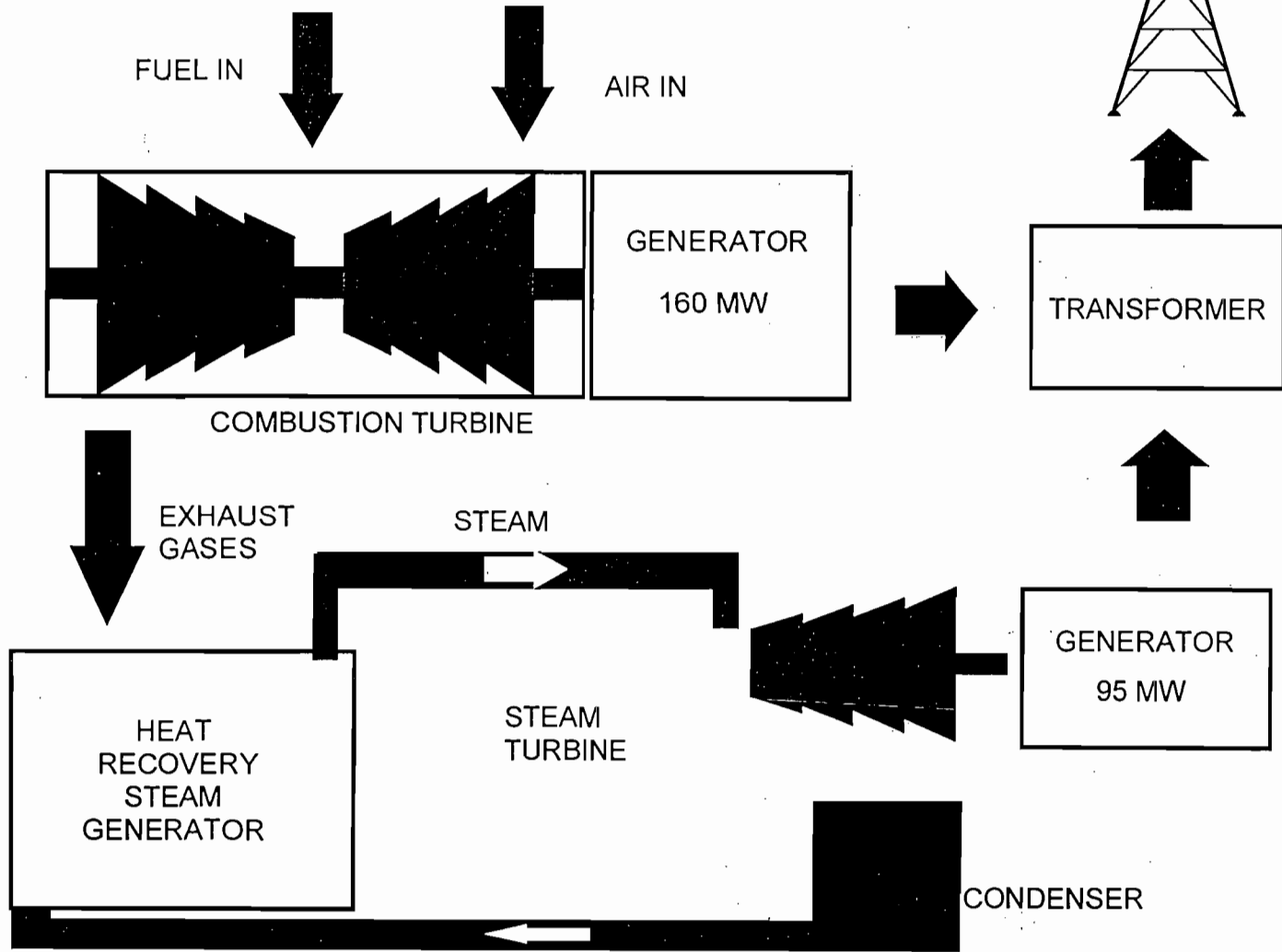


FIGURE 1-2
EXISTING PURDOM STATION
AND PURDOM UNIT 8
PLOT PLAN

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Combined Cycle Generation



**FOSTER WHEELER
ENVIRONMENTAL
CORPORATION**

COMBINED CYCLE PLANT GRAPHIC

CITY OF TALLAHASSEE - PURDOM UNIT 8 PROJECT
ST MARKS, FLORIDA

Figure

1-3

Purdom Unit 8

For example, through the selection of a clean fuel, the installation of advanced combined cycle technology, and the retirement of older units at the Purdom Generating Station, increases in air emissions will be minimized even though generating capacity at the station will increase by about 200 percent. Water use will be minimized through water recycling in the zero discharge system and reuse of treated wastewater, both from the City of St. Marks' sewage treatment plant and the Purdom Station's own waste streams. The zero discharge system will also eliminate the need for discharges to the St. Marks River from the new power plant, the chemical waste treatment system of the existing plant, or the City of St. Marks' sewage treatment plant. Wetland impacts have been avoided through careful site layout, and aesthetics along the St. Marks River shoreline will be improved through landscaping in accordance with the City of St. Marks land development regulations and the removal of the outdoor portions of Units 1 through 4.

Existing infrastructure will be used to connect the new unit to the City of Tallahassee electric grid. Only the conductors on the existing transmission lines between the Purdom Station and Tallahassee will have to be replaced. Similarly, the Purdom Station is presently served by an existing Florida Gas Transmission pipeline. That pipe will be enlarged to accommodate fuel delivery for the new unit. Transport of the City of St. Marks treated effluent from the treatment plant to the Purdom Station will be via a new pipeline, less than a mile in length, expected to be installed along City streets. Oil storage at Purdom Generating Station will be reduced due to the retirement of Units 5 and 6.

The following paragraphs provide some additional detail on the project's key design features.

1.5.2.2 Air Quality

The proposed Unit 8 will burn clean natural gas as the primary fuel, and will burn only low sulfur fuel oil when natural gas is not available or not economical. The installation of the new combined cycle power plant will be accompanied by the retirement of Units 5 and 6, the oldest and least efficient steam units in the City of Tallahassee's system. Additionally, the City of Tallahassee expects to keep the annual emissions of sulfur dioxide (SO₂) and oxides of nitrogen (NO_x) from Unit 7, Unit 8 and the auxiliary boiler at or below recent levels from Units 5, 6 and 7, even though the plant electrical generating capacity will nearly triple.

Best available control technology (BACT) is a concept created by the Environmental Protection Agency (EPA) and adopted by DEP. It was conceived to make sure that new units incorporated any technological advances that would reduce air pollutant emissions if they are environmentally and economically reasonable. The proposed Unit 8 is expected to have emission rates of air pollutants that are BACT.

1.5.2.3 Water Use

Condenser cooling for the steam turbine is provided by a closed cycle mechanical draft cooling tower. This closed cycle cooling system is a zero discharge system because the water that would traditionally be discharged (or "blown down") to remove dissolved solids from the cooling tower water will instead be treated and recycled. Only the relatively small volume of dissolved solids, in solidified form, will be disposed of by beneficial reuse or at an appropriately licensed site. The

Purdom Unit 8

recycled water will be used for boiler makeup, allowing the retirement of the present well system.

The primary source of makeup to the cooling tower will be surface water from the St. Marks River. This water will be withdrawn using the existing Unit 7 intake structure, eliminating the need for any construction within the river. Additional makeup water sources will include the wastewater discharge (OSN 005 and 006, see Section 1.5.3) from the existing steam electric units, the effluent from the City of St. Marks sewage treatment plant, and any recycled water from the treatment of cooling tower blowdown in excess of the need for boiler makeup.

Retirement of Purdom Units 5 and 6 in conjunction with the installation of the proposed Unit 8 will reduce the volume of the once-through cooling water withdrawal from the river, and subsequent thermal (heated water) discharge, from about 90,000 gpm to about 42,000 gpm.

1.5.2.4 Site Design

Unit 8 is proposed to be installed on the west side of the westernmost discharge canal, south of the plant access road (Figure 1-2). The combustion turbine/heat recovery steam generator and the combustion turbine-generator will be oriented north-south adjacent to the canal and the steam turbine-generator and other equipment will be adjacent to the west. The cooling tower will be west of the steam turbine-generator. The zero discharge wastewater treatment system will be just north of the access road. A stormwater retention swale will be added to the southwest of the new unit to percolate as much stormwater as possible into the ground water and to release the remainder as a sheet flow to the southwest, as it presently flows. Other storm water will use the existing storm water outfalls.

The combustion turbine/heat recovery steam generator will utilize a stack (chimney) that meets state requirements for Good Engineering Practice (GEP) and it will be lighted and marked in accordance with Federal Aviation Administration (FAA) requirements, if applicable. Although the GEP stack height has not yet been finalized, it is expected to be between 150 and 213 feet tall.

The proposed unit will utilize the existing natural gas pipeline (after it is upgraded) for fuel delivery, and will similarly transmit the new power over the existing transmission lines (after they are reconducted). The existing diesel oil storage tank near the gas existing combustion turbines will be used for the storage of backup fuel. One of the large number 6 fuel oil storage tanks will be converted to be a wastewater storage tank to facilitate recycling all of the plant's wastewaters. This oil storage tank will be closed in accordance with the procedures of Florida Administrative Code 62-762 prior to being converted to be a wastewater storage tank.

1.5.2.5 Local Infrastructure

The existing station is connected to the City of St. Marks' potable water system and sewage collection and treatment system. These connections will be kept with the addition of Unit 8. Because of the retirement of Units 5 and 6, fewer personnel will be required to operate the station; therefore, the existing water and sewer service will be adequate. Similarly, the existing plant access road and access to Leon Drive (State Road 363) are expected to be adequate.

A new pumping station and pipeline will be installed to deliver the effluent from the City of St. Marks' sewage treatment plant to the Purdom Station for reuse. The pipeline will follow city rights-of-way, and will be located to avoid wetlands.

1.5.3 Current Plant Permits and Emissions

The Purdom Station ~~currently has~~ recently operated under three DEP air permits. Permit No. A065-24827 establishes operating, testing, recordkeeping, and reporting requirements for Gas Combustion Turbines 1 and 2, and limits maximum annual hours of operation for each turbine. This permit does not establish any specific limitations on allowable emission rates. ~~Although Boilers 1 through 4 are in the process of being retired, their operation had been authorized under Permit No. AO65-242828, which authorized the operation of Boilers 1 through 4 which had~~ not yet recently been surrendered. However, since ~~These units were not included in the recently filed Title V Application for the Purdom Station, and their operation is no longer permitted. Permit No. AO65-242831 establishes operating, testing, recordkeeping and reporting requirements for Boilers 5, 6 and 7; establishes allowable emission rates for PM and SO₂; and provides for continuous operation of the boilers. Particulate matter is not to exceed 0.1 lb/mmBtu during normal operation and 0.3 lb/mmBtu during certain operating conditions when firing fuel oil. No PM limit applies to the firing of natural gas. The maximum allowable emission rate for SO₂ is 1.87 lb/mmBtu. The Title V Operating Permit Application, submitted in June 1996, requests an SO₂ emission limit of 1.3 lb/mmBtu for Units 5 and 6.~~

Table 1-1 presents the permitted (allowable) emission rates in tons per year for Boilers 5 through 7 in accordance with the PM and SO₂ limitations contained in the respective operating permits. This table also presents past actual annual emissions of PM, SO₂, NO_x, carbon monoxide (CO), volatile organic compounds (VOC), and lead (Pb), which are known as the "criteria" and "ozone precursor" pollutants, as well as the other pollutants covered by the PSD regulations (Rule 17-212.400 F.A.C.). The table includes emissions generated by the three boilers and two combustion turbines based on actual operation and fuel usage data averaged over the last two years. ~~Emissions generated by the two combustion turbines (GT1 and GT2) are not included as these emissions are not expected to change in any way as a result of the Unit 8 Project.~~

The Purdom Plant currently operates under NPDES Permit Number FL0025526 and Industrial Waste Water (IWW) permit number IO65-188446. Although these permits were due to expire, they have been indefinitely extended by the timely and sufficient submittal of an application for a new NPDES permit. Discharges are permitted from four outfalls (designated Outfall Serial Numbers or OSN 001, 002, 005 and 006). OSN 001 includes once-through cooling water and auxiliary equipment cooling water from Units 1-5 discharged to the St. Marks River via the easternmost discharge canal. (Note that Units 1-4 are in cold standby mode and in the process of being retired.) OSN 002 includes once-through cooling water and auxiliary equipment cooling water from Units 6 and 7 and cooling water from GT Units 1 and 2, discharged to the St. Marks River via the westernmost discharge canal. The design condition for OSN 001 is about 24,000 gallons per minute (gpm) at a 13° F. temperature rise (Unit 5 only). The average winter discharge temperature was reported in 1992 to be 78.8° F and the corresponding average summer temperature was 80.6° F. The design condition for OSN 002 is similar except that the design flow rate is about 66,000 gpm (Units 6 and 7).

Purdom Unit 8

TABLE 1-1
Recent Air Pollutant Emissions (Allowables and Actuals)⁽¹⁴⁾
(tons/year)

Pollutant	UNIT 5				UNIT 6				UNIT 7				GT1 & GT2 ^(16,17)				UNITS 5, 6 & 7 & GTs	
	Actual Fuel Oil	Actual Nat. Gas	Actual Totals	Allowable Totals ⁽¹⁾	Actual Fuel Oil	Actual Nat. Gas	Actual Totals	Allowable Totals ⁽¹⁾	Actual Fuel Oil	Actual Nat. Gas	Actual Totals	Allowable Totals ⁽¹⁾	Actual Fuel Oil	Actual Nat. Gas	Actual Totals	Allowable Total ⁽¹⁾	Actual Totals	Allowable Totals ⁽¹⁾
Particulate Matter ^(2,3)	0.01	1.19	1.20	164.30	0.150.17	1.22	1.371.39	164.30	2.652.90	4.65	7.37.55	340.00	0.05	0.66	0.71	NR	9.8710.85	668.60 ⁽¹⁸⁾
PM ₁₀	0.01	1.19	1.20	164.30	0.150.17	1.22	1.371.39	164.30	2.652.90	4.65	7.37.55	340.00	0.05	0.66	0.71	NR	9.8710.85	668.60 ⁽¹⁸⁾
Sulfur Dioxide ⁽⁵⁾	0.30	0.23	0.53	1710.00 ⁽⁴⁾	3.53	0.23	3.76	1710.00 ⁽⁴⁾	75.28	0.89	76.17	5100.00	0.26	1.47	1.73	687.61	80.6482.19	8,520.009207.61
Nitrogen Oxides ⁽⁶⁾	0.05	65.53	65.58	NR	1.44	133.96	135.4	NR	(15)	(15)	251.32	NR	0.57	6.88	7.45	NR	452.30459.75	NR
Carbon Monoxide ⁽⁷⁾	0.01	9.53	9.54	NR	0.15	9.74	9.89	NR	2.05	40.62	42.67	NR	0.04	1.72	1.76	NR	62.1063.86	NR
Volatile Organic Compounds ⁽⁸⁾	0.00	0.34	0.34	NR	0.02	0.34	0.36	NR	0.31	1.43	1.74	NR	0.01	0.38	0.39	NR	2.442.83	NR
Lead ⁽⁹⁾	0.00	0.00NA	0.00	NR	0.001	0.00NA	0.001	NR	0.01	0.00NA	0.01	NR	0.00	N/A	0.00	NR	0.010.011	NR
Asbestos	NA	NA	NA	NR	NA	NA	NA	NR	NA	NA	NA	NR	N/A	N/A	N/A	NR	NA	NR
Beryllium ⁽¹⁰⁾	0.00	0.00NA	0.00	NR	0.00	0.00NA	0.00	NR	0.0003	0.00NA	0.0003	NR	0.00	N/A	0.00	NR	0.0003	NR
Mercury ⁽¹¹⁾	0.00	0.00022.0E-7	0.00022.0E-7	NR	0.00	0.00022.0E-7	0.00022.0E-7	NR	0.002	0.00088.5E-7	0.0030.002	NR	3.20E-07	1.2-E-08	3.32E-07	NR	0.0030.002	NR
Vinyl Chloride	NA	NA	NA	NR	NA	NA	NA	NR	NA	NA	NA	NR	NA	NA	NA	NR	NA	NR
Fluorides ⁽¹²⁾	0.001	0.00NA	0.001	NR	0.006	0.00NA	0.006	NR	0.30	0.00NA	0.30	NR	NA	NA	NA	NR	0.31	NR
Sulfuric Acid Mist ⁽¹³⁾	0.01	0.000.03	0.010.04	NR	0.04	0.000.03	0.040.07	NR	2.35	0.000.11	2.352.46	NR	NA	NA	NA	NR	2.402.57	NR
Hydrogen Sulfide	NA	NA	NA	NR	NA	NA	NA	NR	NA	NA	NA	NR	NA	NA	NA	NR	NA	NR
Total Reduced Sulfur	NA	NA	NA	NR	NA	NA	NA	NR	NA	NA	NA	NR	NA	NA	NA	NR	NA	NR
Reduced Sulfur Compounds	NA	NA	NA	NR	NA	NA	NA	NR	NA	NA	NA	NR	NA	NA	NA	NR	NA	NR

Period of Record: August 1994-July 1996

NR - No restrictions

NA - No emissions information available or no emissions expected.

⁽¹⁾ Allowable totals based on emissions limitations contained in State of Florida Permit Number A065-242831 and A065-242827

⁽²⁾ It is assumed that all PM emissions are that of PM₁₀.

⁽³⁾ Actual PM emissions from the boilers for fuel oil are based on the most recent PM test results for the corresponding period of record during both normal and sootblowing operations and actual fuel usage. PM emissions from the boilers for natural gas are based on an AP-42 factor and actual fuel usage. (Data for sootblowing are not yet included. The oil totals will increase slightly.)

⁽⁴⁾ Allowable SO₂ emissions based on requested SO₂ emissions limitation of 1.3 lb/mmBtu.

⁽⁵⁾ Actual SO₂ emissions for fuel oil are based on an AP-42 formula, percent sulfur in the fuel oil (as-burned analyses for the boilers) and actual fuel usage. SO₂ emissions for natural gas are based on the sulfur content (FGT data) and the actual natural gas usage.

⁽⁶⁾ Actual NO_x emissions for fuel oil and natural gas for Units 5 and 6 are based on an AP-42 factor and actual fuel usage. NO_x emissions for Unit 7 are based on CEMS lb/mmBtu data and total actual fuel usage.

⁽⁷⁾ Actual CO emissions are based on AP-42 factors and actual fuel usage.

⁽⁸⁾ Actual VOC emissions are based on AP-42 factors and actual fuel usage.

⁽⁹⁾ Actual lead emissions are based on AP-42 factors and actual fuel usage.

⁽¹⁰⁾ Actual beryllium emissions are based on AP-42 factors and actual fuel usage.

⁽¹¹⁾ Actual mercury emissions for fuel oil are based on AP-42 factors and actual fuel usage. Actual mercury emissions for natural gas are based on an EPRI factor (no AP-42 factor available) and actual fuel usage.

⁽¹²⁾ Actual fluoride emissions for boilers are based on available FCG factors (no AP-42 factor available) for hydrogen fluoride and actual fuel usage.

⁽¹³⁾ Actual sulfuric acid mist emissions for boilers on fuel oil are based on the AP-42 factor for sulfur trioxide and actual fuel usage; actual sulfuric acid mist emission for boilers on natural gas are based on ten percent of sulfur dioxide and actual fuel usage.

⁽¹⁴⁾ Actual emissions are based on current estimates and emission factors which are subject to change.

⁽¹⁵⁾ The CEMS data on which actual NO_x emissions are based does not distinguish between oil and natural gas consumption.

⁽¹⁶⁾ Actual fuel oil and natural gas emission rate values reflect the sum of emissions from both combustion turbines.

⁽¹⁷⁾ Actual emissions are based on AP-42 factors and actual fuel usage.

⁽¹⁸⁾ Allowable totals shown do not include the particulate emissions from the two combustion turbines since Permit A065-242827 has no limit for particulates.

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The existing NPDES permit acknowledges that the operation of the plant intake system meets the federal requirements that the location, design, construction, and capacity of intake structures reflect the best technology available for minimizing environmental impacts, and that the thermal discharge meets appropriate state thermal limits.

OSN 005 and 006 physically discharge to the same location, a pipe from the wastewater treatment ponds to a location adjacent to the Unit 7 intake structure at the west end of the intake canal. OSN 005 includes air preheater wash (non-chemical metal cleaning waste) and chemical metal cleaning wastes (chemical cleaning rinse waters from boiler cleaning). OSN 006 consists of flows which EPA calls "low volume wastes", including boiler blowdown, demineralizer regeneration wastewaters, laboratory sampling wastewaters, and floor drains.

In addition to the industrial wastewater NPDES permit described above, the Purdom Plant also operates under the EPA General Permit for storm water discharges. Under this permit, there are two additional outfalls identified for storm water not associated with industrial activity. They are OSN 007 which discharges to the west end of the intake canal, and OSN 008, which discharges to the west side of the westernmost discharge canal.

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2.0 KEY STUDY OBJECTIVES

2.1 AMBIENT AIR QUALITY/METEOROLOGY

2.1.1 Introduction

One of the key objectives of the study is to determine the impact of the proposed project on ambient air quality. This is especially important because of the presence of two environmentally sensitive areas in the site vicinity, the St. Marks Wilderness Area and the Bradwell Bay Wilderness Area. Both of these have been designated as "Class I" areas under the PSD regulations, which means that those areas are afforded special protection under the regulations. As a consequence, the project design includes the reduction of emissions from existing units to offset the emissions of some of the pollutants associated with the new unit, to the maximum extent practicable, in order to provide this special protection. In fact, a federally enforceable emissions cap (for SO₂ and NO_x) covering the proposed Unit 8, existing Unit 7, the existing combustion turbines, and new small auxiliary boiler will be sought, as allowed under Chapter Rule 62-213.415 F.A.C. This "facility-wide cap" or "bubble" will require annual emissions of SO₂ and NO_x to remain at or below recent emissions levels of those pollutants from Units 5, 6, and 7 and from this combustion turbines (GT1 and GT2).

Under the federal and Florida PSD regulations, all major new sources and major modifications of existing sources must undergo the following analyses for each pollutant whose emissions increase in significant quantities: (1) a control technology analysis; (2) an air quality impacts analysis; and (3) an additional impacts analysis. The control technology analysis is required to ensure that the project includes what is determined to represent the "Best Available Control Technology (BACT)," which considers energy, economic, and environmental factors. The air quality impacts analysis must demonstrate that the project will not cause or contribute to violations of the ambient air quality standards (designed to protect public health and welfare) or of the allowable PSD increments (designed to prevent deterioration of air quality in presently clean areas). The additional impacts analysis must demonstrate that impacts to visibility, vegetation and soils will not be significant. The City of Tallahassee must make all of these demonstrations in order to receive an air quality PSD permit for the proposed project.

The ambient air quality/meteorological studies will:

- Characterize the site meteorology and identify appropriate meteorological data to be included in Section 2.3.7.1 (Meteorology) of the SCA, and in air quality impact assessments;
- Characterize the baseline ambient air quality and identify the baseline concentrations to be included in Section 2.3.7.2 (Ambient Air Quality) of the SCA, which in turn, are needed for evaluation of air quality impacts;
- Assess the available emission controls, determine the emission levels which represent BACT, and report the results in Section 3.4 of the SCA.

- Describe and assess in SCA Sections 4.5 (Air Quality Impacts From Construction), and 5.6 (Air Quality Impacts From Operation), any air quality impacts which may result from construction and operation of the project after the application of emission controls;
- Assess in Section 5.6 of the SCA any other impacts resulting from construction and operation of the project on soils, vegetation, visibility, etc.; and
- Present a proposed operational air quality emissions monitoring program which will be described in Section 5.6.2 of the SCA.

A PSD permit application will be included as part of the SCA in Section 10.1.5. Information on air quality and meteorology contained in Sections 2.3 and 5.6 of the SCA will be a summary of the more detailed data presented in the PSD application. A Title V Operating Permit modification application will be filed together with the PSD permit application in accordance with the requirements of Chapter Rule 62-213.400 F.A.C. As the new unit will be considered an "Acid Rain Unit," a Title IV Acid Rain Permit application will be included in the SCA as well.

2.1.2 Characterization of Existing Conditions

2.1.2.1 Historical Data

Regional Climatology

The climate in the Purdom Site area is mild and moist and characteristic of the Gulf States. The nearest National Weather Service office is located at the Tallahassee Regional Airport. Data recorded at the Tallahassee Regional Airport should be reasonably representative of the conditions at the site since the terrain is similar and the site is relatively close to the airport (approximately 30 km). However, as the Purdom Site is closer to the coast than Tallahassee, the meteorological data from the Apalachicola Municipal Airport (about 90 km southwest) will also be examined for applicability to the site. For air quality dispersion modelling purposes, five years of Tallahassee Regional Airport surface weather data will be used since only four years of Apalachicola surface weather data are available.

Unlike Florida's southern peninsula, Tallahassee experiences four definitive seasons with considerable winter rainfall and diminished winter sunshine. During the winter, topographic effects and cold air drainage from higher elevations to the north produce a wide variation of low temperatures on cold, clear and calm nights. The Tallahassee area climatic data summary is presented in Table 2-1. A wind rose for Tallahassee is shown in Figure 2-1.

Regional Air Quality

There are no air monitoring stations located in Wakulla County but some representative data are available from nearby Leon and Gadsden Counties. The data presented below are the most recent data available for each parameter for the years 1992-1995. According to Rule 62-204.240, F.A.C., Wakulla County is an "attainment" or "unclassifiable/attainment" area for all National and Florida Ambient Air Quality Standards (NAAQS/FAAQS). Attainment is achieved when the maximum concentration of a pollutant for a specified averaging time does not exceed the NAAQS/FAAQS. The "unclassifiable/attainment" designation means that no data exist which would indicate that the area is not in compliance with the standards. Other areas of the country

Table 2-1 (Continued)
Tallahassee Regional Airport Climatic Summary

-----INTERNATIONAL STATION METEOROLOGICAL CLIMATE SUMMARY-----

:STA 722140 | KTLH | TALLAHASSEE WSO AP ,FL,US
:LAT 30 23N :LONG 084 22W :ELEV 55(ft) 17(m) :TYPE NOAA SMOS V2.1 07021992
41 - STATION CLIMATIC SUMMARY (CONTINUED)

POR: (HOURLY): 1948-1990 (43 years for most parameters)

2-4

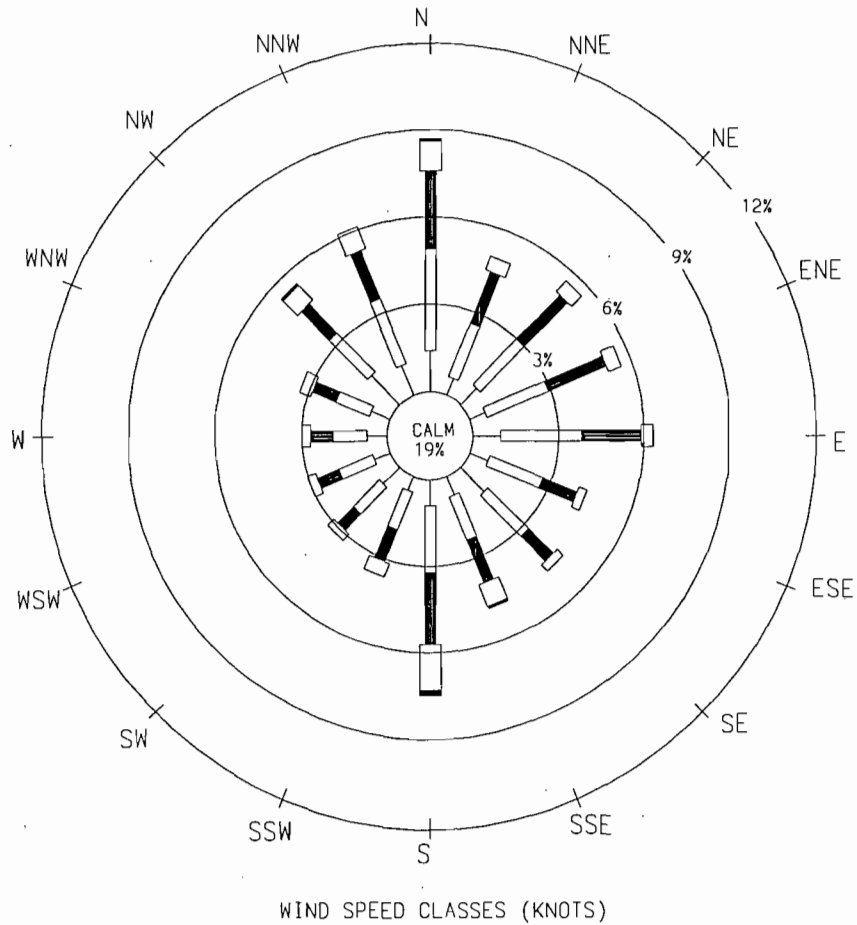
	MEAN NO. OF DAYS WITH (&)														
	PRECIPITATION					OBSTR TO VISION									
	FRZ	HAIL	SMOK	BLOW	DUST	OBS	R/DZ	R/DZ	SNOW	/SLT	PRCP	HAZE	SNOW	SAND	VIS
JAN	12	#	#	0	12	8	0	0	19						
FEB	11	0	#	#	11	9	0	0	19						
MAR	12	0	#	#	12	9	0	#	20						
APR	9	0	0	#	9	8	0	0	19						
MAY	11	0	0	#	11	11	0	#	20						
JUN	16	0	0	#	16	10	0	#	19						
JUL	21	0	0	#	21	9	0	0	18						
AUG	18	0	0	#	18	11	0	#	20						
SEP	13	0	0	#	13	11	0	0	19						
OCT	8	0	0	0	8	9	0	0	17						
NOV	9	0	0	0	9	8	0	0	18						
DEC	11	#	#	0	11	8	0	#	18						
ANN	151	#	1	1	151	111	0	#	226						
POR	42	42	42	42	42	42	42	42	42						

& = ANN TOTALS MAY NOT EQUAL SUM OF MONTHLY VALUES DUE TO ROUNDING
I = EXCESSIVE MISSING DATA - VALUE NOT COMPUTED
= MEAN NO. DAYS < .5 DAYS

-----FEDERAL CLIMATE COMPLEX ASHEVILLE-----

Source: National Climatic Data Center. 1992. International Station Meteorological Climate Summary. Asheville, NC.

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. STA 722140 | KTLH | TALLAHASSEE WSD AP .FL.LS
 LAT 30 23N .LONG 084 22W .ELEV 55(ft) 17(m) TYPE NDAA SMO5 V2 1 07021992

Figure 2-1
 Wind Rose
 Tallahassee Regaional Airport, FL (1948-1990)

Source: National Climatic Data Center. 1992. International Station Meteorological Climatic Summary. Asheville, NC.

are classified as “non-attainment” for a specific pollutant. However, there are no such areas within Wakulla County or surrounding counties.

Ozone is monitored in Leon County, the most populous county of the region. Thus, Leon County data may be considered to over predict ozone levels for the project location. The air quality standard for ozone (O₃) is 0.12 ppm (235 µg/m³). This is a daily maximum one hour concentration, which is not to be exceeded an average of more than one day per year, according to Rule 62-204.240(4), F.A.C. In 1995, the second highest one-hour value observed in Leon County was approximately 80 percent of the standard at 0.096 ppm (188 µg/m³). Data available for previous years show similar concentrations.

The FAAQS for NO₂ is 100 µg/m³ averaged over the entire year. The average concentration monitored in Gadsden County in January to June 1992 was 7 µg/m³ or 7 percent of the standard.

Respirable PM₁₀ and SO₂ are not monitored by DEP in Wakulla, Leon, Jefferson, Taylor, or Gadsden Counties. The nearest monitoring locations for those pollutants are in Hamilton and Bay Counties, which are roughly 70 miles east and west of the site, respectively. In fact, the Hamilton and Bay County monitors are located near major air pollutant sources and the use of concentrations monitored there would result in overestimates of “background” concentrations in the St. Marks area.

The FAAQS for PM₁₀ is 50 µg/m³ annual arithmetic mean, with a maximum of 150 µg/m³, averaged over a 24-hour period, according to Rule 62-204.240(2), F.A.C. The second highest short-term concentration measured in 1995 in Hamilton County was 48 µg/m³ or 32 percent of the standard. The annual arithmetic mean was 23 µg/m³ or 46 percent of the standard. Data are also available for Bay County where similar concentrations have been observed.

The FAAQS for SO₂ is 1300 µg/m³ for a 3-hour average, 260 µg/m³ for a 24-hour period and 60 µg/m³ for an annual average. The second highest 3-hour average recorded in 1995 in Hamilton County was 318 µg/m³ or 24 percent of the standard. The second highest 24-hour average for 1995 was 102 µg/m³ or 39 percent of the standard. The annual average concentration for 1995 was 13 µg/m³ or 22 percent of the standard.

No data are available for lead (Pb) and carbon monoxide (CO) in northwest Florida. Concentrations for both of these pollutants would be expected to be low due to the limited number of emission sources.

2.1.2.2 Data Search/Literature Survey

The data available from the meteorological and air quality monitoring locations described above will be summarized in the PSD Application (SCA Section 10.1.5) and SCA Section 2.3.7. Additional meteorological data will be sought from the National Climatic Data Center, DEP, and the U.S. Fish and Wildlife Service (FWS), and air quality data will be sought from the EPA, DEP, the FWS, the U.S. Forest Service, and others. The subjects and types of information sought to satisfy meteorological data requirements include:

- Mean and extreme values of temperature, precipitation, humidity, wind, atmospheric stability, and summaries of stagnation episodes and severe storm occurrences;

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- Joint frequencies of wind directions, wind speeds, and atmospheric stability; and
- A detailed listing of hourly sequential surface meteorological data for Tallahassee combined with upper air data for Apalachicola for the years 1985 through 1989 to be used as input to the dispersion modelling analysis.

For air quality data requirements, the subjects and types of information sought include:

- Background ambient air quality data for the criteria pollutants from official monitoring stations in the area and/or background concentration recommendations from DEP; and
- Information on significant emission sources in the area (permitted pollutant emission rate, stack height, stack diameter, stack exit velocity, and stack exit temperature).

These data will be summarized to describe the existing climate, ambient air quality, emissions, and regulatory environment of the area, and will be included in SCA Section 2.3.7.

2.1.2.3 Monitoring Exemption Request

A PSD preconstruction ambient air quality/meteorology monitoring exemption request is being developed separately to satisfy PSD requirements. It is believed that an exemption from the monitoring requirements will be appropriate as predicted ambient impacts from the proposed Purdom Plant modification are expected to be below the De Minimis Ambient Impacts in Table 212.400-3 of Chapter Rule 62-212.400 F.A.C.

2.1.3 Impact Assessment

2.1.3.1 Construction Impacts

A qualitative discussion of the potential for air pollutant emissions during site preparation operations will be provided. Dust generation by construction vehicles will be estimated. Control technology to be used, particularly in the suppression of fugitive dust, will be described. Emissions from construction vehicles will be minor and also will be treated qualitatively. Results will be used to address the requirements of SCA Section 4.5.

2.1.3.2 Operation Impacts

The first objective of this task is to demonstrate that the proposed Unit 8 will apply Best Available Control Technology (BACT), where required, in accordance with Rule 62-212.400 F.A.C. Although not required for pollutants whose emissions will not be significantly increased by the proposed modification (including the addition of Unit 8, and the shutdown of Units 5 and 6), it is the City of Tallahassee's intent to present a BACT analysis for all pollutants expected to be emitted by Unit 8 in significant quantities. The BACT analysis will be included in detail in the PSD application and will be summarized in Section 3.4.3 of the SCA.

The other objective of this task is to define the probable air quality impacts which will occur during the operation phase of the proposed project, taking into account both the emissions increases and decreases. The City will determine the worst-case emission scenario from the bubbled-capped emission units (Boiler 7, new Unit 8, existing combustion turbines and the new

auxiliary boiler). Based on these emissions and the emission decreases resulting from the retirement of Units 5 and 6, the City will consider the impacts of the “proposed project”. When used in this section and in Appendix B, “proposed project” will refer to the bubbled units to be included in the facility-wide cap and decreases from Units 5 and 6. ~~It does not include the existing gas turbines (GT1 and GT2).~~ Impacts of the criteria pollutants will be predicted and compared with applicable PSD increments, and, together with existing concentrations, with applicable FAAQS. Impacts of trace element emissions will be predicted, and air toxics concentrations will be evaluated with respect to DEP’s Draft Florida Ambient Reference Concentrations (FARCs).

The air quality impact of the proposed project will be evaluated quantitatively using EPA and DEP accepted dispersion modelling techniques to predict future concentrations of the pollutants of interest. Impact assessment methods will be consistent with the instructions of the EPA Guideline on Air Quality Models (40 CFR 51 Appendix W), the EPA Draft New Source Review Workshop Manual (U.S. EPA, 1990), Section 5.6 of the DEP SCA Instruction Guide [Section 62-1.211(1), F.A.C.], and DEP Prevention of Significant Deterioration, Preconstruction Review Requirements [Sections 62-212.400, F.A.C.].

The air quality assessment will consist of the following:

- Performance of single and multiple source dispersion modelling using the Industrial Source Complex Short Term (ISCST3) model to evaluate short-term and annual average concentrations at off-site receptors for specific pollutants emitted from the proposed project;
- Performance of multiple-source dispersion modelling using the ISCST3 model to evaluate interactions between the proposed project and other nearby sources for those pollutants whose off-site impacts are significant;
- Determination of background concentrations for all applicable pollutants and averaging periods based upon regional monitoring data or minor source modelling analysis;
- A screening level visibility impact analysis on the Class I area using VISCREEN;
- Assessment of single and multiple source modelling results in terms of compliance with Class I PSD increments at the nearest Class I areas, the St. Marks and Bradwell Bay Wilderness Areas, if the impacts from the proposed project are significant;
- Assessment of single and multiple source modelling results in terms of compliance with FAAQS if the impacts from the proposed project and the existing gas turbines are significant;
- A qualitative assessment of the expected air quality impacts of criteria pollutants and regulated non-criteria pollutants on vegetation and soils, to be conducted in conjunction with the ecology tasks; and
- An assessment of selected air toxics impacts due to the proposed project and existing gas turbines versus DEP Draft FARC levels. Included will be all air toxics for which project specific emissions data are available.

A detailed air quality modelling protocol is included in this Plan of Study as Appendix B.

2.2 ST. MARKS RIVER HYDROLOGY/WATER QUALITY/HABITAT

2.2.1 Introduction

The St. Marks River is designated Class III in the vicinity of the Purdom Generating Station. Upstream of Rattlesnake Branch and downstream of the confluence with the Wakulla River, the St. Marks River is designated an Outstanding Florida Water.

The river has a history of oil spills from the 1970s and presently receives the discharge from the City of St. Marks sewage treatment plant. Although the Apalachee Regional Planning Council reports that "...the river has good to excellent water quality, except for the portion adjacent to the industrial complex of the town of St. Marks" (Apalachee Strategic Regional Policy Plan, 1996), there have never been any long-term water quality stations established on the St. Marks River. Available river surveys have been focused on problems relating to oil spills and sewage effluents, and whether the river meets Class III standards has never been documented.

The U.S. Geological Survey (USGS) maintained a flow station on the St. Marks River, near Newport, from October 1956 through September 1994. Based on a preliminary assessment of those records, the 7-day, 10-year low flow is about 330 cubic feet per second (cfs). The average tidal flow is about 360 cfs based on mean tidal ranges. Field measurements indicate that the fresh water flow rides above a salt water wedge in the vicinity of the Purdom Station. The existing station flow from Units 5-7 is on the order of 200 cfs. Based on these flows, it is unlikely that the plant's thermal plume ever recirculates back to its intake.

Based on the design and configuration of the plant discharge structures and the configuration of the intake structures, it is believed that the plant uses only the fresh water layer in the upper river for cooling. The EPA and the DEP have indicated through the plant NPDES and IWW permits that the Purdom Plant thermal discharge does not "...increase the temperature of the Receiving Body of Water (RBW) so as to cause substantial damage or harm to the aquatic life or vegetation therein or interfere with beneficial uses assigned to the RBW." The actual extent of the thermal plume from the station has not been documented to date.

The West Indian manatee (*Trichechus manatus*) is listed as an endangered species by both the FWS and the Florida Game and Fresh Water Fish Commission (FGFWFC). This species has been observed in the St. Marks River and in the vicinity of the Purdom Station. The primary issue to be evaluated involves the potential impact of thermal discharge reductions into the St. Marks River with Purdom Unit 8 Project development and the associated shutdown of Units 5 and 6. Of particular interest is the effect of changes in project operations during cold weather months on manatee migration patterns.

2.2.2 Baseline Characterization

The baseline characterization proposed for the St. Marks River includes a literature search to obtain all available public information from such sources as the USGS, Florida Geological Survey, EPA and the NFWFMD, and a three-pronged field program as follows:

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- Episodic river profiling for current velocity and direction, conductivity, salinity, temperature, pH, dissolved oxygen, and bathymetry to document the salt wedge and the thermal plume;
- Long-term continuous recording of salinity at two depths, and water level, in the existing Unit 7 intake area; and
- Water quality sampling and laboratory analysis for all Class III constituents, and other constituents which may be required for performance of speciation modelling, at two different times in the vicinity of the proposed intake area. Table 2-2 lists the constituents for which analyses will be performed.

Baseline manatee habitat data collection will focus specifically on manatee occurrence in the site vicinity, existing thermal discharge data over the course of a year, and ambient water temperature data. Manatee population baseline data will be obtained from the Manatee Watch Program, Florida Natural Areas Inventory, and other appropriate data sources. Manatee habitat data and thermal preferences will be obtained from published information and the FWS. Data sources regarding St. Marks River temperatures and existing thermal discharges include existing published data, existing Purdom Station data, and site-specific investigations to be conducted as part of proposed Unit 8 site certification studies. The existing situation with respect to manatees will be documented in SCA Section 2.3.6.

2.2.3 Impact Assessment

The impact assessment on the St. Marks River will be performed to compare the existing baseline condition against the proposed improved condition. The existing condition includes withdrawal of water by Units 5-7, the thermal and chemical discharges from Units 5-7, and the discharge of secondary effluent from the City of St. Marks. The proposed condition includes the thermal discharge from Unit 7 only, the elimination of the use of water for once-through cooling by Units 5 and 6 (about 48,000 gpm), the addition of a withdrawal for Unit 8 for closed cycle cooling system makeup (estimated at about 1,000 gpm), and the elimination of both the chemical discharge from Units 5-7 and the discharge from the City of St. Marks sewage treatment plant. Results will be documented in Sections 5.1, 5.2, 5.3, and 5.5 of the SCA.

The river was originally dredged from the mouth to Newport to accommodate navigation. The existing condition includes the use of the river for delivery of fuel oil by barge to the Seminole Refinery, the Purdom Plant, and the McKenzie oil storage area. Based on the projected differential in price between fuel oil and natural gas, the proposed project is expected to reduce the amount of fuel oil delivered to the power plant and its associated barge traffic.

Because of the project, thermal discharges into the St. Marks River will be reduced. In terms of manatee use of the area, the impact assessment will focus on the existing station conditions compared with the proposed conditions, including the reduction in thermal discharges which currently attract manatees during cold winter months. The existing thermal moderation of river temperatures from upstream springs will be evaluated relative to manatee water temperature preferences. Although manatees may not be as attracted to the Purdom Station after the project is implemented, the net effect of the Purdom Unit 8 Project on the river's ecology is expected to be positive. Projected impacts will be documented in Section 5.1.

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**Table 2-2
Water Quality Sampling Constituents**

Type of Constituent	Constituent	Class III Limit in St. Marks River at Purdom Station (if applicable)
Physical	pH	Within 1 unit of natural background & between 6 and 8.5, or not less than natural nor more than 1 unit above natural if natural <6 and not more than natural nor less than 1 unit below natural if natural > 8.5
	Dissolved Oxygen	5 mg/l (minimum)
	Temperature	see 62-302.520
	Total Dissolved Gases	110% of saturation value
General Inorganics	Total Suspended Solids	tested for modelling
	Total Dissolved Solids	tested for modelling
	Hardness (as CaCO ₃)	required for calculating trace metal limits, abbreviated as H
	Alkalinity (as CaCO ₃)	20 mg/l as CaCO ₃ (minimum)
	Nitrate (as N)	not to imbalance natural populations
	Nitrite (as N)	not to imbalance natural populations
	Ammonia (as N)	.02 mg/l (un-ionized) and not to imbalance natural populations
	Total Phosphorus (as P)	not to imbalance natural populations
	Silica (as SiO ₂)	tested for modelling
	Cyanide (as CN)	.0052 mg/l
	Aluminum	tested for modelling
Major Cations	Sulfides	tested for modelling
	Total Residual Chlorine	.01 mg/l
	Calcium	Tested for modelling
	Magnesium	Tested for modelling
	Sodium	Tested for modelling
Minor/Trace Elements	Potassium	Tested for modelling
	Antimony	4.3 mg/l
	Arsenic	.050 mg/l
	Beryllium	.00013 mg/l (at ann avg flow)
	Cadmium	$e^{(.7852[\ln H]-3.49)} \mu\text{g/l}$
	Copper	$e^{(.8545[\ln H]-1.465)} \mu\text{g/l}$
	Iron	1.0 mg/l
	Lead	$e^{(1.273[\ln H]-4.705)} \mu\text{g/l}$
	Mercury	.000012 mg/l
	Nickel	$e^{(0.846[\ln H]+1.1645)} \mu\text{g/l}$
	Selenium	0.005 mg/l
	Silver	0.00007 mg/l
Major Anions	Thallium	0.048 mg/l
	Zinc	$e^{(0.8473[\ln H]+0.7614)} \mu\text{g/l}$
	Chloride	Tested for modelling
	Bicarbonate	Tested for modelling
	Carbonate	Tested for modelling
	Sulfate	Tested for modelling

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Type of Constituent	Constituent	Class III Limit in St. Marks River at Purdom Station (if applicable)
Microbiologicals	Fecal coliform	Multiple requirements
	Total coliform	Multiple requirements
Organics	Benzene	.07128 mg/l (at ann avg flow)
	Phthalate Esters	0.003 mg/l
	PCBs	0.00000045 mg/l (ann avg flow) & 0.000014 mg/l
	Tetrachloroethylene	0.00885 mg/l (ann avg flow)
	1, 1, 1-Trichloroethane	173 mg/l
	Trichloroethene	0.0807 mg/l (ann avg flow)
	Carbon Tetrachloride	.00442 mg/l (ann avg flow)
	1,1-dichloroethylene (1,1-dichloroethene)	.0032 mg/l (ann avg flow)
	dichloromethane (methylene chloride)	1.58 mg/l (ann avg flow)
	2,4-dinitrotoluene	.0091 mg/l (ann avg flow)
	Bromoform	0.360 mg/l (ann avg flow)
	Chlorodibromomethane	0.034 mg/l (ann avg flow)
	Chloroform	0.4708 mg/l (ann avg flow)
	Chloromethane (methyl chloride)	0.4708 mg/l (ann avg flow)
	Dichlorobromomethane	0.022 mg/l (ann avg flow)
	Hexachlorobutadiene	0.0497 mg/l (ann avg flow)
	Pentachlorophenol	0.0082 mg/l (ann avg flow) & $e^{(1.005[\text{pH}]-5.29)} \mu\text{g/l}$ & 0.030 mg/l
	Polycyclic aromatic hydrocarbons (PAHs, see Note 1)	0.000031 mg/l (ann avg flow)
	Anthracene	110 mg/l
	Fluorene	14 mg/l
	Pyrene	11 mg/l
	Fluoranthene	0.370 mg/l
	Acenaphthene	2.7 mg/l
1,1,2,2-tetrachloroethane	0.0108 mg/l (avg ann flow)	
Pesticides & Herbicides	Aldrin	0.003 mg/l & 0.00000014 mg/l (ann avg flow)
	Dieldrin	0.00000014 mg/l (ann avg flow) & 0.00000019 mg/l
	Chlordane	0.00000059 mg/l (ann avg flow) & 0.00000043 mg/l
	Demeton	0.0001 mg/l
	Endosulfan	0.000056 mg/l
	Endrin	0.0000023 mg/l
	Guthion	.00001 mg/l
	Heptachlor	.00000021 mg/l (ann avg flow) & 0.00000038 mg/l
	Lindane (g-benzene hexachloride)	0.000063 mg/l (ann avg flow) & 0.00008 mg/l
	Malathion	0.0001 mg/l
	Methoxychlor	0.00003 mg/l
	Mirex	0.000001 mg/l
	Parathion	0.00004 mg/l
Toxaphene	0.0000002 mg/l	

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Type of Constituent	Constituent	Class III Limit in St. Marks River at Purdom Station (if applicable)
	Beta-hexachlorocyclohexane (b-BHC)	0.000046 mg/l (ann avg flow)
	DDT	0.0000059 mg/l (ann avg flow) & 0.000001 mg/l
Biological Integrity	Shannon-Weaver diversity index	75% of background levels
	Transparency	Not to be reduced more than 10% of natural
Source: Florida Administrative Code 62-302, August 1996		
<p>Note (1): PAH includes the following:</p> <ul style="list-style-type: none"> Acenaphthylene Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(ghi)perylene Benzo(k)fluoranthene Chrysene Dibenzo(a,h)anthracene Indeno(1,2,3-cd)pyrene Phenanthrene 		

2.3 ECONOMIC IMPACT

2.3.1 Introduction

Due to the limited availability of goods and services, the economic impact of the project in Wakulla County is likely to be small. Except for the short-term impact on eating and drinking establishments and temporary housing during the construction phase of the project, most goods and services supportive of power plant construction and operation will probably be purchased in Leon County and elsewhere. Leon County is by far the dominant economy of the region. For example, employment in Leon County in 1990 was almost 15 times greater than in Wakulla County, nearly 22 times greater than in Jefferson County and more than six times greater than in Gadsden County. While jobs, goods and services are more abundant in Leon County, Wakulla County is prized for its natural qualities and recreational amenities, which are appreciated and used by residents of Leon and other surrounding counties. Consequently, there exists a complementary relationship between Leon County, as the economic center of the region, and surrounding counties, including Wakulla, where a more natural, less developed rural environment is enjoyed by residents and visitors alike.

Accordingly, the City of Tallahassee has committed, with the Purdom Unit 8 Project, to spend significant project resources not only to avoid adversely impacting the environment at the Purdom Station, but to improve it. By eliminating wastewater and reducing cooling water discharges to the St. Marks River, maintaining air quality, and improving the aesthetics of the Purdom Station along the St. Marks River shoreline, the project will protect and enhance the chief economic asset of Wakulla County, its natural beauty and environmental character.

In terms of the more traditional analysis of economic impact, the SCA will focus primarily on the impact of project construction on the local economy (i.e., the City of St. Marks and Wakulla

County) and the long-term impact on the City of Tallahassee's fiscal resources. During project construction, there will be a temporary impact on the City of St. Marks and Wakulla County as the more specialized construction crafts are expected to temporarily relocate near the Purdom Station. Permanent employment at Purdom will be maintained at a higher level than could be expected without the project but will be reduced from present levels. The proposed construction of Unit 8 is expected to lower production costs for the City of Tallahassee electric system. The resulting economic benefit could be in the form of reduced electric rates, an increase in municipal revenues, or a combination of the two.

2.3.2 Baseline Characterization

Socioeconomic information to be gathered will include historic, current and projected population figures available from the University of Florida Bureau of Economic and Business Research and Wakulla County, as well as employment by sector and income data from the Florida Department of Labor and Employment Security. Other data to be gathered will include availability of temporary housing, existing housing stock, and building activity in Wakulla County. Housing data will be obtained from the 1990 Census and Wakulla County. Information on public services and facilities, including schools, medical facilities, fire fighting and police facilities, recreation facilities, potable water, sanitary sewer and solid waste facilities will be gathered from the City of St. Marks and Wakulla County. Information on these facilities will include their locations, capacities and current and projected usage.

2.3.3 Impact Assessment

2.3.3.1 Construction Impacts

The construction impact assessment will estimate the effect of project construction on the regional economy. Factors to be assessed include construction employment and payroll, spending for construction materials and supplies, and spending of construction employees. Regional Input-Output Modelling System (RIMS II) multipliers, available from the State of Florida, will be used to estimate the indirect effects of project construction on other sectors of the regional economy.

The size of the construction workforce, the duration of the construction period, and construction payroll will be estimated based on the plant design and construction schedule. The number of construction workers who commute to the site daily from surrounding counties and those who temporarily relocate will be estimated. These estimates will be based on construction workforce availability and commuting routes, and the availability of temporary housing near the construction site. It is expected that there will be some temporary relocation for crafts that are unique to power plant construction and are not available in the local labor force.

The information developed from the impact assessment will be included in Sections 4.6, 4.10 and 7.0 of the SCA.

2.3.3.2 Operation Impacts

This section of the analysis will assess the impact that operation of the project will have on the socioeconomic environment of the area. The impact on Wakulla County employment and payroll

will be estimated. Since the project will involve the addition of a new, very efficient combined cycle unit and the retirement of older units at the site, permanent employment and payroll are expected to decrease from present levels. However, employment levels will be higher than they would be if the project were not built.

The reduction in production costs for the electric utility will result in an increase in revenues to the City of Tallahassee, an opportunity to decrease (or avoid increasing) electric rates for City of Tallahassee customers, or both. This economic benefit to the City of Tallahassee will be estimated, assuming that 100 percent of the cost reduction will be applied to: (1) rate reduction or, (2) increasing transfers to the City of Tallahassee's General Fund, recognizing that the decision to do either or both will be the Tallahassee City Commission's to make in the future.

The impact assessment will also address the potential for impact on City of St. Marks and Wakulla County services and facilities as compared to any in-kind services or fees-for-services paid by the City of Tallahassee in connection with the Purdom Unit 8 Project.

Information on the impact of project operation on the socioeconomic environment will be included in Section 7.0 of the SCA.

2.4 ECOSYSTEM MANAGEMENT

2.4.1 Introduction

The Purdom Unit 8 Project has been designed to be consistent with the themes and principles of DEP's Ecosystem Management program. Specifically, the project design recognizes the sensitivity of the project site as well as the protection and enhancement of the existing site environment. With the use of natural gas, a clean fuel, and adaptation/retrofit of an existing facility, the project emphasizes pollution prevention as well as pollution control. In addition, the installation of advanced, highly efficient generating technology will serve to conserve scarce energy resources. The PPSA permitting process will allow for multi-disciplinary, coordinated review of the project. Finally, the City of Tallahassee has committed to a public involvement program which will allow citizens to participate in the decision-making process as the project moves through permitting.

The Ecosystem Management program identifies "stewardship" as its overarching theme. The City of Tallahassee, through its design approach, will practice stewardship by upgrading an existing facility and leaving the environment "better off". At the same time, the fiscal and economic health of the community of Tallahassee will be strengthened with the addition of new, efficient and cost effective electric generating capacity.

The following paragraphs briefly discuss the project in terms of the four cornerstones of the Ecosystem Management Program, highlighting those recommendations that the project is expected to help implement in the St. Marks River basin.

2.4.2 Place-Based Management

The Purdom Unit 8 Project is proposed to be located at the existing Purdom Station on the St. Marks River in St. Marks, Florida. The generating station was first developed in 1952, and there

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are presently seven different steam generating units plus two combustion turbines located on the site. Units 1 through 4 are not operating and are scheduled for demolition. Units 5 and 6 will be retired in the future. With the installation of Unit 8, the retirement of those units will be accelerated. Unit 7 is planned to remain operational following the installation of Unit 8, although at a reduced load factor.

The Ochlockonee and St. Marks River Basins, which includes the Purdom Station, have been identified as an Ecosystem Management Area (EMA). Also, the beauty and the natural, rural character of the area are recognized as important local economic assets. The City of Tallahassee was mindful of that when it considered the Purdom Unit 8 Project. A specific up-front commitment was made, despite the importance of economics in the competitive bidding process, to spend resources to protect and enhance the environment at Purdom, thereby protecting the "sense of place".

Among the specific DEP Ecosystem Management recommendations in "The Ecosystem Management Strategy," dated September 1995, that the Purdom Unit 8 Project would help implement are the following:

Recommendation P-3

Have teams undertake an action-oriented planning process for EMAs and component places. The goal of this planning process is not to produce additional plans, but rather to stimulate strategic actions necessary for ecosystem management. Planning and subsequent actions will focus on achieving:

b. voluntary participation of private landowners and applicants in improving resource stewardship on public and private lands within the EMA.

The City of Tallahassee has made the following design commitments related to the protection of habitat and air and water resources in and around the Purdom Station:

- The commitment to natural gas as the primary fuel;
- The installation of advanced combined cycle technology to replace older, less efficient technology to improve the overall efficiency of the City of Tallahassee's generating system and conserve energy resources, reduce production costs, and minimize air emissions;
- The commitment to maintain ~~air~~ SO₂ and NO_x emissions at or near existing levels even with the installation of Unit 8 (which will increase the electrical generating capacity at Purdom by 200 percent) by retiring Units 5 and 6 early;
- The installation, at considerable additional expense to the project, of a zero discharge facility which will eliminate the need for thermal discharges to the St. Marks River for the new unit;
- The reuse of Purdom's treated waste streams and the City of St. Marks' sanitary effluent in the proposed cooling system, which will eliminate the discharge of these treated wastewaters to the St. Marks River; and

- Avoidance of wetland impacts at the Purdom Station site through careful site layout.
 - g. success in addressing priority management issues such as control of exotics, protection of submerged lands, prescribed burning, restoration, reduction of air emissions, co-location of public infrastructure in common corridors, public access needs, management of cultural resources, and pollution prevention.*

Pollution prevention is accomplished through the use of a clean fuel (natural gas) and the installation of highly efficient, combined cycle technology to replace older, less efficient units. The result is that generating capacity will be increased substantially but air emissions will remain at or near current levels. Oil storage at the Purdom Station will likely be reduced. The additional electricity to be generated at Purdom can be transmitted over existing lines that will require only conductor replacement. The natural gas will be transported to the site along an existing Florida Gas Transmission right-of-way. The existing pipe will only have to be increased in size. The City of St. Marks' treated sanitary effluent will be transported to the Purdom Station via a new pipeline to be installed along existing city streets.

h. integration of land management with water management issues relating to flow alterations, operation of control structures, pollution load reductions, water conservation, groundwater use and recharge, siting of well fields, and beach and inlet management.

With the retirement of Units 5 and 6, which will occur earlier than planned because of the Purdom Unit 8 Project, withdrawals from the St. Marks River for cooling water will be reduced by 50 percent. Water reuse through the proposed zero discharge system and the use of City of St. Marks' effluent and other treated wastewaters for make-up to the cooling system will minimize withdrawals for cooling and process water at the station, allowing on-site and near-site groundwater wells to be retired from use. As mentioned above, currently permitted thermal and chemical discharges to the St. Marks River will be reduced or eliminated.

2.4.3 Cultural Change

Cultural change, as a cornerstone of ecosystem management, refers to the need to recognize a shared responsibility for protection of the environment. As a municipal electric utility serving the state capital and with a generating station in another county's jurisdiction, the City of Tallahassee is keenly aware of the need to avoid adversarial relationships and work together to achieve common goals.

The Purdom Unit 8 Project will be permitted through a coordinated review process provided for under the PPSA. That process fosters coordination and cooperation among regulatory agencies to develop a single permit, or certification, with a consistent and coordinated set of conditions. In addition, the City of Tallahassee has voluntarily undertaken a public involvement and public information program to inform Tallahassee, St. Marks, and Wakulla County citizens about the project and seek their input. To begin the process, a series of public meetings will be held in Tallahassee and St. Marks in September 1996. The City of Tallahassee hopes to conduct the permitting for the Purdom Unit 8 Project in an atmosphere of trust and mutual respect and to understand and take into account the views of citizens, environmental groups and regulators as the two-year, multi-step permitting process moves forward.

2.4.4 Common-Sense Regulation

This cornerstone of ecosystem management emphasizes solutions that are:

- Consensus-based within the framework of the law rather than adversarial and entrenched;
- Based on pollution prevention instead of end-of-pipe control; and
- Flexible, rather than rigid ways to meet environmental standards.

The Purdom Unit 8 Project will be permitted under the PPSA which provides for coordinated review. Because the process results in a single permit, called the site certification, it lends itself to consensus-based decision-making and reconciliation of conflicting regulatory approaches and standards. There is a strong tradition in power plant siting cases of developing an agreed upon set of conditions and concluding with an administrative hearing that usually is not adversarial. The opportunity exists in the power plant siting process for, and the City of Tallahassee would welcome, a consensus-based rather than an adversarial approach toward resolution of permitting issues and development of the conditions of certification. Toward that end, the City of Tallahassee is sponsoring opportunities for early “scoping” of issues and identification of potential solutions in concert with the regulatory agencies, environmental groups, local governments and citizens. Also, as discussed above, the City of Tallahassee made an early commitment to environmental protection which is reflected in the proposed design of the project in order to set the stage for a consensus-based approach.

The choice of a clean efficient fuel, such as natural gas, shows an emphasis on pollution prevention over “end-of-pipe” control. Fuel choice is perhaps the most important factor in project economics. The City of Tallahassee has taken advantage of recent trends toward greater competition in the natural gas market to obtain very competitive, guaranteed natural gas pricing and has looked for opportunities in facility sharing and existing site utilization to provide attractive project economics while protecting the environment.

Finally, there may be some flexibility needed in the application of regulatory standards. For example, actual historical air emissions against which project emissions will be compared are lower than allowed under the City of Tallahassee’s permits because the City of Tallahassee has chosen to burn a lower sulfur fuel than it is permitted to burn. At existing sites which are candidates for repowering or expansion, disincentives are created for burning fuels that will generate fewer emissions than allowed by permit when these types of comparisons are made. Perhaps there is an opportunity to reward or credit the City of Tallahassee for voluntarily reducing emissions in the past so that they are not penalized when comparisons of projected emissions are made to actual historical emissions to determine the net environmental impact of the project.

Among the specific DEP Ecosystem Management recommendations that the Purdom Unit 8 Project would help implement are the following:

Recommendation R-1

Pursue pilot implementation of alternative regulatory processes that include voluntary participation, applicant incentives, and net ecosystem benefit.

The PPSA is an example of an alternative regulatory process. The standards under the statute are consistent with the concept of net ecosystem benefit. There are some ways in which the process is “streamlined” because there is coordinated agency review and enforceable statutory timeframes that can ensure that a project stays “on track”.

Recommendation R-2

Initiate team permitting through creation of multi-disciplinary, cross-media (air, water, wildlife, land use, etc.) review teams within DEP headquarters and district offices.

Again, the PPSA does provide for coordinated review similar to what is called for in this recommendation. A single hearing officer hears testimony and evidence and issues a recommended order on the entire range of project-related issues. The Governor and Cabinet also act on that order as a whole, so the opportunity exists through the PPSA process for this multi-disciplinary, cross-media permitting approach to be taken.

2.4.5 Foundations of Ecosystem Management

This cornerstone addresses several additional aspects of the ecosystem management program that do not fall under the other categories of place-based management, common sense regulation or cultural change. Particularly applicable to the Purdom Unit 8 Project are the recommendations dealing with Public Linear Infrastructure Planning and Science and Technology.

Recommendation F-5

Co-location of public linear infrastructure should be encouraged wherever economically feasible, safe and reasonably practicable, based on the results of further study conducted with input from affected interests and the general public.

First of all, because of the project's location at the existing Purdom Station no new electric transmission lines will need to be built. Conductor replacement is all that will be required to tie the new unit into the electric grid. Similarly, the right-of-way for the natural gas pipeline already exists and there will be only the need to enlarge the pipe and install a new metering station at the Purdom Station. A new pipeline for delivery of the City of St. Marks' treated effluent to the Purdom Station for use as make-up to the cooling system will be installed along existing city streets.

Recommendation F-7

At the Ecosystem Management Area level, create and coordinate an aggressive statewide monitoring program to determine ecological health, status, and trends for all pertinent ecosystem components state-wide. This should be coupled with an inventory of biologic, hydrologic, geologic, air and anthropogenic resources.

In meeting the requirements of the DEP site certification application guidelines, certain baseline data collection will be required. These data include inventories of resources within a specified radius of the proposed project which could provide a portion of the comprehensive data base for the Ochlockonee-St. Marks Ecosystem Management Area called for in this recommendation.

2.4.6 Conclusion

Although the Purdom Unit 8 Project will be permitted through the PPSA as a specific project, there are many ways in which individual projects can further the goals of the Department's ecosystem management program and serve as examples of the ecosystem management approach. Based on the proposed project design and the City of Tallahassee's commitment to a collaborative permitting process, the Purdom Unit 8 Project presents an opportunity to implement several of the key recommendations of the Ecosystem Management Implementation Strategy. The Purdom Unit 8 Project is proposed to address the twin goals of improving the environment and the economy simultaneously without seeking "trade offs" of one for the other. It represents a common sense approach to meeting the economic needs of the community while preserving the environment so that the long term interests of Florida, the City of Tallahassee, Wakulla County and the City of St. Marks are served.

3.0 OTHER STUDY OBJECTIVES

3.1 SURFICIAL HYDROLOGY

Other surficial hydrology items to be addressed, in addition to the St. Marks River characteristics described in 2.2 above, include the site water budget and area water users, on-site water bodies, and hydrological characteristics of the proposed effluent pipeline corridor. Also, as a consequence of the zero discharge system, a solid waste will be produced (solidified mineral salts from the river water) that will be either reused or disposed of off site. These items are all required by the SCA guidelines.

The baseline characterization for site water budget will include a discussion of rainfall, air temperatures, evaporation and evapotranspiration, runoff, and groundwater recharge. The characterization for area users will include a list of permitted water users and a map of their locations. On-site water bodies will discuss the intake canal, the two discharge canals, existing storm water swales, and any on-site wetlands. Characteristics of the proposed effluent pipeline corridor will be determined observed by field reconnaissance.

The impact assessment will deal primarily with the lessening of impacts that will be achieved with the proposed project. No impacts are projected to on-site water bodies, except for the addition of a recharge swale to compensate for the slight increase in impermeable surface that will result from plant construction. Impacts to water users will be positive due to the cessation of pumpage of groundwater from the City of Tallahassee's existing well field and the retirement of those wells. Preliminary observation of the expected effluent pipeline corridor indicates that it will not have to cross any significant hydrological features. The predicted impacts will be discussed in Sections 4.2, 5.1, 5.3, 5.4, and 6.2 of the SCA.

3.2 GROUNDWATER HYDROLOGY/GEOLOGY

The geohydrologic setting and the potential impacts from operation and construction of the proposed Unit 8 will be presented and described in the SCA. The SCA guidelines require that the following sections and topics be included:

- Section 2.3.1 - Geohydrology.
- Section 4.1.4 - Topography and Soil.
- Section 4.3 - Groundwater Impacts.
- Section 5.3.2 - Impacts on Groundwater Supplies.

The baseline characterization of the site will include a complete description of both the local and regional geology and hydrology. The NFWFMD, the DEP, Bureau of Geology, and the USGS will each be contacted to obtain information on the local and regional resources for descriptive purposes. Existing plant records concerning wells, borings and excavations will be reviewed and correlated to the information obtained from these agencies to prepare an accurate and up-to-date description of the plant's geohydrologic setting.

A phased investigation of local karst features, including estimates of the probability of sinkhole formation, will be conducted. Initially, plant records of borings and well drilling will be reviewed

for any evidence of karst features. In addition, black and white and infrared spectrum aerial photographs will be reviewed for evidence of lineaments or lineations to determine the possible location and incidence of karst related features. This information can be used to conduct a non-invasive geophysical investigation, if warranted.

Existing soil boring logs will be reviewed to provide current information regarding bearing strength of the soil and rock units in the areas planned to undergo construction.

The primary objective of the impact assessment is to describe any construction-related alteration of the site topography or soils, and the effects such alterations will have on site runoff, percolation rates, subsidence, bearing strength, soil stability, aesthetics, and viewshed. The second objective is to describe any effects that construction-related activities will have on the surficial aquifer and nearby water wells. Based on a preliminary assessment of the potential impacts, construction and operation of the project will have no foreseeable adverse impacts to groundwater resources in the study area. Groundwater usage by the plant will be eliminated, which will have a positive impact and will help to preserve the limited fresh groundwater resources which are available locally. A simple groundwater model will be used to predict the change in local groundwater conditions resulting from this elimination of groundwater usage by the plant.

The proposed location of Unit 8 has been used in the past as a temporary stockpile for used plant equipment and materials prior to their disposal offsite. The proposed project will most likely be supported by augured cast-in-place concrete piles. Installation of these piles will result in bringing sub-surface soils and some ground water to the surface. Some soil and ground water samples will be analyzed to establish the baseline conditions. The proposed locations where samples will be collected are shown on Figure 3-1.

Because of the past storage of used plant equipment and materials, the analysis will include testing for the RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), asbestos, and PCBs. Because of the site history of petroleum product storage, an organic vapor analyzer (OVA) will be used to field-screen each boring. Depending on the field-screening results, selected samples may be analyzed for the Kerosene Analytical Group. At least four soil samples and four groundwater samples will be analyzed for these parameters.

3.3 AQUATIC ECOLOGY

The focus of the aquatic ecology studies will be on important species that are:

- Listed as endangered or threatened by the FWS;
- Listed as endangered, threatened or species of special concern by the FGFWFC; or
- Listed freshwater game or sport fish in Florida Admin. Code Rule 39-1.

An objective of this activity is to gather information concerning aquatic ecology, including water quality, and the extent and quality of local aquatic habitats. Aquatic ecological data will be obtained from a review of published information from the FGFWFC and from knowledgeable personnel and academic studies. Existing data will be used to document important interspecific relationships and food chains.

The DEP conducted benthic macroinvertebrate studies in the St. Marks River in the site area during 1995. The field program proposed for this project will be limited to verification of the conditions found in the DEP study. Because of manatee and alligator occurrences in the river, no field fisheries sampling program will be undertaken. Given that the effects on the river system will be positive with development of this project (zero discharge and reduced withdrawals), fisheries field data acquisition needs are not significant enough to warrant use of netting or electroshocking because of the potential risks to these species.

Limited sampling in site aquatic habitats will be conducted to confirm benthic macroinvertebrates present in earlier studies conducted by the City of Tallahassee. This will be done with the use of Hester-Dendy samplers which are artificial substrates. These samplers will be left in the river at selected locations for 25 days and then retrieved. Invertebrates growing on the samplers will be identified to the lowest practicable taxonomic level and counted. Qualitative methods will be used to estimate the extent of use. These studies, together with the existing data, will be used to estimate the relative abundance of important species found and to provide data on habitat quality.

Fisheries use of the river will be determined from consultations with agency personnel and contacts with organizations and institutions, such as Florida State University, which have collections of fish from the river.

The proposed approach to data analysis and impact assessment will be to analyze the data resulting from the literature survey and field studies and formulate a description of the existing aquatic biota, including endangered and threatened species status. The impact assessment will address the effects of construction and operation of the project on the affected aquatic biota, which are expected to be positive due to the reduction of plant withdrawals and wastewater discharges. The results will be presented in Sections 4.4, 5.1 and 5.2 of the SCA.

3.4 TERRESTRIAL AND WETLANDS ECOLOGY

Project impacts to terrestrial and wetland resources will be limited because very little land and no wetlands will be used by the project. The land which will be used has already been disturbed. As a result, only minimal treatment of these issues will be included in the SCA.

In order to be responsive to the SCA guidelines, some terrestrial and wetlands resources data will be compiled from literature surveys and field programs and organized in a baseline description (SCA Section 2.3.6) from which the impacts of the proposed Unit 8 Project can be assessed.

The objective of the literature review is to obtain varied types of ecological information which can be used to develop an existing site and vicinity terrestrial and wetlands ecology data base. This database will be aid in the assessment of any limited effects resulting from the construction and operation of the proposed power plant and associated facilities. Reclaimed water pipeline route and on- or near-site information will include:

- Vegetation descriptions and maps;
- Lists and ecological reports of birds, mammals, reptiles, and amphibians common to the area;
- Wetlands within and adjacent to the power plant site and reclaimed water pipeline;

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- Interspecific relationships and food chains of important species;
- Locations of rare, threatened or endangered species or critical habitats of these species in the project area; and
- Occurrence of pre-existing stresses.

Several data sources will be used in the preparation of the impact assessment as related specifically to wetlands. As a minimum these include soil maps, site surveys, aerial photography and historical maps.

Field inspections of the project area will be conducted. These inspections will be used to update information on the major plant communities and habitat types so that site conditions can be compared with results of previous characterization studies. Additionally, updating of land cover maps for Level III site area land uses/cover greater than five acres in size will be undertaken.

The possible effects of the project on the terrestrial and wetlands resources are limited. The approach to assessing any limited impacts will be to (1) identify the magnitude or the extent of the effect or area affected, (2) estimate the potential of the effect to occur, and (3) determine what portion of the resource would be affected from a local and regional perspective. Results will be presented in Sections 4.4 and 5.8 of the SCA.

3.5 CULTURAL RESOURCES

A number of previously recorded archeological sites exist in close proximity to the City of Tallahassee property on which the Purdom Station is located, and there is a possibility that previously unrecorded cultural resources may be located on the parcel owned by the City of Tallahassee. However, the actual project area associated with the proposed Unit 8 is believed to have undergone extensive prior ground disturbance associated with plant construction and operation. The Florida Division of Historical Resources (DHR) was contacted in 1992 for information on the site. At that time, DHR indicated that it was their opinion "that future development of the facility site would have no effect on historic properties listed, or eligible for listing, in the *National Register of Historic Places*." They further indicated that "[d]evelopment in this portion of the {City of Tallahassee property} site would be able to proceed."

~~Contact will be initiated with the DHR to confirm this earlier opinion and determine whether any additional documentation is necessary to meet agency requirements.~~ The City of Tallahassee contacted DHR again in 1996. DHR confirmed their earlier evaluation and stated that a "review of the Florida Site File indicates that no significant archaeological or historical sites are recorded for or likely to be present within the area of the proposed Purdom Unit 8." The DHR also concluded the project will have no effect on historic properties, provided that any new off-site pipelines which may be part of the project be constructed within the limits of existing road prisms.

3.6 NOISE

The Purdom Station has been an integral part of the City of St. Marks for more than 40 years. Noise produced by the proposed new generating unit will not be perceived by the town residents as significantly different in character or level. Close coordination between the licensing team and

the design engineer will ensure that noise issues are addressed and appropriate mitigation measures are included in the plant design.

A comprehensive environmental noise survey was performed at the Purdom Station in October, 1994. Units 5, 6 and 7 plus both gas turbines were run for the test. Since no significant changes have occurred in St. Marks in terms of new noise sources or noise-sensitive receptors, the results of the survey are still valid and will provide the basis for the baseline characterization (SCA Section 2.3.8).

There are no applicable noise ordinance limits for the site, but there are several guideline or suggested limits available. The most stringent of these is the EPA's recommended day/night limit (Ldn) of 55 dBA at any residence. Thus, in order to minimize noise impacts, the new unit will be designed such that total noise from the site, including existing noise from Unit 7, will not exceed an Ldn of 55 dBA. Expected noise levels at the nearest residences will be determined through computer modelling using the NoiseCalc model. Source noise levels will be obtained from equipment manufacturers or from noise specifications determined by the design engineer. Potential noise levels at the nearest residences during construction will also be evaluated using a computer model. Construction equipment noise levels will be obtained from the literature. A worst-case impact assessment will be performed by using the types and quantities of equipment in use during the most intensive period of construction. Construction and operation impacts will be discussed in Sections 4.6 and 5.7, respectively.

3.7 LAND USE

Use of the Purdom Station site for a power plant is consistent with the City of St. Marks' Future Land Use Map and zoning. As a result, no plan amendment or rezoning will be required. Existing conditions will be documented in Section 2.2 of the SCA.

In addition to future land use and zoning information, baseline information on the sociopolitical environment will include information on governmental jurisdictions in the area; surrounding land use; and easements, title and agency works.

Maps will be prepared which show governmental jurisdictions within a one-mile radius, and within a five-mile radius of the site at the scales required by DEP guidelines. Land use and land cover information will be mapped using the Florida Land Use and Cover Classification System (FLUCCS), or equivalent, Level II data. In addition, any of the following areas located within a five-mile radius of the site will be identified on a map of 1:126,720 scale:

- National Parks;
- National Forests;
- National Wildlife Refuges;
- National Wilderness Areas;
- National Memorials or Monuments;
- Roadless Area Review and Evaluation Areas (RAREs);
- National Wild and Scenic Rivers;

- Areas of Critical State Concern;
- Conservation and Recreation Lands (CARLs);
- Save Our Rivers Lands;
- State Archaeological Landmarks or Landmark Zones;
- Properties listed on or nominated to the National Register of Historic Places;
- State Outstanding Florida Waters;
- State Scenic and Wild Rivers;
- Parks;
- Special Management Areas; and
- Major Private Landholdings for Environmental Protection.

A larger scale map (1:24,000) will indicate any of the areas listed above within a one-mile radius of the project site.

The aesthetics of the site are expected to improve. Changes in the appearance of the facility as seen from a key vantage point will be documented using an artist's rendering or photographic simulation.

3.8 TRAFFIC

Baseline traffic data to be collected will include current traffic counts, roadway classifications, current levels of service (LOS), projected traffic data, scheduled improvements, and adopted levels of service. These data will be collected from Wakulla County and the Florida Department of Transportation (DOT). The results of this data gathering effort will be presented in Section 2.2.7 of the SCA.

The impacts of construction on the transportation system will be evaluated based on the size of the workforce, the amount of truck traffic expected, information on occupancy rates of workers' vehicles, the number of shifts expected to be used, and commuting patterns of the workforce. The impact on the area's road network will be evaluated based on data such as current traffic counts, projected traffic counts and the projected number of trips generated during construction of the project.

Trip generation will be based on construction traffic for the construction phase and will be determined using the ITE Trip Generation Manual (latest edition) or other accepted data. The study area boundary will be delineated by the degree of traffic distribution required by typical traffic impact studies in the applicable jurisdiction. Wakulla County typically requires traffic to be traced until the traffic loading is less than three percent of the service volume at the adopted LOS. For example, a 700-vehicle per hour roadway would require trips to be traced from the site until fewer than 21 peak hour trips remain on that particular roadway section. Leon County requires one percent of the capacity to be traced from the site, thus requiring seven trips or more to be accounted for on the same type roadway.

To the extent the existing Purdom workforce is present during construction, they will be added to the daily and peak hour estimates of trips to and from the site. For the operational phase which follows construction, the permanent workforce at the plant is expected to be reduced from pre-construction levels. Therefore, the long-term impact to the roadway system due to the project is expected to be reduced from the current level.

Level of service analyses will be performed based on the Florida DOT LOS Manual. Standard look-up tables will be used unless more detailed analysis becomes necessary. The more detailed analysis will be performed using the computer programs provided with the Florida DOT LOS Manual. Level of service standards will be those identified in the Comprehensive Plan for each jurisdiction. Work programs for the implementing agencies of Florida DOT, Leon County and Wakulla County will be reviewed to determine all planned capital improvements to the area roadway system.

3.9 ASSOCIATED LINEAR FACILITIES

3.9.1 Electric Transmission Line

No new transmission lines are required to be constructed for the project. Only an upgrade of the existing lines connecting the Purdom Station to Tallahassee will be necessary. The upgrade will involve the replacement of the existing conductor with a new, larger diameter conductor. Although certification is unnecessary, SCA Section 6.1 will provide a description of the activities required to make this change and document compliance with Chapter 62-814 F.A.C. regarding electric and magnetic fields. Noise levels generated by the line in both decibel (dB) and A-weighted decibel (dBA) scales will also be presented.

3.9.2 Reclaimed Water Pipeline

The project will entail the construction of a reclaimed water pipeline from the St. Marks Water Treatment Plant to the power plant site. The pipeline will be about 0.9 miles in length.

A general description of the project will be presented. Topics discussed will include:

- Project purpose;
- Termination points;
- Width of right-of-way needed; and
- Pipeline capacity.

Information provided by this discussion will be incorporated into SCA Section 6.2.

The preferred pipeline route will be delineated on a 1:4,800 base map. Major geographic features will be shown on the map including communities and major water courses. Results of these discussions and the map will be presented in SCA Section 6.2.

Pipeline design characteristics will be described, including line capacity and typical pipeline design parameters and geometry. Illustrations of typical pipeline structures will be presented. No new access roads will be needed.

The socio-political environment of the corridor area will also be presented in the SCA within Section 6.2. Easements or title which must ordinarily be obtained from any government agency will be identified. Known scenic, cultural or natural landmarks in the preferred corridor and within one-half mile will be shown on the 1:4,800 scale maps. Text discussions characterizing these areas will be presented. Bio-physical environmental considerations of the corridor area will be presented.

The quantity of land to be disturbed by construction will be estimated. Typical steps in construction will be discussed, including right-of-way preparation, trench excavation, and installation. Special construction techniques or practices to be employed in sensitive areas will also be identified and described. Potential erosion problems associated with construction activities will be discussed along with mitigation measures which would be used as necessary to prevent water quality degradation.

Descriptions of the types and quantities of solid wastes generated by right-of-way preparation and pipeline construction will be presented. Methods of disposal such as mulching, burning, and site removal will be discussed.

Project construction impacts on ecological resources will be limited because roads and other disturbed areas will be used. If applicable, based on the route proposed for certification, discussions will include terrestrial, wetland, and aquatic ecology impacts on important species. The focus will be on any significant habitat change which may be brought about by clearing of vegetation and pipeline placement. The potential impact of pipeline construction and right-of-way preparation on human populations and their proximity to the preferred corridor will be discussed. General discussions regarding inconveniences to traffic and other local functions will be provided.

3.9.3 Natural Gas Pipeline Lateral

Expansion of the existing natural gas pipeline lateral supporting the site will be permitted by the Florida Gas Transmission Company. Although certification of the existing Florida Gas Transmission right-of-way is unnecessary, SCA Section 6.1 will provide a general description of the anticipated pipeline expansion and its impacts.

4.0 QUALITY ASSURANCE PROGRAM

A Quality Assurance (QA) Program will be designed and implemented to meet the specific needs of the Purdom Unit 8 Project. This QA Program will be developed to establish the guidelines for licensing and field sampling and monitoring activities performed during site certification activities. The program will meet Federal, State, and local requirements. The objectives and elements of the QA Program are summarized below. A detailed QA Program will be developed and expanded as the scope of the technical procedures evolve.

4.1 PROGRAM OBJECTIVES

The QA Program is designed and will be administered to meet the following objectives:

- Ensure that administration of the QA Program is supportive of licensing requirements, yet independent of the project management, thus guaranteeing that QA standards are not compromised when meeting project deadlines or other objectives;
- Ensure that the project team properly follows the established lines of authority and responsibility;
- Ensure that all project personnel are properly qualified to perform their assigned tasks;
- Ensure that data collected in field activities are obtained and documented by proper methods and procedures;
- Ensure that information developed for use in permit and license documents is appropriately prepared, reviewed, and filed;
- Ensure that sample analysis is performed by a laboratory with a DEP-approved Comprehensive QA Plan (the City of Tallahassee analytical laboratory has such a CompQAP); and
- Ensure that site development and engineering activities are conducted in accordance with accepted standards and procedures including reviews, checks, and approvals.

4.2 PROGRAM ELEMENTS

To achieve the stated objectives, the QA Program consists of both comprehensive and project-specific DEP Quality Assurance Plans.

The DEP Quality Assurance Rule (Chapter 62-160, F.A.C.) requires that a Comprehensive QA Plan (CompQAP) describe all sampling and analysis capabilities of an organization which are pertinent to DEP programs and rules. Foster Wheeler Environmental and the City of Tallahassee analytical laboratories both have approved CompQAPs. Raytheon Engineers & Constructors has submitted a CompQAP to DEP Quality Assurance Section and is awaiting approval. A QA Project Plan (QAPP) will be submitted in compliance with Section 62-160.300 (9)(c), F.A.C., which requires a QAPP for sampling and analysis activities for special surface water studies such as those to be conducted during preparation of an SCA. The QAPP will be prepared to reflect limitations and requirements of the PPSA and this POS.

Purdom Unit 8

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APPENDIX A
SITE CERTIFICATION APPLICATION CROSS-REFERENCE

The following SCA format is based on the 1983 Instruction Guide for Certification Applications DEP Form 62-1.211(1). SCA chapters and sections are cross-referenced below to appropriate POS sections.

<i>SCA Chapter/Section and Title</i>	<i>Cross-Reference to POS Section</i>
1.0 Need for Power and the Proposed Facilities	1.2
2.0 Site and Vicinity Characterization	1.5
2.1 Site and Associated Facilities Delineation	1.5
2.2 Sociopolitical Environment	2.3, 3.7
2.2.1 Governmental Jurisdictions	3.7
2.2.2 Zoning and Land Use Plans	3.7
2.2.3 Demography and Ongoing Land Use	3.7
2.2.4 Easements, Title, Agency Works	3.7
2.2.5 Regional, Scenic, Cultural and Natural Landmarks	3.5, 3.7
2.2.6 Archeological and Historic Sites	3.5, 3.7
2.2.7 Socioeconomics and Public Services	2.3, 3.7, 3.8
2.3 Biophysical Environment	2.0, 3.0
2.3.1 Geohydrology	3.2
2.3.2 Subsurface Hydrology	3.2
2.3.3 Site Water Budget and Area Users	2.2, 3.1
2.3.4 Surficial Hydrology	2.2, 3.1
2.3.5 Vegetation/Land use	2.4, 3.4
2.3.6 Ecology	2.2, 2.4, 3.3, 3.4
2.3.7 Meteorology and Ambient Air Quality	2.1
2.3.8 Noise	3.6
2.3.9 Other Environment Features	3.0
3.0 The Project and Directly Associated Facilities	1.0
3.1 Background	1.5
3.2 Site Layout	1.5.2
3.3 Fuel	1.5.2
3.4 Air Emissions and Controls	1.5.2.2
3.4.1 Air Emission Types and Sources	1.5.2.2
3.4.2 Air Emission Controls	1.5.2.2
3.4.3 Best Available Control Technology	1.5.2.2
3.4.4 Design Data for Control Equipment	1.5.2.2
3.4.5 Design Philosophy	1.5.2.1, 1.5.2.2
3.5 Project Water Use	1.5.2.3
3.5.1 Heat Dissipation System	1.5.2.3
3.5.2 Domestic/Sanitary Wastewater	1.5.2.3
3.5.3 Potable Water Systems	1.5.2.3, 1.5.2.5
3.5.4 Process Water Systems	1.5.2.3, 1.5.2.5

<i>SCA Chapter/Section and Title</i>	<i>Cross-Reference to POS Section</i>
3.6 Chemical and Biocide Waste	1.5.2.5
3.7 Solid and Hazardous Waste	1.5.2.4, 3.1
3.7.1 Solid Waste	1.5.2.3, 3.1
3.7.2 Hazardous Waste	1.5.2.3, 1.5.2.4
3.8 On-Site Drainage System	1.5.2.4
3.9 Materials Handling	1.5.2.4
4.0 Effects on Site Preparation, and Project and Associated Facilities Construction	2.0, 3.0
4.1 Land Impact	2.0, 3.0
4.1.1 General Construction Impacts	2.0, 3.0
4.1.2 Roads	3.8
4.1.3 Flood Zones	2.2, 3.1
4.1.4 Topography and Soils	3.2
4.2 Impact on Surface Water Bodies and Uses	2.2
4.2.1 Impact Assessment	2.2.3, 3.1
4.2.2 Measuring and Monitoring Programs	2.2, 3.1
4.3 Groundwater Impacts	3.2
4.4 Ecological Impacts	2.2, 2.4, 3.3, 3.4
4.5 Air Impact	2.1.3
4.6 Impact on Human Populations	2.3, 3.5, 3.6, 3.7, 3.8
4.7 Impact on Landmarks and Sensitive Areas	3.7
4.8 Impact on Archeological and Historic Sites	3.5
4.9 Special Features	3.7
4.10 Benefits from Construction	2.3, 3.7
4.11 Variances	See Note 1
5.0 Effects on Project Operation	2.0, 3.0
5.1 Effects of the Operation of the Heat Dissipation System	See Note 2
5.1.1 Temperature Effect on Receiving Body of Water	2.2.3
5.1.2 Effects on Aquatic Life	2.2, 3.3
5.1.3 Biological Effects of Modified Circulation	2.2, 3.3
5.1.4 Effects of Offstream Cooling	2.2.3, 3.3
5.1.5 Measurement Program	2.2.3
5.2 Effects of Chemical and Biocide Discharges	See Note 2
5.2.1 Industrial Wastewater Discharges	2.2.3
5.2.2 Cooling Tower Blowdown	2.2.3
5.2.3 Measurement Programs	2.2.3
5.3 Impacts on Water Supplies	2.2, 3.1, 3.2
5.3.1 Surface Water	2.2, 3.1
5.3.2 Groundwater	3.2
5.3.3 Drinking Water	2.2, 3.2
5.3.4 Leachate and Runoff	3.1
5.3.5 Measurement Programs	3.1

<i>SCA Chapter/Section and Title</i>	<i>Cross-Reference to POS Section</i>
5.4 Solid/Hazardous Waste Disposal Impacts	1.5.2.3, 3.1, 3.2
5.4.1 Solid Waste	1.5.2.3, 3.1, 3.2
5.4.2 Hazardous Waste	3.1, 3.2
5.5 Sanitary and Other Waste Discharges	See Note 2
5.6 Air Quality Impacts	2.1, 2.4, 3.4
5.7 Noise	3.6
5.8 Changes in Non-Aquatic Species Populations	2.2, 3.4
5.9 Other Project Operation Effects	2.0, 3.0
5.10 Archeological Sites	3.5
5.11 Resources Committed	2.0, 3.0
5.12 Variances	See Note 1
6.0 Linear Facilities	3.9
6.1 Electric Transmission Line	3.9.1
6.2 Reclaimed Water Pipeline	3.9.2
6.3 Natural Gas Pipeline Lateral	3.9.3
7.0 Economic and Social Effects of Project Construction and Operation	2.3
7.1 Socioeconomic Benefits	2.3
7.2 Socioeconomic Costs	2.3
7.2.1 Temporary External Costs	2.3
7.2.2 Long-Term External Costs	2.3
8.0 Site and Design Alternatives	See Note 3
9.0 Coordination	See Note 4
10.0 Appendices	
10.1 Federal Permit Applications or Approvals	
10.1.1 316 Demonstrations	See Note 5
10.1.2 NPDES (Stormwater) Application/Permit	See Note 5
10.1.3 Hazardous Waste Disposal Application/Permit	See Note 5
10.1.4 Section 10 or 404 Application/Permit	See Note 6
10.1.5 Prevention of Significant Deterioration Application/Permit	See Note 7
10.1.6 Coastal Zone Management Certifications	See Note 5
10.1.7 Federal Aviation Administration	See Note 8
10.2 Zoning Descriptions	3.7
10.3 Land Use Plan Descriptions	3.7
10.4 Existing State Permits (including NPDES (Industrial))	1.5.3
10.5 Monitoring Programs	2.0, 3.0
10.6 Mathematical Calculations	2.0, 3.0

1. If known at the time of application, any anticipated variance from applicable standards will be discussed in the SCA, with appropriate justification. None are currently anticipated
2. The Purdom Unit 8 Project will not discharge wastewater or cooling water to waters of the State or the U.S. The heat dissipation system is a zero discharge system.

Purdom Unit 8

3. Current project plans do not involve permits or activities which are expected to require an Environmental Impact Statement under the National Environmental Policy Act (NEPA). Therefore, there is no need to present analysis of alternatives required by NEPA, and there will be no such presentations in either this POS or the SCA.
4. A record of government communications will be made and will form the basis of this section of the SCA.
5. Any Federal permit application or approved documentation will be contained in this Appendix. If a particular permit is not required, a statement to that effect will be contained in this Appendix.
6. A Section 404 permit application will be included if any wetland under the jurisdiction of the U.S. Army Corps of Engineers is to be affected. No permitting under Section 10 is anticipated.
7. A Prevention of Significant Deterioration (PSD)/Title V Operating Permit application will be prepared and included as an Appendix to the SCA. Its format and content will be in accordance with DEP guidelines. Information on background air quality, air quality impact assessment techniques, and air pollution control technology, as described in POS Section 2.1 will provide input to the PSD permit application.
8. An FAA Notice of Proposed Construction or Alteration may be required for the proposed stack; if so, a copy of the notice will be included here.

APPENDIX B

AIR QUALITY MODELLING PROTOCOL

Introduction

The development of and agreement on a modelling protocol is suggested by U.S. Environmental Protection (EPA) and the Florida Department of Environmental Protection (DEP) prior to embarking on any major air quality modelling exercise. This protocol describes, in some detail, the models (and model options) which will be used, the meteorological and emissions data which will be input to the model, the receptor grids which will be utilized, and the analyses which will use the model results. Unlike the remainder of this Plan of Study, this modelling protocol is being submitted for formal DEP approval.

Netting Analysis

The proposed project will be a major modification of a major existing source for the criteria pollutants. In accordance with Rule 62-212.400, F.A.C., and the Draft New Source Review Workshop Manual (EPA, 1990), a modification is subject to PSD review only if the net emissions increase of any pollutant emitted by the source, as a result of the modification, is "significant." Typically, this means that the net emissions increase is greater than the PSD Significant Emission Rates (Table 212.400-2 in 62-212.400 F.A.C.). However, since the Purdom Plant is within 10 km of a Class I area, any net increase in a regulated pollutant which will cause an increase of $1 \mu\text{g}/\text{m}^3$ (24-hour average) in the Class I area is considered significant. Prior to commencing the modelling analysis described in this protocol, a netting analysis will be conducted in accordance with the procedures in the PSD Workshop Manual. The PSD regulations indicate that modelling analyses need to be conducted for only those pollutants with significant net increases resulting from the modification. However, in the interest of providing a more complete picture of project impacts, the City of Tallahassee intends to model the proposed project impacts for all PSD regulated pollutants and Florida Draft Ambient Reference Concentrations (FARCs) for which the project will have quantifiable emissions.

General Modelling Approach

General Modelling Approach - The air quality impact assessment will consist of a proposed source significant impact area analysis, a PSD increment consumption analysis, an ambient air quality standards impact analysis, and an additional impacts analysis. In addition, the need for ambient monitoring will be evaluated. These analyses are discussed in greater detail below. The modelling approach will follow EPA and DEP modelling guidelines for determining compliance with applicable PSD increments and ambient air quality standards (AAQS). EPA modelling guidance is provided in the Guideline on Air Quality Models (40 CFR 51, Appendix W) as well as the Draft New Source Review Workshop Manual (EPA, 1990). DEP guidance on conducting the analyses is provided in Rule 62-212.400 F.A.C.

Based on current EPA and DEP policies, the highest annual average and highest second-high short-term (i.e., 24 hours or less) predicted concentrations (critical concentrations) will be selected for comparison to applicable AAQS and PSD increments. However, the highest short-term predicted concentrations will be used for comparison to significance levels. The use of a

five-year meteorological data base in the modelling analysis, as proposed below, allows a comparison of the predicted highest second-high short-term concentration to applicable short-term PSD increments and ambient air quality standards. The highest second-high concentration is calculated for a receptor field by:

- Eliminating the highest concentration predicted at each receptor;
- Identifying the second-high concentration predicted at each receptor; and
- Selecting the highest concentration among those second-high concentrations.

This approach is consistent with the air quality standards and PSD increments which permit one short-term average exceedance per year at each receptor.

The general modelling approach for each air quality impact analysis will commence with a significant level impact phase. Then, if indicated, screening and refined multi-source modelling phases will be conducted for those pollutants having a significant impact. The major difference between the two latter phases is the receptor grid used when predicting concentrations and the number of meteorological data periods evaluated. In general, concentrations for the screening phase will be predicted using a coarse mesh receptor grid and a five-year meteorological data base. The screening phase will identify the critical receptors associated with the highest and highest second-high short-term concentrations for all applicable pollutants and averaging periods. The predicted concentrations at those critical receptors will be evaluated in greater detail in the refined phase of the analysis.

The refined phase of the analysis will be performed by predicting concentrations using a fine mesh receptor grid centered over each of the critical receptors identified in the screening phase of the modelling analysis. Several critical receptors will be evaluated for each year of meteorological data containing the meteorological conditions which caused the critical concentrations identified in the screening phase analysis. This approach will be used to ensure that valid highest second-highest (critical) short-term concentrations will be obtained for comparison to applicable air quality standards and PSD increments.

Model Selection and Use

The most current version of Industrial Source Complex (ISC) dispersion model will be used to evaluate the emissions from the proposed units. As of the date of this protocol, this is ISC3 (Version 9525096113). This model has been downloaded from the EPA Technology Transfer Network (TTN), Support Center for Regulatory Air Models (SCRAM) bulletin board. The model and its use are covered in the Users Guide (EPA, 1995a). The ISC3 model was selected primarily for the following reasons:

1. EPA and DEP have approved the general use of the model for air quality dispersion analysis because the model assumptions and methods are consistent with those in the Guideline on Air Quality Models.
2. The ISC3 model is capable of predicting the impacts from stack, area, and volume sources that are spatially distributed over large areas and located in flat or gently rolling terrain.

3. The results from the ISC3 model are appropriate for addressing compliance with AAQS and PSD increments since the model can predict the highest as well as the highest second-high concentration and period of occurrence for 1-hour, 3-hour, 8-hour and 24-hour averaging periods at each receptor for each full year of hourly meteorological data used. The short-term or long-term versions of the ISC3 model can be used for annual averages.
4. The ISC3 model has several options and features that allow it to handle certain situations in a variety of ways. For this analysis, the EPA regulatory default options will be used to predict the maximum impacts from the facility.

Area Classification

The ISC3 model has rural and urban options which affect the wind speed profile exponent law, dispersion rates, and mixing-height formulations used in calculating ground-level concentrations. The criteria used to determine when the rural or urban mode is appropriate are based on land use near the proposed plant's surroundings (Auer, 1978). If the land use is classified as heavy industrial, light-moderate industrial, commercial, or compact residential for more than 50 percent of the area within a 3 km radius circle centered on the proposed source, the urban option should be selected. Otherwise, the rural option is more appropriate.

Based on the use of USGS topographic maps, it has been preliminarily concluded that the land use is consistent with the use of the rural rather than urban options.

GEP Stack Height/Downwash Considerations

If the stack for the proposed unit or existing units are less than Good Engineering Practice (GEP), then the potential for building downwash based upon the dimensions of nearby buildings must be considered in the modelling analysis. The procedures used for addressing the effects of building downwash are those recommended in the ISC3 Dispersion Model User's Guide and are incorporated into the ISC3 model. The effective height and effective width of structures are input to the model and are used to modify the dispersion parameters. The Unit 8 stack is planned for GEP height; however, the stacks of the existing units are believed to be less than GEP.

The possibility of on-site structures influencing off-site concentrations due to the structures creating a cavity recirculation region will be evaluated. The first level of screening will be performed to determine if a structure is within 3H of the property line (where H = structure height). Structures greater than 3H from the property line are not expected to have an off-site cavity. Structures which are within 3H of the property line will be further evaluated using the method presented in the SCREEN3 Model User's Guide (EPA, 1995b) to determine the cavity height, length and concentration. The results of these calculations will be used in subsequent analyses.

Plant Loads/Ambient Temperatures

Operating load can affect emission parameters, and therefore ground-level impacts, because exit temperature and velocity change along with source emission rate. Three Unit 8 operating load cases will be analyzed before the significant impact area analysis using ISC3 and one year of meteorological data. These loads will be selected to cover the range of normal plant operations (probably ~~60%~~55%, ~~80%~~75% and 100%). The Unit 8 load case shown in the analysis to cause

the highest impacts will be used in the subsequent analyses. The new unit will also be modelled at three ambient temperatures (20°F, 59°F and 95°F) to determine which produces the highest impacts. Thus, with three loads and three ambient temperatures to consider, a matrix of at least nine cases will be evaluated.

Meteorological Data

The air quality modelling analysis will use hourly preprocessed National Weather Service (NWS) surface meteorological data from Tallahassee, Florida and concurrent twice-daily mixing heights from Apalachicola, Florida for the years 1985 to 1989. These are the locations and years recommended by DEP. The preprocessed hourly meteorological data file for each year of record used in the analysis obtained from DEP will contain randomized wind direction, wind speed, ambient temperature, atmospheric stability using the Turner (1970) stability classification scheme, and mixing heights. The anemometer height of 6.7 meters, to be used in the modelling analysis, was obtained from NWS Local Climatological Data summaries for Tallahassee.

Emission Inventory

Emissions and stack parameters of the proposed project for the significant impact area analysis as well as subsequent analyses will be generated from the most current engineering information available at the time the modelling is performed. Emissions data will be obtained for SO₂, NO_x, PM₁₀, lead (Pb) and CO.

For those pollutants for which the project will have a significant impact, it will be necessary to consider other sources in the AAQS and PSD increment consumption analyses. The sources to be considered will be determined in accordance with guidance in EPA's Guideline on Air Quality Models and Draft New Source Review Workshop Manual. Sources located beyond the significant impact area of the proposed source will be screened based on the "Screening Threshold" method (North Carolina DNR, 1985) to determine whether they should be included in the modelling analysis. Source information will be obtained from DEP and from other recent air quality modelling studies for the area. Maximum allowable emission rates will be used in all modelling analyses involving other sources (and the existing Purdom units). A listing of sources in the inventory will be submitted to DEP for review and concurrence prior to the initiation of any detailed multi-source modelling effort. Existing sources will be categorized as increment consuming PSD sources, PSD increment expanding sources, or non-PSD affecting sources depending upon whether their emissions have increased or decreased from their "baseline" emissions and whether they commenced construction before or after the PSD baseline date for the area, which also will be obtained from DEP.

Stacks which have similar emission parameters will be modelled as co-located sources to simplify the analysis. Further, stacks which have similar stack gas compositions will be modelled using a unit emission rate and the results scaled to get the impacts for each separate pollutant.

Receptor Locations

Receptors will be placed at locations considered to be "ambient air," which EPA has defined as "that portion of the atmosphere, external to buildings, to which the general public has access" [40 CFR 50.1(e)]. All of the site will not be ambient air because access to it is restricted. Therefore, the closest receptors will be on the site property lines. A plot plan showing the plant boundary

and areas where public access is precluded will be provided, as will a description of the measures taken to prohibit public access (e.g., fences, signs along the river).

The significant impact area analysis will use a polar receptor grid centered over the proposed source. The polar receptor grid will consist of 36 radials, each separated by 10 degree increments and extending out from the plant boundary line in all 36 directions. The length of the radials will depend upon the distance at which the proposed source impacts reach the significant impact levels as defined for each applicable pollutant in the PSD regulations, but will be no more than 50 km.

The screening phase for the air quality impact analysis will use a coarse mesh polar receptor grid (0.50 km distance between rings with radials spaced 10 degrees apart out to 6 km and then at 1.0 km spacing out to at least 10 km) centered over the proposed source. The receptor grid will begin coverage at the plant boundary line and extend outward in all directions. The receptor grid will provide sufficient receptor coverage to determine the locations of all critical concentration receptors to be evaluated in the refined phase of the analysis.

The refined phase of the air quality impact analysis will use a fine mesh cartesian receptor grid (0.10 km grid resolution) composed of 121 discrete receptors within a 1.0 km square grid centered over each critical receptor.

The Class I areas will be modelled using receptors locations provided by and/or approved by DEP. This receptor set will include receptors spaced 75 meters apart on the northern most boundary of the St. Marks Wilderness Area. After the screening modelling, additional receptors will be placed at 15 meter intervals (four on each side of the maximum impact location to ensure that the maximum concentration and its location are identified.

Background Concentrations

To analyze impacts relative to AAQS, estimates of background pollutant concentrations will be needed. Background concentrations should include contributions from sources not included in the modelling analyses as well as contributions from natural sources. Since it is anticipated that no on-site monitoring program will be required, background concentrations will be obtained from DEP.

The Guideline on Air Quality Models provides some guidance regarding the determination of background concentrations. The data collected as part of the DEP monitoring network will be interpreted following this guidance. For pollutants not monitored in the area, recommendations regarding representative background concentrations will be obtained from DEP.

Proposed Analyses

Proposed Source Significant Impact Area Analysis - The proposed project will be modelled using the SO₂, NO_x, PM₁₀, and CO emissions data discussed above. The significant impact area will be defined on a pollutant-specific basis for all applicable averaging periods according to the significant impact levels defined in the PSD regulations. Highest rather than highest second-high short-term values will be used in this analysis. The greatest significant impact area resulting from an analysis of all applicable averaging periods for a given pollutant will be the significant impact

area for that pollutant. The significant impact area will be used to determine the source interaction zone for the screening phase of the air quality impact analysis.

Ambient Air Monitoring Requirements Analysis - The results of the significant impact area analysis will be compared to “de minimis” monitoring concentrations in Table 212.400-3 in Rule 62-212.400 F.A.C. to determine if ambient air monitoring is required or if a monitoring exemption will be granted. While the City of Tallahassee does not anticipate the need for ambient air monitoring, a monitoring plan will be prepared if the modelling results demonstrate a need.

PSD Increment Consumption Analysis

The Purdom Site is in a Class II PSD area. However, two Class I areas are located nearby, the St. Marks Wilderness Area (as close as 0.875 km south, southeast, and southwest of the site) and the Bradwell Bay Wilderness Area (28 km west of the site). The next closest Class I areas are the Okefenokee Wilderness Area in Georgia (about 170 km east-northeast of the site) and the Chassahowitzka Wilderness Area in Florida (about 200 km southeast of the site); these are too far away to warrant consideration in the analysis. The Class II PSD increment consumption analysis will consist of modelling the PSD source inventory for those PSD pollutants projected to have a significant off-site impact using the ISC3 model and comparing the highest second-highest short-term average and highest annual average impacts to the appropriate Class II PSD increments. For the Class I PSD increment consumption analysis, the ISC3 model will be used to assess whether the net proposed project impact will be “significant,” with significance defined both by the EPA in the recently proposed New Source Review Reform Regulations (61 FR 38,249, dated July 23, 1996) and by the National Park Service/Fish and Wildlife Service. If the net proposed project impacts are predicted to be significant, Regardless of the results of this assessment, the City of Tallahassee will conduct multi-source modelling using an agreed upon inventory of sources whose emissions would impact the Class I areas for the pollutant or pollutants of concern.

Ambient Air Quality Standards Impact Analysis - The area around the Purdom site is attainment or unclassifiable for all of the criteria pollutants. The ambient air quality standards impact analysis will consist of modelling all appropriate (permitted) and existing sources identified on the emissions inventory for each criteria air pollutant (SO₂, NO₂, CO, PM₁₀, and Pb) for which the proposed project will have a significant impact. The highest second-high short-term and highest annual average impacts will be combined with appropriate background concentrations for each applicable air pollutant and averaging time and compared to the appropriate state and federal ambient air quality standards to determine whether the ambient air quality standards are exceeded. The background concentrations for each applicable air pollutant will be determined using the procedures described above. No modelling of proposed project impacts on ozone (O₃) concentrations is planned as it is not considered to be feasible for single source impact analysis.

Additional Impacts Analysis -Additional impacts analysis will be performed for those criteria and non-criteria PSD regulated air pollutants emitted in significant quantities to determine air pollution impacts on soils and vegetation caused by emissions from the proposed project and emissions resulting from associated growth. Specifically, a growth projection analysis including population growth projection and industrial growth project data will be performed. The impacts

of this growth on air quality will be estimated. Modelled concentrations and/or depositions will be used to determine if there will be any significant impacts on soils or vegetation. The need for an Air Quality Related Values (AQRV) analysis for the St. Marks and Bradwell Bay Wilderness Areas will be determined after further discussions with the DEP and the Federal Land Managers. A screening (level-1) visibility impact analysis will be conducted for the nearest Class I areas using the technical guidance provided in the Workbook for Plume Visual Impact Screening and Analysis (EPA, 1988b). A Background Visual Range of 65 km will be used for this analysis. Should the results of the Level-1 screening analysis indicate a visible plume, additional discussions will be held with DEP and the Federal Land Managers on the need for additional analyses.

FARC Analysis

The analysis of hazardous air pollutants (HAPs) will follow the DEP guidelines. The maximum impacts from the proposed project for those HAPs regulated under the Clean Air Act Amendments and on the DEP Draft FARC list will be predicted and compared with the guidelines.

References

- Auer, A.H., Jr. 1978. Correlation of Land Use and Cover with Meteorological Anomalies. *Journal of Applied Meteorology*. 17:636-643.
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- U.S. Environmental Protection Agency. 1985. Compilation of Air Pollutant Emission Factors. Volume I: Stationary Point and Area Sources. AP-42. Office of Air Quality Planning and Standards. Research Triangle Park, NC.
- U.S. Environmental Protection Agency. 1986. Supplement A to Compilation of Air Pollutant Emission Factors. Office of Air Quality Planning and Standards. Research Triangle Park, NC.
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- U.S. Environmental Protection Agency. 1990. Draft New Source Review Workshop Manual. Office of Air Quality Planning and Standards. Research Triangle Park, NC.
- U.S. Environmental Protection Agency. 1995a. Users Guide for the Industrial Source Complex (ISC3) Dispersion Models. Volume I. EPA - 454/B-95-003a. Office of Air Quality Planning and Standards. Research Triangle Park, NC.

Purdom Unit 8

U.S. Environmental Protection Agency. 1995b. SCREEN3 Model Users Guide. EPA- 454/B-95-004. Office of Air Quality Planning and Standards. Research Triangle Park, NC.

U.S. Environmental Protection Agency. 1996. Guideline on Air Quality Models (40 CFR 51 Appendix W).

TO: Power Plant Siting Review Committee
FROM: Buck Oven, Siting Coordination Office *HSO*
DATE: November 12, 1996 *97-36 ?*
SUBJECT: Purdom Unit 8, PA 96-35, Module 8046
Proposed Plan Of Study

Attached please find a copy of the City of Tallahassee's responses to comments on their proposed Plan of Study (POS) to prepare an application for certification of a new generating system at the Purdom Power Plant. Please review and comment on the POS and return your comments as soon as practical but no later than December 9, 1996.

Attach:

*To: Cleve
Marty*

*As Kevin E-Mailed earlier please
look over Tallahassee Purdom & POS
and send any comments to
Buck through me.
Thanks
Al*



CITY HALL
300 S. ADAMS ST.
TALLAHASSEE, FL
32301-1731
904/891-8100
TDD 1-800/955-8771

RON WEAVER
Mayor
SCOTT MADDOX
Mayor Pro Tem

JOHN PAUL BAILEY
Commissioner
DEBBIE LIGHTSEY
Commissioner
STEVE MEISBURG
Commissioner

STEVEN C. BURKETT
City Manager
ROBERT B. INZER
City Treasurer-Clerk

JAMES R. ENGLISH
City Attorney
RICARDO FERNANDEZ
City Auditor

November 6, 1996

Certified Mail #P230 286 978

Mr. Hamilton S. Oven, Jr.
Siting Coordination Office
Department of Environmental Protection
2600 Blair Stone Road MS480
Tallahassee, FL 32399

RECEIVED
NOV 07 1996
BUREAU OF
AIR REGULATION

Dear Mr. Oven:

Subject: Purdom Unit 8 Project
Responses to Comments of the Proposed Plan of Study and Air Quality
Modelling Protocol

Thank you for forwarding agency comments on the Proposed Plan of Study and Air Quality Modelling Protocol which we distributed to you and others during our meeting of September 10, 1996. We have discussed the comments with various individuals at the various agencies and have modified the Plan of Study accordingly. Attached please find a compilation of the comments received and our responses to them. In many cases, agencies had no comments.

Also attached are ten copies of the Final Plan of Study and Air Quality Modelling Protocol for your use and distribution. This document reflects the revisions made in response to the agency comments received, as well as minor editorial or clarifying changes. Revisions are clearly marked for your convenience. Although we have not requested a formal Binding Written Agreement, we believe that we now have agency concurrence on the studies which we will perform. This revised document will form the basis of our approach to preparing the Site Certification Application.

Please call me at (904) 891-8850 should you have any questions on either attachment. We would be pleased to meet with you or any other agency personnel at any time to clarify the project plans or our approach to the SCA.

Sincerely,

Jennette Curtis
Environmental Administrator

Attachments

JC/ns

cc: Department of Transportation
Department of Community Affairs
U.S. Fish & Wildlife Service
Northwest Florida Water Management District
Apalachee Regional Planning Council
Game and Fresh Water Fish Commission

Department of State
Wakulla County
U. S. Forest Service
City of St. Marks
Leon County

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**PURDOM UNIT 8
PLAN OF STUDY COMMENTS/RESPONSES**

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION - AIR QUALITY

Comment:

The Bureau of Air Regulation has conducted a preliminary review of the Proposed Plan of Study (POS) and Air Quality Modelling Protocol for the planned Purdom Unit 8 Project Site Certification and PSD Permit application. Based on the information received, it appears that the POS insures that all of the key concerns which we foresee will be addressed.

Response:

No response or changes to the POS required.

Comment

The approach to a determination of Best Available Control Technology (BACT) for nitrogen oxides (NO_x) from the combustion turbine appears sound. Our most recent BACT emission limits have ranged from 12-15 parts per million. We understand that the City is working with the turbine manufacturer to achieve even lower emissions. This will result in relatively low NO_x emissions, which are less than the emissions from the existing units during recent years, and will establish limits where there are presently none. Similarly, with respect to sulfur dioxide (SO₂), the use of clean fuels will insure that emissions remain below those of recent years and will reduce the permitted limits by roughly 99 percent. Our view of the project with respect to the rest of the pollutants is similar although we understand that emissions of carbon monoxide and particulate matter will increase but will be permitted at levels well below existing limits.

Response:

No response or changes to the POS required.

Comment:

We recommend that the City include in the POS a review of requirements under the Title IV Federal Acid Rain Program. These are given in Rule 62-214, F.A.C. and 40 CFR 72. In reviewing the POS, we also note that the request to set emission limits for SO₂ at 1.3 pounds per million Btu heat input (lb/10⁶ Btu) for existing Units 5 and 6 cannot be accomplished under Title V.

Response:

The City has revised the POS to include a review of Title IV requirements. It is the City's intent to file a Title IV Acid Rain Permit application together with the SCA. With respect to the Title V requested SO₂ emission limit of 1.3 lbs/mmBtu, it is understood, based on a 10/15/96 meeting with DEP, that the emission limit can be accomplished through the Title V process.

Comment:

Attached are comments that we received from the Department of Interior Fish and Wildlife Service following the September 25 meeting and their review of the POS. These are consistent with what their representative from the Denver office stated at the meeting. We consider the

Modelling Protocol to be acceptable following incorporation of those comments into a revised POS.

Response:

Please see the attached responses to the individual comments from the U.S. Fish and Wildlife Services. As the City has addressed all of their comments, it is understood that the Modelling Protocol is now acceptable to the DEP.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION - SITING

Comment:

Information on the length and location of the FGT natural gas line that has to be upgraded to serve the plant should be provided. While this work is not included in the siting application, the impacts of this work will be secondary impacts of the Purdom project and therefore needs to be identified and reviewed.

Response:

Expansion of the existing natural gas line will be permitted by the Florida Gas Transmission Company. SCA Section 6.1 will provide a general description of the anticipated pipeline expansion and its impacts including information, to the extent available, on the length and location of the line to be upgraded. No revision to the POS is required.

Comment:

The water quality standards identified to be used in the baseline survey included the freshwater standards for heavy metals. Sampling for heavy metals in the water column is usually done one foot above the bottom, which may be within the saltwater wedge in the river. Salinity should be checked at the same time and depth that the heavy metal samples are taken. Which standard to use for the data should be determined on the bases of the salinity.

If the salt wedge proves to be a distinct and relatively constant feature in the river, the applicant should consider doing baseline sampling both above and within the wedge.

Response:

The permitting history of the Purdom Station and F.A.C. 62-302.200(20) are quite consistent and clear that the "receiving" body of water is considered to be fresh water. As the intake will be near the surface, the sampling will be near the surface as well. Also, as a result of the zero discharge design, we expect to have no impact on the salt wedge. Thus, there is no need to revise the POS.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION - WATER QUALITY

Comment:

I see they are planning to use Hester-Dendy (HDs) samplers instead of the 20-dip net sweeps that we developed, this is probably because HDs are still in the rule. However, they might want to consider using the dip nets since we are moving to this gear type. We should check with Russ. I am not familiar with this kind of permitting scenario, but I wanted my comment to be put forth in case it proves relevant to the ones managing this project.

Response:

HD samples were collected during August 1996. At that time, no dip net sweeps were conducted and, due to the depths of the channel, there are only limited habitats available in which to conduct sweeps. Benthic macronivertebrates studies were based on studies previously conducted at the Purdom Plant and the St. Marks River by the FDEP, Dames & Moore and others. Typically, these studies did not include dip net sweeps. Currently, HD sample collections are required by the rule as the appropriate method for sampling benthic macroinvertebrates. As a result, there are no plans to include dip net sweeps in the Foster Wheeler Work Plan. If, at a later date, the State should require that dip net sweeps be conducted, these samples can be collected by field personnel at the site and shipped to us. No changes in the POS are required.

Comment:

I looked briefly at the Tallahassee proposal from the perspective of reuse. It probably will come as no surprise but I strongly support the use of reclaimed water for cooling purposes at the power plant.

Please note, that Part VII of Chapter 62-610, F.A.C. regulates industrial uses of reclaimed water from domestic wastewater sources. Current rules require only basic disinfection and secondary treatment for such a reuse activity. We are proposing to add the full Part III requirements (including filtration high-level disinfection, Class I reliability, minimum size, and others) for use of reclaimed water in open cooling towers. This will be part of the Phase II rulemaking which should be completed in early 1998. If this change is made in Phase II, it would apply to wastewater projects having complete permit applications submitted after the effective date of the Phase II revisions.

Response:

Should Part VII of Rule 62-610 F.A.C. be modified in the future, and should the modified rule be applicable to the project, the City would expect to be able to demonstrate that equivalent or superior treatment is being applied. For instance, discontinuance of dechlorination at the St. Marks Treatment Plant would result in greater disinfection than is currently achieved. In any case, no change to the POS appears warranted.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION - SOLID WASTE

No comments.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION - PROTECTED SPECIES

No comments.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION - MARINE RESOURCES

No comments.

U.S. FISH AND WILDLIFE SERVICE - AIR QUALITY BRANCH

Comment:

Place modelling receptors at 75-meter intervals along the nearest Class I area boundary (boundary length approximately 1.8 km) for all analyses. After initial screening identifies the receptor with the maximum concentration value, bracket this receptor with additional receptors at 15-meter intervals (four on each side) to pinpoint the maximum concentration value. We recommend this because of the proximity of the source to the Class I area boundary and the need, therefore, for ensuring the maximum concentration value and its location are identified.

Response:

The POS will be revised to include receptors at 75-meter intervals along the northern most boundary of the St. Marks Wilderness Area. Additional receptors will be placed around the receptor with the maximum impact (determined during the screening level modelling). These receptors will be spaced at 15-meter intervals (four on each side of the maximum impact receptor).

Comment:

Employ the FWS/National Park Service (NPS) significant impact levels to assess contribution to Class I increment consumption. FDEP has routinely required PSD applicants to apply these levels.

Response:

The City of Tallahassee does not agree that the FWS/NPS Significant Impact Levels (SILs) are the appropriate values to use for determining whether the project will have a significant impact on any Class I areas. The City believes that the Class I SILs proposed by the U.S. Environmental Protection Agency (EPA) in the July 23, 1996, Federal Register are more appropriate especially since it is understood that DEP has decided to use these EPA values in the ongoing Chassahowitzka Study. However, since the City plans to do multiple source modelling of Class I area impacts regardless of whether the project's impact are considered "significant", the importance of the question of which set of SILs to use is considerably diminished. Therefore, the POS has been modified to indicate that project impacts will be compared to both sets of SILs.

Comment:

Conduct a visible plume impact analysis using a background visual range at 65 km. When emissions estimates are finalized, consult with our office on the need for a regional haze analysis.

Response:

The visibility screen impact analysis will be conducted using VISCREEN and a background visual range of 65 km. The FWS will be provided with the final emission estimates when available.

Comment:

Consult with our office on the need for additional air quality related values analyses if final emissions estimates indicate that PSD review is required for pollutants besides PM and CO (i.e., sulfur dioxide, nitrogen oxides).

Response:

Although projected emission rates are not yet finalized, it is still the City's intent to "net out" for SO₂ and NO_x. However, for purposes of general understanding, the City would like to know the AQRVs which the Fish and Wildlife Service deems significant vis-à-vis SO₂ and NO_x emissions for the St. Marks Wilderness Area.

U.S. FISH & WILDLIFE SERVICE - ST. MARKS NWR

Comment:

As you know, the Purdom facility is not immediately connected to lands and waters of the St. Marks National Wildlife Refuge. The connection is only through air and water flow. The water connector, the St. Marks River, is State of Florida waters, so I will not presume to provide comments on the State's jurisdiction. I am comfortable that if the Purdom Unit 8 Project meets the State of Florida requirements for clean water, then the Refuge's interest through this water way will be protected. The same is basically true with Ellen Porter's clean air comments. If the Purdom Unit 8 Project satisfies Ms. Porter's clean air concerns/feedback, then St. Marks NW Refuge's concerns will have been addressed.

Other than clean air and water concerns, the Purdom Unit 8 project appears to be a neutral factor as far as St. Marks NW Refuge's concerned, and the Refuge will neither benefit or lose by its presence.

Response:

The project's zero discharge wastewater design will ensure that the State of Florida clean water requirements will be met. In fact, several wastewater streams currently discharging to the St. Marks River will be eliminated thus enhancing water quality. As indicated in other responses, the City has addressed Ellen Porter's [U.S. Fish & Wildlife Service air Quality Branch] clean air comments. No additional changes in the POS are required.

U.S. FOREST SERVICE

Comment:

As discussed earlier, the air quality related values (AQRV) of Bradwell Bay Wilderness, a CAA Class I area under Forest Service management, are fresh air (lack of odor) and vegetation. Upon learning that preliminary emission estimates project no net increase in emissions of sulfur or nitrogen, our concern regarding impacts on these values (AQRVs) diminished greatly.

Response:

No response or changes in the POS required.

Comment:

Even though visibility (regional haze) need not be considered as a Bradwell Bay AQRV, there is some concern regarding possible impacts of a plume from Purdom No. 8 that might be visible near the Wilderness. In as much as plume visual impact screening analysis must be done, regardless of the presence of a Class I area, I'd appreciate it if you would include a viewpoint within the Wilderness when you run the screening model. During the meeting, representatives of

the USDA Fish and Wildlife Service said their data showed that a background visual range of 65 km should be used in these screening models. We agree with that determination.

Response:

The Air Quality Modelling Protocol has been modified to indicate the use of a 65 km background visual range for visual plume screening. The visibility analyses will include a viewpoint in the Bradwell Bay Wilderness Area for your information.

Comment:

With earlier correspondence, we sent a copy of *Foliar Ozone Injury Surveys (1995) In National Forests in Alabama, Florida and Mississippi* (Chappelka, 1996). It reported only slight injury at Bradwell Bay, typical of the five years over which this inventory was repeated. During discussion of this topic, the presence of an ozone monitor, managed by the National Dry Deposition Network, near the town of Sumatra was mentioned. Data from this monitor may be helpful in evaluating rural ozone conditions in the Florida panhandle. Information from this ozone monitor may be obtained from Mr. Ralph Baumgardner, US-EPA, Office of Research & Development (919-541-4625).

Response:

The search for background air quality data will include a call to Mr. Baumgardner regarding the availability of ozone data from the Sumatra Area.

FLORIDA GAME AND FRESH WATER FISH COMMISSION

Comment:

The Office of Environmental Services of the Florida Game and Fresh Water Fish Commission has reviewed the referenced POS and finds that it adequately addresses fish and wildlife issues of interest to our agency.

Response:

No response or changes in the POS required.

APALACHEE REGIONAL PLANNING COUNCIL

Comment:

The Council staff has several issues of concern which should be addressed in the final study. First, it is the understanding of Council staff that the project is located in the floodplain of the St. Marks River. Discussion should be added concerning what will happen in the event of a flood. Similarly, the facility is located in a hurricane evacuation zone. The continued operation of the facility during and after a major storm should be addressed. For instance, are there circumstances in which the facility would close? What happens if access roads are unusable?

Response:

SCA Section 2.3.4 will address the 100-year flood levels at the site which is located in the flood plain. Section 3.8 will address the on-site drainage system and its performance during floods. The ability of the facility to operate during storms and/or floods will also be addressed in this section. Section 4.2 will discuss project impacts on flooding levels.

Comment:

Second, there is no discussion of what happens if there is a fire onsite. Will the town of St. Marks fire department need additional equipment? Will other area departments be called? Are there any special risks involved? Please add discussion of this concern to the study.

Response:

Since the Purdom Generating Station is an existing power plant, fire protection measures and equipment are already in place. Existing practices for fire protection and fire fighting at the plant will be described in Section 2 of the SCA. In addition, any further needs for equipment, cooperative service arrangements, etc. that could involve local governments or volunteer fire departments in the area will be identified and discussed in the SCA in Section 7.

Comment:

Council staff has already had discussions with Hall Planning and Engineering concerning the traffic study for this project. The proposed POS appears adequate. It also appears that sufficient information is proposed concerning potential impacts to the water quality of the St. Marks River and the air quality within the St. Marks National Wildlife Refuge.

Response:

No response or changes to the POS required.

FLORIDA DEPARTMENT OF TRANSPORTATION

Comment:

Map(s) showing the location of the Florida Gas Transmission Pipeline relative to the State Highway System (SHS), including locations where the pipeline will be enlarged, locations where the pipeline will cross the roadways and roadway rights-of-way and any locations where the pipeline will be replaced.

Response:

The existing gas pipeline system will be upgraded and will be permitted by the Florida Gas Transmission Company. Although not required, the SCA Section 6.1 will provide a general description of the anticipated pipeline expansion (which is expected to occur within the existing right-of-way) and its associated impacts including, to the extent available, the maps requested. No changes in the POS are required.

Comment:

If there are any SHS roadway or associated right-of-way crossings by the pipeline, please identify the method which will be used to install the pipeline in these locations. In addition, the traffic management plans to be used during this construction should be outlined.

Response:

Permitting of the natural gas pipeline upgrade will be handled by Florida Gas Transmission through the normal permitting procedures of the Florida Department of Transportation (FDOT), including submittal (as normally required by FDOT) of drawings and/or a description of pipeline installation methods and Traffic Control Plans called for in this comment. Florida Gas

Transmission is the best source of this information since they are quite experienced at pipeline construction in relation to road rights-of-way in Florida and will be directly responsible for the work. To the extent available from FGT at the time of SCA preparation, the requested information will be provided in the SCA.

With regard to the water reuse pipeline connecting the City of St. Marks' treatment plant to the Purdom Generating Station, it is expected that the pipeline will cross or use primarily local road rights-of-way within the City of St. Marks. Any state highway system, county or city road rights-of-way to be used or crossed for water reuse pipeline construction will be identified in the SCA. The SCA will also include a description of pipeline installation methods. Pipeline installation methods and traffic control plans will be in conformance with FDOT Traffic Control Plan Standards for state highway system road rights-of-way, if any are crossed or used. For local road rights-of-way crossed or used, construction plans will implement local permit requirements to ensure public safety and convenience.

Comment:

The height of the Unit and any attendant structures should be indicated in the description of the Unit and the relationship of these structures to the flight paths of any published approach to the Tallahassee Regional Airport should be defined.

Response:

The height of the Unit has been added to the description. The project is not expected to pose a hazard to air navigation and this will be addressed in the Site Certification Application. If necessary, a "Notice of Proposed Construction or Alteration" will be filed with the FAA.

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Comment:

The District's primary concerns with this project will be its potential impacts to surface water resources (St. Marks River) and associated biota. We expect the study to fully address net loss of water in the system relative to low flow and any impacts which might result under such conditions. Such impacts would likely be related to an increase in the extent of saltwater intrusion up the river, among other possibilities. Although details concerning number and locations of samples or river profile stations are not provided in the POS, we feel that the proposed study (assuming appropriate sample sizes and locations are used) will provide information appropriate for our review needs.

We found some of the statements concerning reduction of water withdrawals and "zero discharge" to be somewhat confusing in terms of the overall changes in water use which will result from construction of Unit 8. Although actual withdrawals may be reduced, a net loss of water would occur in the St. Marks River because the discharge of once-through cooling water would be eliminated. It would be helpful if you could prepare some simple graphics showing the current and proposed water budget for the Purdom Plant so one can easily be compared to the other. This would help reviewers and interested citizens to better understand the water use impacts of the proposed changes.

Response:

The SCA will fully address the potential project impacts to surface water resources including the minor net loss of water in the system relative to low flow and associated impacts. This results from the selection of Best Conventional Pollutant Control Technology (closed cycle cooling towers) for cooling at Unit 8. These minor impacts will be included in Chapter 5, Sections 5.1.2 and 5.3.1. Simplified flow diagrams for the Purdom Station water use will be presented as part of SCA Sections 2.3.3 and 2.3.4 for the existing station, and 3.5.1 and 3.5.4 for conditions with the proposed project. No changes to the POS are required.

FLORIDA DEPARTMENT OF STATE - DIVISION OF HISTORICAL RESOURCES

Comment:

A review of the Florida Site File indicates that no significant archaeological or historical sites are recorded for or likely to be present within the area of the proposed Purdom Unit 8. We also note that a new pipeline, constructed along existing streets, will be necessary to delivery fuel to the new unit. The new pipeline may proceed without further involvement from our agency if project activities do not entail construction of lines that are located outside existing road prisms (the ditch-to-ditch or curb-to-curb area). Therefore, conditioned upon the construction of the new pipeline within existing road prisms, it is the opinion of this office that the proposed project will have no effect on historic properties listed, or eligible for listing, in the *National Register of Historic Places*, or otherwise of historical or architectural value.

Response:

The City of Tallahassee contacted DHR again in 1996. DHR confirmed their earlier evaluation and stated that a “review of the Florida Site File indicates that no significant archaeological or historical sites are recorded for or likely to be present within the area of the proposed Purdom Unit 8.” The DER also concluded the project will have no effect on historic properties, provided that any new off-site pipelines (i.e., the water reuse pipeline) which may be part of the project be constructed within the limits of existing road prisms. Therefore, no changes to the POS are required.

FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS

No comments.

WAKULLA COUNTY

No comments.

LEON COUNTY

No comments.

CITY OF ST. MARKS

No comments.

FLORIDA PUBLIC SERVICE COMMISSION

No comments.



IN REPLY REFER TO:

United States Department of the Interior

FISH AND WILDLIFE SERVICE

1875 Century Boulevard
Atlanta, Georgia 30345
October 11, 1996

Mr. C. H. Fancy
Chief, Bureau of Air Regulation
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road, MS 48
Tallahassee, Florida 32399-2400

Dear Mr. Fancy:

Thank you for including Ms. Ellen Porter of our Air Quality Branch in the September 25, 1996, meeting held at your office regarding the city of Tallahassee's proposed plan of study and air quality modeling protocol for Purdom Unit 8. Ms. Porter presented technical comments on behalf of the Fish and Wildlife Service, which are summarized in the enclosed technical review document.

Thank you, too, for giving us the opportunity to consult with your staff and the applicant at this early stage in the permitting process. As you know, such early consultation helps ensure timely resolution of potential problems. We appreciate your cooperation in notifying us of proposed projects with the potential to impact the air quality and related resources of our Class I air quality areas. If you have questions, please contact Ms. Ellen Porter of our Air Quality Branch in Denver at 303/969-2617.

Sincerely yours,

Noreen K. Clough
Regional Director

Enclosure

BEST AVAILABLE COPY

**Technical Review of the Proposed Plan of Study
and Air Quality Modeling Protocol
for the City of Tallahassee's Purdom Unit 8
St. Marks, Wakulla County, Florida**

by

**Air Quality Branch, Fish and Wildlife Service
October 4, 1996**

The City of Tallahassee is proposing to construct a new gas-fired unit (Purdom Unit 8) at its Purdom Generating Station in St. Marks, Florida. The new unit will replace two older coal-fired units (Purdom Units 5 and 6). The Purdom Station is located less than one kilometer (km) north of the boundary of St. Marks Wilderness Area, a Class I air quality area administered by the U.S. Fish and Wildlife Service (FWS). Final emissions estimates are not available, but information provided by Tallahassee indicates that the project will result in significant increases in emissions of particulate matter (PM) and carbon monoxide (CO). Therefore, the project will be subject to New Source Review (NSR) and Prevention of Significant Deterioration (PSD) Review.

The applicant proposes to conduct analyses to assess potential impacts of the project on air quality, PSD increment consumption, and Class I area resources. To adequately assess impacts to the Class I area, we suggest that Tallahassee:

- 1) Place modeling receptors at 75 meter intervals along the nearest Class I area boundary (boundary length approximately 1.8 km) for all analyses. After initial screening identifies the receptor with the maximum concentration value, bracket this receptor with additional receptors at 15 meter intervals (4 on each side) to pinpoint the maximum concentration value. We recommend this because of the proximity of the source to the Class I area boundary and the need, therefore, for ensuring that the maximum concentration value and its location are identified.
- 2) Employ the FWS/National Park Service (NPS) significant impacts levels to assess contribution to Class I increment consumption. FDEP has routinely required PSD applicants to apply these levels.
- 3) Conduct a visible plume impact analysis using a background visual range of 65 km. When emissions estimates are finalized, consult with our office on the need for a regional haze analysis.
- 4) Consult with our office on the need for additional air quality related values analyses if final emissions estimates indicate that PSD review is required for pollutants besides PM and CO (i.e., sulfur dioxide, nitrogen oxides).

Contact: Ellen Porter
(303) 969-2617



IN REPLY REFER TO:

United States Department of the Interior

FISH AND WILDLIFE SERVICE

1875 Century Boulevard
Atlanta, Georgia 30345
October 11, 1996

RECEIVED
OCT 15 1996
BUREAU OF
AIR REGULATION

Mr. C. H. Fancy
Chief, Bureau of Air Regulation
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road, MS 48
Tallahassee, Florida 32399-2400

Dear Mr. Fancy:

Thank you for including Ms. Ellen Porter of our Air Quality Branch in the September 25, 1996, meeting held at your office regarding the city of Tallahassee's proposed plan of study and air quality modeling protocol for Purdom Unit 8. Ms. Porter presented technical comments on behalf of the Fish and Wildlife Service, which are summarized in the enclosed technical review document.

Thank you, too, for giving us the opportunity to consult with your staff and the applicant at this early stage in the permitting process. As you know, such early consultation helps ensure timely resolution of potential problems. We appreciate your cooperation in notifying us of proposed projects with the potential to impact the air quality and related resources of our Class I air quality areas. If you have questions, please contact Ms. Ellen Porter of our Air Quality Branch in Denver at 303/969-2617.

Sincerely yours,

Noreen K. Clough
Regional Director

Enclosure

**Technical Review of the Proposed Plan of Study
and Air Quality Modeling Protocol
for the City of Tallahassee's Purdom Unit 8
St. Marks, Wakulla County, Florida**

by

**Air Quality Branch, Fish and Wildlife Service
October 4, 1996**

The City of Tallahassee is proposing to construct a new gas-fired unit (Purdom Unit 8) at its Purdom Generating Station in St. Marks, Florida. The new unit will replace two older coal-fired units (Purdom Units 5 and 6). The Purdom Station is located less than one kilometer (km) north of the boundary of St. Marks Wilderness Area, a Class I air quality area administered by the U.S. Fish and Wildlife Service (FWS). Final emissions estimates are not available, but information provided by Tallahassee indicates that the project will result in significant increases in emissions of particulate matter (PM) and carbon monoxide (CO). Therefore, the project will be subject to New Source Review (NSR) and Prevention of Significant Deterioration (PSD) Review.

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- 3) Conduct a visible plume impact analysis using a background visual range of 65 km. When emissions estimates are finalized, consult with our office on the need for a regional haze analysis.
- 4) Consult with our office on the need for additional air quality related values analyses if final emissions estimates indicate that PSD review is required for pollutants besides PM and CO (i.e., sulfur dioxide, nitrogen oxides).

Contact: Ellen Porter
(303) 969-2617

Memorandum

Florida Department of Environmental Protection

TO: Buck Oven

FROM: A. A. Linero  10/8

DATE: October 8, 1996

SUBJECT: City of Tallahassee - Purdom Unit 8
Proposed Plan of Study and Air Quality Review

Please forward the following comments to the City of Tallahassee and copy Brian Beals at EPA Region IV and John Bunyak of the National Park Service in Denver.

The Bureau of Air Regulation has conducted a preliminary review of the Proposed Plan of Study (POS) and Air Quality Modeling Protocol for the planned Purdom Unit 8 Project Site Certification and PSD Permit application. Based on the information received, it appears that the POS insures that all of the key concerns which we foresee will be addressed.

The approach to a determination of Best Available Control Technology (BACT) for nitrogen oxides (NO_x) from the combustion turbine appears sound. Our most recent BACT emission limits have ranged from 12-15 parts per million. We understand that the City is working with the turbine manufacturer to achieve even lower emissions. This will result in relatively low NO_x emissions, which are less than the emissions from the existing units during recent years, and will establish limits where there are presently none. Similarly with respect to sulfur dioxide (SO₂), the use of clean fuels will insure that emissions remain below those of recent years and will reduce the permitted limits by roughly 99 percent. Our view of the project with respect to the rest of the pollutants is similar although we understand that emissions of carbon monoxide and particulate matter will increase but will be permitted at levels well below existing limits.

We recommend that the City include in the POS a review of requirements under the Title IV Federal Acid Rain Program. These are given in Rule 62-214, F.A.C. and 40 CFR 72. In reviewing the POS we also note that the request to set emission limits for SO₂ at 1.3 pounds per million Btu heat input (lb/10⁶ Btu) for existing Units 5 and 6 cannot be accomplished under Title V.

Attached are comments that we received from the Department of Interior Fish and Wildlife Service following the September 25 meeting and their review of the POS. These are consistent with what their representative from the Denver office stated at the meeting. We consider the Modeling Protocol to be acceptable following incorporation of those comments into a revised POS.

We can meet with your technical representatives to discuss any of the above matters. If you have any questions on this matter, please call, A. A. Linero, PE, or Cleve Holladay (meteorologist) at (904) 488-1344. You may contact John Brown, PE, or Tom Cascio at the same number regarding any Title IV or Title V concerns.

cc: Clair Fancy, BAR
John Brown, BAR
Ed Middleswart, NWD



CITY HALL
300 S. ADAMS ST.
TALLAHASSEE, FL
32301-1731
904/891-8100
TDD 1-800/955-8771

RON WEAVER
Mayor
SCOTT MADDOX
Mayor Pro Tem

JOHN PAUL BAILEY
Commissioner
DEBBIE LIGHTSEY
Commissioner
STEVE MEISBURG
Commissioner

STEVEN C. BURKETT
City Manager
ROBERT B. INZER
City Treasurer-Clerk

JAMES R. ENGLISH
City Attorney
RICARDO FERNANDEZ
City Auditor

8 October 1996

Mr. Al Linero
Florida Department of Environmental Protection
Twin Towers, MS 3550
2600 Blair Stone Road
Tallahassee, FL 32301

Dear Mr. Linero:

We missed seeing you at the September 12th briefing for environmental groups on the proposed new natural gas-fired electric generating unit at the Purdom Generating Station in St. Marks. Enclosed is some information on the project that you might find helpful. Also enclosed are summaries of the comments we received from the few people who did attend the briefing plus others with whom we have met, including regulatory agency representatives, who were briefed on September 10, 1996, and members of the public who attended the project open houses held between September 17 and 19, 1996.

Your name will be maintained on the project mailing list so that we can continue to keep you informed of our progress through the permitting process. In the meantime, if you have any questions or comments on the project, or wish to have your name removed from the mailing list, please feel free to write to me at the following address or call the project voice mail at (904) 891-5585. You may also contact us via E mail at purdom8@sc.ci.tlh.fl.us.

City of Tallahassee Electric Department
2602 Jackson Bluff Road
Tallahassee, FL 32304

Thank you for your interest in the Purdom Unit 8 Project.

Sincerely,

Rob McGarrah
Project Manager

RECEIVED
OCT 10 1996
BUREAU OF
AIR REGULATION

City of Tallahassee Purdom Unit 8
Briefing/Workshop for Environmental Groups
Comment Summary
September 12, 1996

Attendance List

Gail Kamaras	Legal Environmental Assistance Foundation
Debra Swim	Legal Environmental Assistance Foundation
Ze Ferreira	Project for an Energy Efficient Florida

Comment Summary

- ◆ Concerned about the decision already made to build this unit
- ◆ There may be some additional opportunities to purchase power that will come up. With competition other utilities will be trying to make sure they stay in business.
- ◆ Your gas prices are at odds with forecasts from EIA. Skeptical about those numbers.
- ◆ Landscaping would be good from public standpoint
- ◆ What are the City's intentions with regard to energy conservation and demand-side management programs? Will City meet PSC's goals, or exceed PSC's, or try to get PSC's goals lowered?
- ◆ City doesn't appear to have aimed demand-side management at new construction - missing opportunities that are arising because of growth
- ◆ Even with unit cost of \$440/kw can achieve savings cheaper than can generate -- conservation is part of a pollution prevention strategy
- ◆ Noticed your mission is to provide electricity rather than provide energy services - should use efficiency improvement as a customer retention tool e.g. FSU Law School like a meat locker
- ◆ City's concerns about competition are real; know they need the revenue
- ◆ Project looks to be well-thought out from an environmental management standpoint

City of Tallahassee Purdom Unit 8
Open Houses Comment Summary
September 17-19, 1996

Tallahassee Locations

Attendance List

Paco de la Fuente	UAG
Stan Derzypolski	
Lyn Doby-Stanfield	United Way
Edward J. Malo	
Sherri Braddy	Florida Trail Assoc., Apalachee Chapter
Norene Chase	Big Bend Group of the Sierra Club
Charles A. Cyrus, Sr.	Capital City Chamber of Commerce
John Whitton	Sierra Club
Bob Fulford	CONA
Edwin Thorpe	
Mike McBee	

Comment Summary

- ◆ Wanted details of capacity bidding process
- ◆ Asked about reconductoring of transmission lines
- ◆ Interested in the transmission line conductor. Wondered whether the structures could take the extra weight and what they were made of.
- ◆ Asked about the use of the St. Marks effluent for cooling.
- ◆ Asked several questions on retail wheeling
- ◆ St. Marks and Wakulla County issues/concerns
- ◆ General discussion of decision-making process and why there was some citizen concern.
- ◆ How is Purdom 8 project funded? Should structure rates so higher users fund more of project because of their impact on load. (Lower users pay less)
- ◆ We need more load management
- ◆ General interest in overall process and unit. Very interested in engineering and construction phases. Requested information on Minority Business Enterprise participation on project.
- ◆ General interest to provide other members of Sierra Club with information. Not opposed.
- ◆ Concerned that Tallahassee cannot compete with larger companies if retail competition becomes a reality. Wants to be sure Tallahassee continues to pursue conservation. Concerned about what will happen to the City's smaller customer if there's retail competition.
- ◆ Interested in our public involvement process/format.
- ◆ How are we going to pay for this project? Was told that money was coming from municipal bonds not taxes. Owns other City bonds as investments.

St. Marks

Attendance List

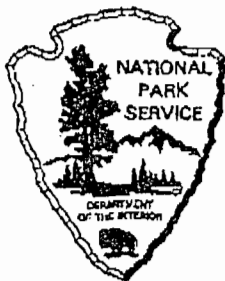
Mike Reffitt	Local 592 Plumbers & Pipefitters
George Tillman	Located 100 feet from property
Marie & Hugh Williams	
John Cooksey	

City of Tallahassee Purdom Unit 8
Open Houses Comment Summary
September 17-19, 1996

David Field	
Micky Cantner	
Allen Hobbs	Shell Island Marina
Alex Hobbs	Shell Island Marina
Chuck Shields	Shields Marina & City of St. Marks
Jennifer Young	
Carlene Daggett	
Charles Daggett	St. Marks City Commissioner
Dave Hedrick	Wave 94 FM
Robert Seidler	
Irvine Leonard	Local 592 Plumbers & Pipefitters
Jack Butler	I.B.E.W.
Joan Hoover	
J. Peterman	City of Tallahassee

Comment Summary

- ◆ Will you be putting rope across intake canal to keep boaters out?
- ◆ Have you cut down bushes in front of manatee sign?
- ◆ Will new unit have heated discharge?
- ◆ Will you be handling storm water?
- ◆ Will residual from zero discharge plant be landfilled?
- ◆ Concerned about manatees - wants to block off Unit 6/7 discharge canal
- ◆ Concerned about noise from hogging during start up. Asked about noise level from new unit.
- ◆ Positive interest in Unit 8. She is an engineer at Olin. Asked about our flood design. Interested in learning about what's planned.
- ◆ Interested in noise from new unit. Complained about noise from hoppers during startup. Asked if existing plant is about or below 55 dba. Asked about storm water treatment and keeping spills out of the river
- ◆ Interested in water demand from St. Marks water system for use in designing their system.
- ◆ Will electric and magnetic fields (EMF) increase with reconductoring of transmission lines? Lives adjacent to line being upgraded. Issue of tax exemption - wants to look up statute. General information on size of unit.
- ◆ Concerned about impact on St. Marks. What are local benefits? Any expansion of site? Any opposition?
- ◆ Support for project. Has lived in St. Marks for 18 years. Wishes us the best.
- ◆ What is existing transmission EMF compared to recondored EMF?
- ◆ What if any additional revenue will come in for St. Marks? Will the water tower bring any increased costs to City of St. Marks?
- ◆ Will the wells also be for St. Marks? Will the existing gas turbines run more or less? Jet engines are noisy. How will this be quiet? Will the gas line have to be upgraded?
- ◆ Noise. Said noise increased about one year ago. Wondered why. Thought trees were cut down.
- ◆ Where is nearest similar unit?
- ◆ Issue of tax exemption



NATIONAL PARK SERVICE AIR RESOURCES DIVISION

P.O. BOX 25287, Denver, CO 80225-0287

FACSIMILE COVER SHEET

Date: 10/04/96

Telephone: (303) 969-2071

Fax: (303) 969-2822

To: Cleve Holladay

From: Ellen Porter

Subject: Summary of September 25, 1996 Meeting RE: City of Tallahassee's
Proposed Plan of Study and Air Quality Modeling Protocol for
Purdum Unit 8

Number of Pages: 5
(Including this cover sheet)

Office Location: 12795 W. Alameda Parkway, Room 215, Lakewood, CO 80228



United States Department of the Interior

FISH AND WILDLIFE SERVICE
WASHINGTON, D.C. 20240



ADDRESS ONLY THE DIRECTOR,
FISH AND WILDLIFE SERVICE

October 4, 1996

Memorandum

To: Regional Director, Region 4

From: Chief, Air Quality Branch

Subject: Summary of September 25, 1996, Meeting re: City of Tallahassee's Proposed Plan of Study and Air Quality Modeling Protocol for Purdom Unit 8, St. Marks, Wakulla County, Florida

On September 25, 1996, Ellen Porter of my staff attended a meeting in Tallahassee, Florida, to discuss the City of Tallahassee's proposed Plan of Study and Air Quality Modeling Protocol for Purdom Unit 8, St. Marks, Wakulla County, Florida. The meeting was held at the Florida Department of Environmental Protection (FDEP) Bureau of Air Regulation and was attended by representatives from FDEP, the City of Tallahassee, the U.S. Forest Service, and the U.S. Fish and Wildlife Service (FWS). In addition to Ms. Porter, FWS was represented by Mr. Joe Reinman of St. Marks National Wildlife Refuge (NWR).

The proposed natural gas-fired Purdom Unit 8 would be built at the City of Tallahassee's existing Purdom Generating Station, less than one kilometer from the boundary of St. Marks NWR. The new unit would replace two older coal-fired units. Ms. Porter provided technical comments on the proposal (see attachment). Mr. Reinman provided information regarding the history, legislative purpose, ecology, and management of St. Marks NWR and Wilderness Area.

We have not been provided with final estimates of air pollutant emissions increases. Therefore, our comments in the attached technical review document are limited to the proposed plan of study and air quality modeling protocol.

Please sign the attached letter and forward it and the technical review document to FDEP by October 10. If you have questions, please contact me at (303) 969-2814 or Ellen Porter at (303) 969-2617.

Sandra V. Silva

Sandra V. Silva

Attachment

Mr. C. H. Fancy
Chief, Bureau of Air Regulation
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road, MS 48
Tallahassee, Florida 32399-2400

Dear Mr. Fancy:

Thank you for including Ms. Ellen Porter of our Air Quality Branch in the September 25, 1996, meeting held at your office regarding the City of Tallahassee's proposed plan of study and air quality modeling protocol for Purdom Unit 8. Ms. Porter presented technical comments on behalf of the U.S. Fish and Wildlife Service, which are summarized in the attached technical review document.

Thank you for giving us the opportunity to consult with your staff and the applicant at this early stage in the permitting process. As you know, such early consultation helps ensure timely resolution of potential problems. We appreciate your cooperation in notifying us of proposed projects with the potential to impact the air quality and related resources of our Class I air quality areas. If you have questions, please contact Ellen Porter of our Air Quality Branch in Denver at (303) 969-2617.

Sincerely,

Noreen K. Clough
Regional Director

cc:

Doug Neeley, Chief
Air and Radiation Branch
U.S. EPA, Region 4
100 Alabama St., SW
Atlanta, Georgia 30303

Dave Wergowske
Air Resources Specialist
USDA Forest Service
2946 Chestnut St.
Montgomery, Alabama 36107

10/04/96

14:01

303 969 2822

NPS AIR RES DIV

003/005

2

bcc:

FWS-REG. 4: AQC

SAMA: Refuge Manager

ARD-DEN: Ellen Porter

National Park Service - AIR

P.O. Box 25287

Denver, CO 80225

al
Thanks
John

I N T E R O F F I C E M E M O R A N D U M

Date: 26-Sep-1996 11:51am EST
From: John Brown TAL
BROWN_J
Dept: Air Resources Management
Tel No: 904/488-1344
SUNCOM: 278-1344

TO: See Below

Subject: Purdom Unit #8 Project

I just reviewed the City of Tallahassee's proposal and noted no reference of the Federal Acid Rain requirements (title IV and 40CFR 72 et al.) . It may be appropriate to remind them of the requirements by posing the following comments:

Has the facility considered the acid rain requirements of Chapter 62-214, FAC, and 40 CFR 72, et al.?

Is the facility aware of the deadline for submittal of the acid rain part application prescribed at 40 CFR 72.30 ?

Has the facility contacted EPA regarding the issues that will be administered by EPA under the acid rain program. Note that EPA establishes an allowance tracking system pursuant to 40 CFR and administers many other aspects of the program. The Region IV representative for acid rain is Scott Davis. It may be prudent to contact him before the project begins to avoid any surprises at the ~~local~~ level.

federal

Perhaps Tom Cascio or I should attend the next meeting to ensure that the facility is aware of these requirements. Let me know if I can be of assistance.

Distribution:

TO: Alvaro Linero TAL (LINERO_A)
CC: Clair Fancy TAL (FANCY_C)
CC: Jeffrey E. Brown TAL (BROWN_JE)
CC: Tom Cascio TAL (CASCIO_T)
CC: Bruce Mitchell TAL (MITCHELL_B)
CC: Hamilton Buck Oven TAL (OVEN_H)

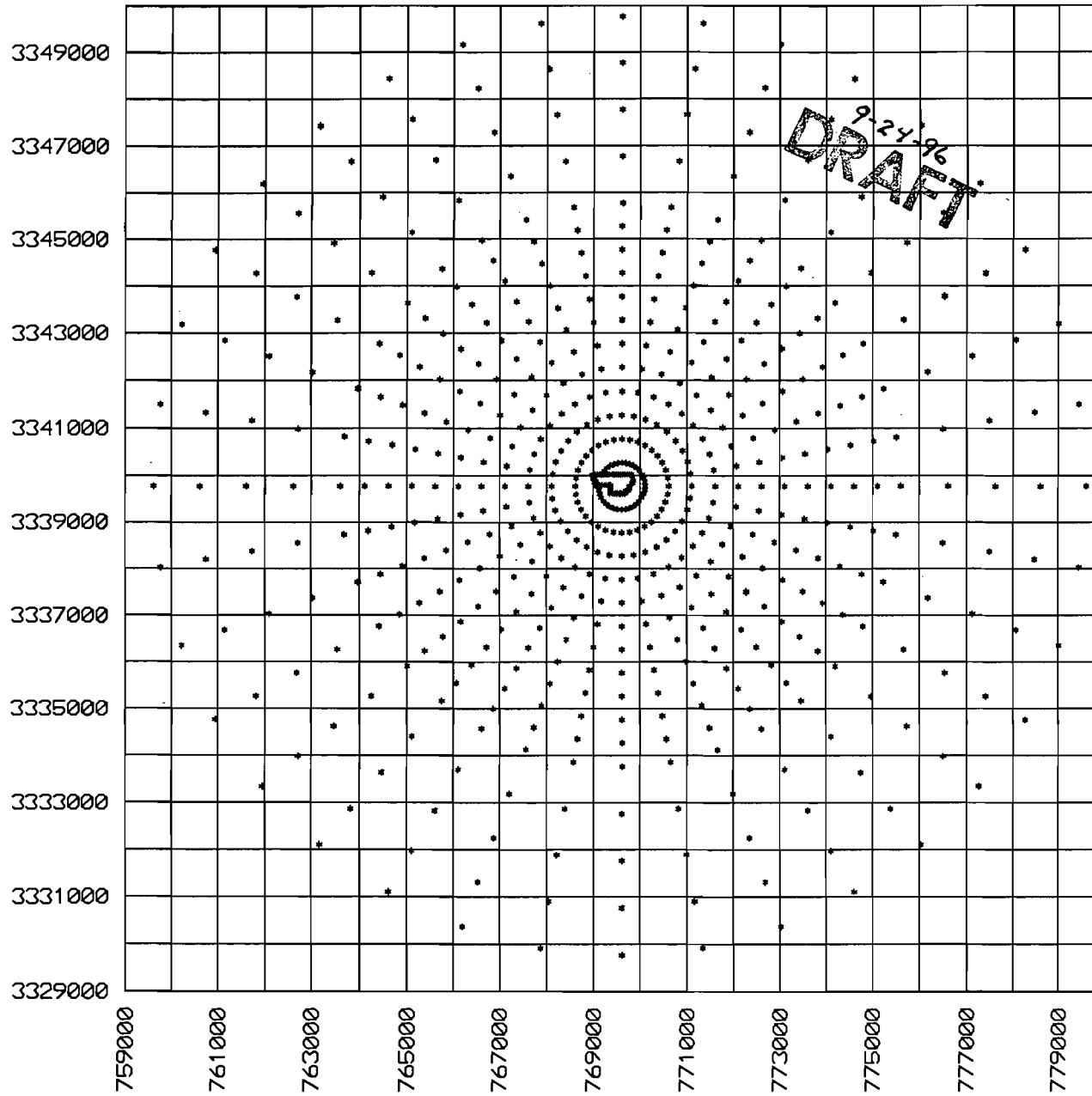
COT/DEP/USFS/USFWS MEETING
September 25, 1996

AGENDA

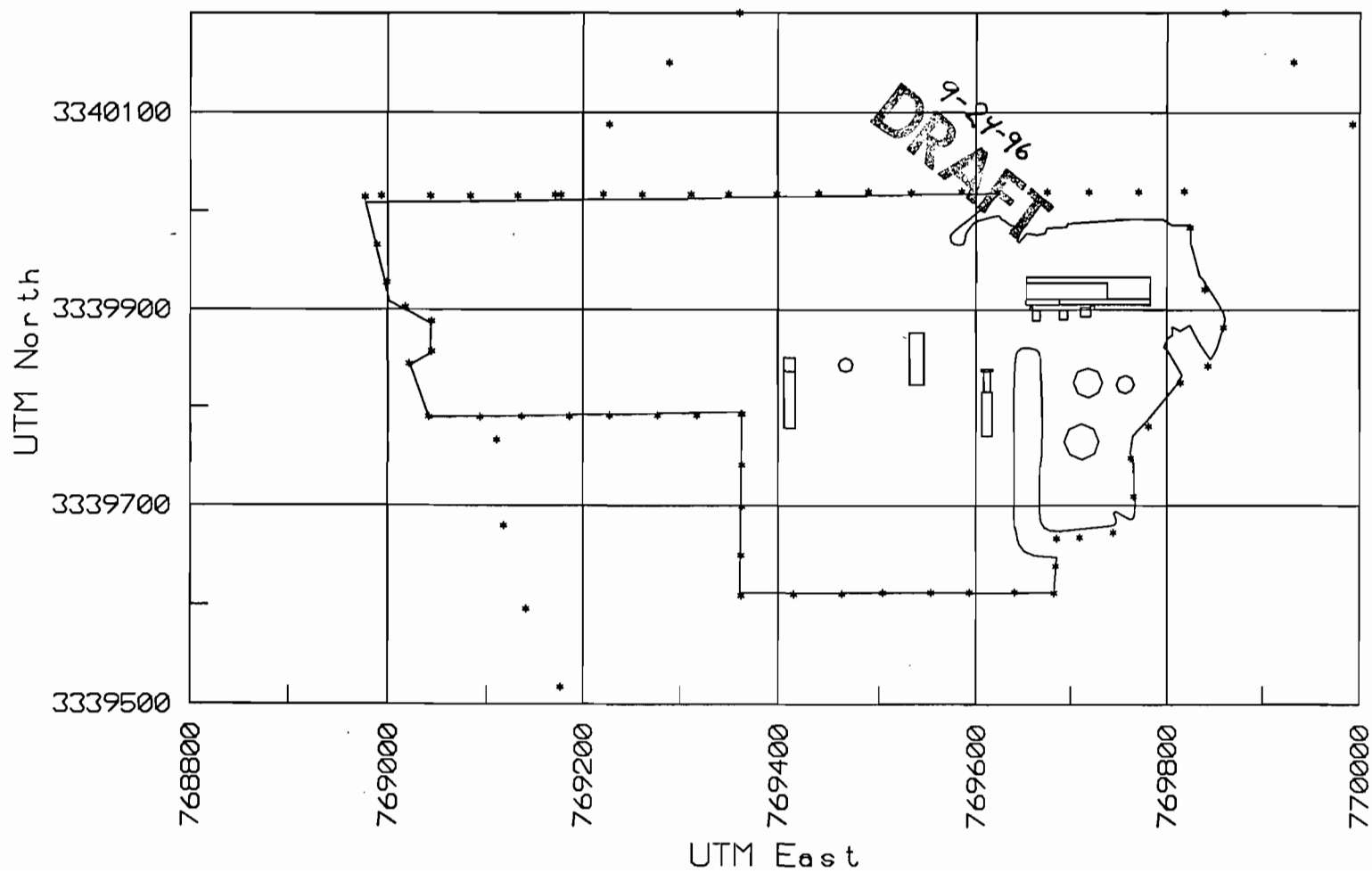
Introductions	J. Curtis
Purdom 8 Project Overview (Air Oriented)	R. McGarrah
Plan of Study/Modelling Protocol Overview	D. Fulle
- Air Quality Issues	
- Air Quality Netting	
Facility-Wide Cap	A. Morrison
BACT Approach	D. Graziani
Modelling Approach	M. Bilello
Comments on Plan of Study/Protocol	DEP USFS USFWS

• PSD

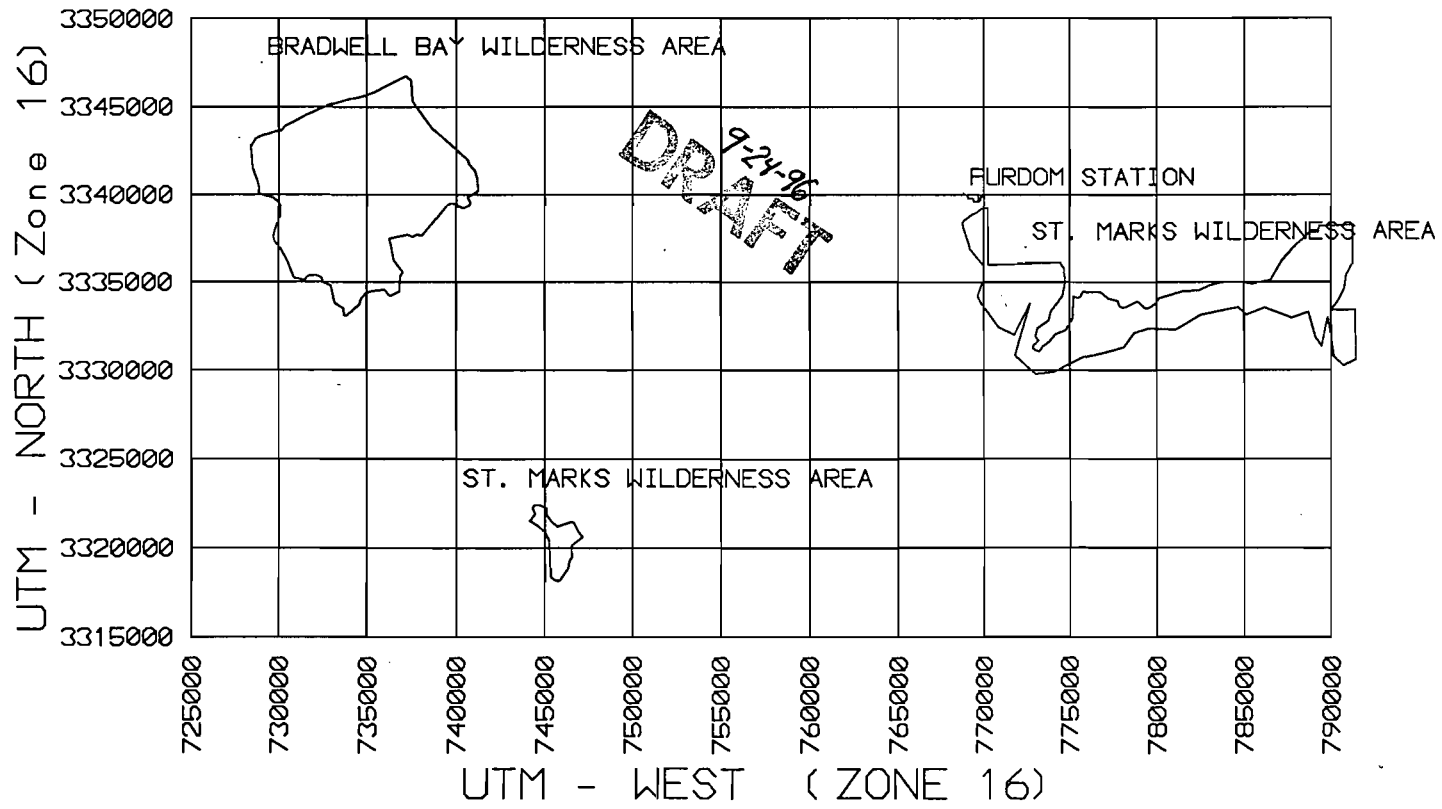
PURDOM UNIT 8 MODELLING RECEPTORS (COARSE GRID)



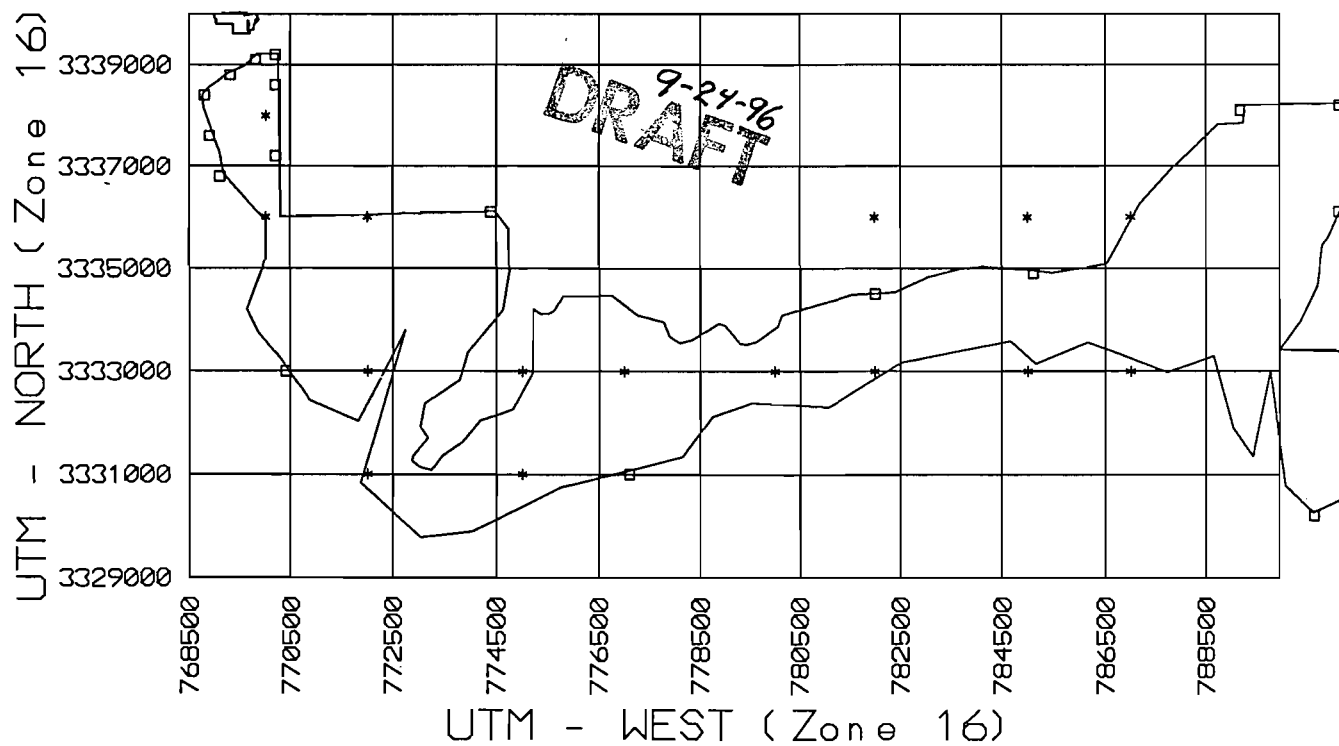
Purdom Station - BOUNDARY RECEPTORS



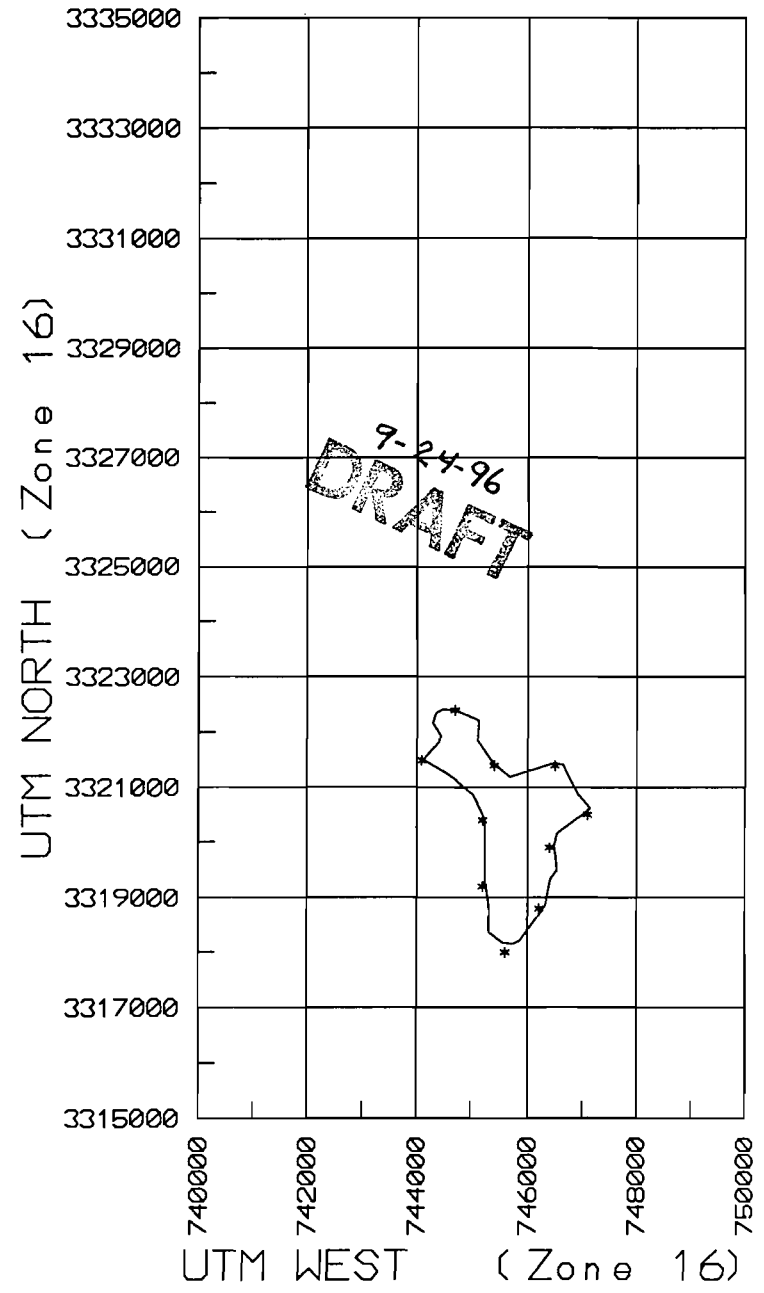
CLASS I AREAS



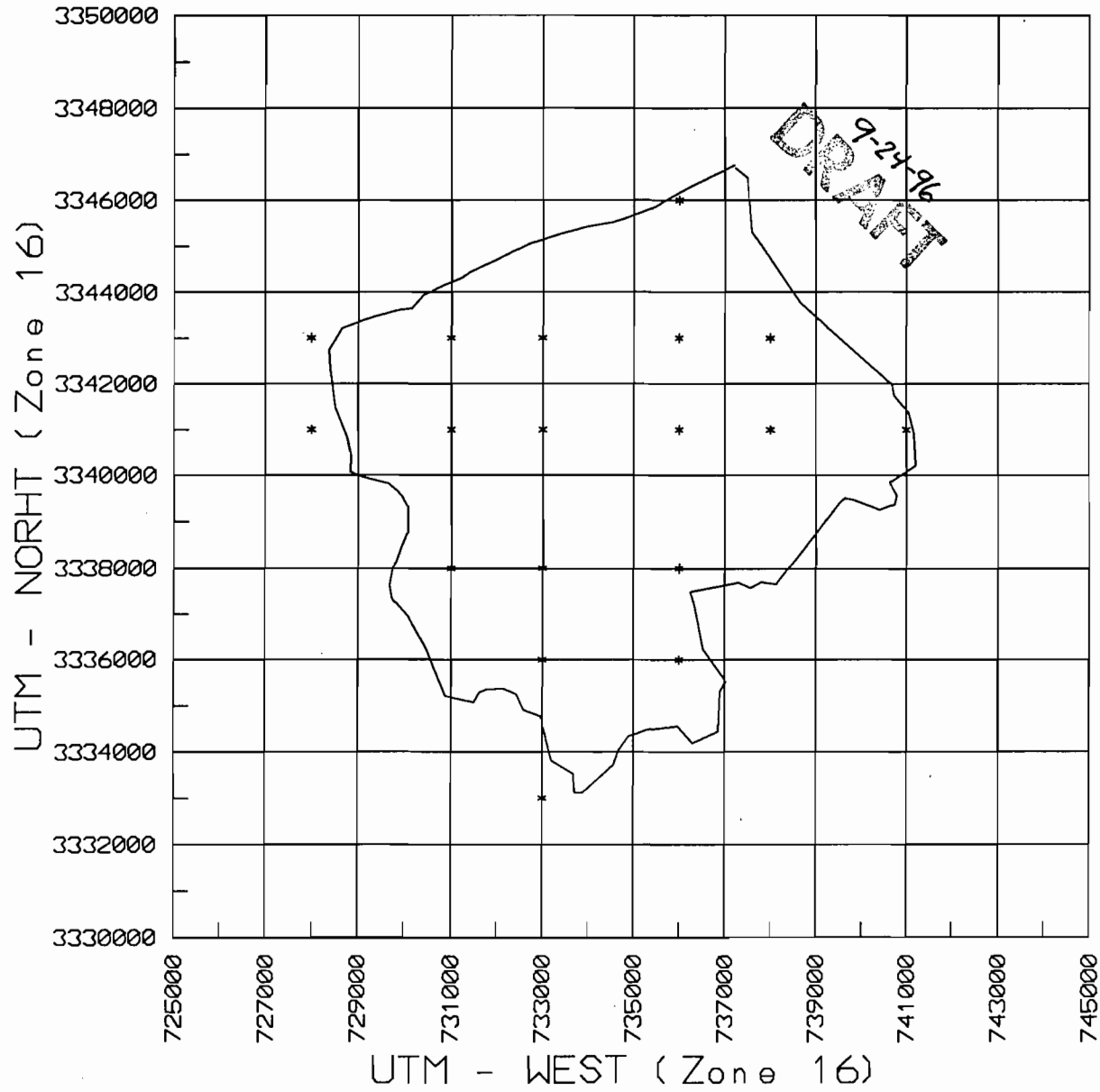
St. Marks Wilderness Area Receptor Locations



St. Marks Wilderness Area - West



BRADWELL BAY WILDERNESS AREA - RECEPTOR LOCATIONS



PURDOM 8 MODELLING SOURCE MATRIX

ANALYSIS	UNIT 1-4	UNIT 5&6	UNIT 7	UNIT 8	COOLING TOWER	CT's	PSD INVENT.	OTHER INVENTORY	B-GROUND AQ
WORST CASE TEMP/LOAD				X					
SIGNIFICANT IMPACT		-X		X	X				
MONITORING EXEMPTION		-X		X	X				
CLASS I	-X	-X	-X*	X	X		x		
CLASS II	-X	-X	-X*	X	X		x		
AAQS			X	X	X	X		x	X
FARC'S				X	X				
VISIBILITY		-X		X	X				

* for annual analysis only



CITY HALL
300 S. ADAMS ST.
TALLAHASSEE, FL
32301-1731
904/891-8100
TDD 1-800/955-8771

RON WEAVER
Mayor
SCOTT MADDOX
Mayor Pro Tem

JOHN PAUL BAILEY
Commissioner
DEBBIE LIGHTSEY
Commissioner
STEVE MEISBURG
Commissioner

STEVEN C. BURKETT
City Manager
ROBERT B. INZER
City Treasurer-Clerk

JAMES R. ENGLISH
City Attorney
RICARDO FERNANDEZ
City Auditor

RECEIVED

SEP 25 1996

**BUREAU OF
AIR REGULATION**

September 23, 1996

Mr. Al Linero
DEP Administrator
Florida Department of Environmental Protection
Twin Towers
2600 Blair Stone Road
Tallahassee, FL 32301

Dear Mr. Linero:

For your information and review, enclosed please find a copy of the City of Tallahassee's Issues Brainstorming Summary collected during our Plan of Study Review Meeting held on September 10, 1996. Again, we would like to thank you for participating in that meeting and brainstorming activity. If you have any future comments or suggestions please feel free to utilize one of the following methods to contact us:

E-mail: purdom8@sc.ci.tlh.fl.us

Voice mail: (904) 891-5585

Telephone: Jennette Curtis (904) 891-8850

We look forward to meeting with you in the very near future to discuss your comments on the Plan of Study.

Sincerely,

Jennette Curtis
Environmental Administrator

JC/ns

Enclosure

cc: Purdom 8 Permitting Team

c:winword:pp8:deppos2.doc



CITY HALL
300 S. ADAMS ST.
TALLAHASSEE, FL
32301-1731
904/891-8100
TDD 1-800/955-8771

RON WEAVER
Mayor
SCOTT MADDOX
Mayor Pro Tem

JOHN PAUL BAILEY
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Commissioner
STEVE MEISBURG
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STEVEN C. BURKETT
City Manager
ROBERT B. INZER
City Treasurer-Clerk

JAMES R. ENGLISH
City Attorney
RICARDO FERNANDEZ
City Auditor

September 18, 1996

Mr. Al Linero
DEP Administrator
Florida Department of Environmental Protection
Twin Towers
2600 Blair Stone Road
Tallahassee, FL 32301

RECEIVED

SEP 20 1996

BUREAU OF
AIR REGULATION

Dear Mr. Linero:

Thank you for attending the City of Tallahassee's (the City) Permitting Process Kick-Off Meeting on September 10, 1996 that was held at the Department of Environmental Protection. The City gained very important and productive feedback from the meeting. The exchange of information with the attendees will be very useful in our planning process.

Hopefully, you have reviewed the Proposed Plan of Study and Air Quality Modelling Protocol and can provide us with comments on that document as we discussed. We look forward to meeting with you in the very near future to discuss those comments with you.

If you have any questions, please do not hesitate to call me at (904) 891-8850.

Sincerely,

Jennette Curtis
Environmental Administrator

JC/ns

cc: Kevin Wailes, City of Tallahassee
Rob McGarrah, City of Tallahassee
Doug Fulle, Foster-Wheeler

c:\winword\pp8\deppos.doc

cc: Cleve Holladay
Marty Costello



CITY HALL
300 S. ADAMS ST.
TALLAHASSEE, FL
32301-1731
904/891-8100
TDD 1-800/955-8771

RON WEAVER
Mayor
SCOTT MADDOX
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STEVEN C. BURKETT
City Manager
ROBERT B. INZER
City Treasurer-Clerk

JAMES R. ENGLISH
City Attorney
RICARDO FERNANDEZ
City Auditor

September 13, 1996

Mr. Al Linero
Department of Environmental Protection
1111 South Magnolia
Tallahassee, Florida 32301

RECEIVED

SEP 18 1996

**BUREAU OF
AIR REGULATION**

Dear Mr. Linero:

As a follow-up to our previous discussions and your review of the City of Tallahassee's Proposed Plan of Study and Air Quality Monitoring Protocol for Purdom Unit 8, we would like to confirm our meeting to discuss our air quality approach as outlined in that document.

DATE: September 25, 1996
TIME: 1:30 P.M.
PLACE: Department of Environmental Protection-Air Offices
1111 South Magnolia (Winn-Dixie Magnolia Courtyard)
Tallahassee, Florida 32301

Again, we would like to thank you for your time and consideration of this matter and we look forward to meeting with you on September 25th.

Sincerely,

Jennette Curtis
Environmental Administrator

891-8850

JC/ns

cc: Buck Oven, Department of Environmental
Rob McGarrah, City of Tallahassee
Karl Bauer, City of Tallahassee
Doug Fulle, Foster-Wheeler
Tom Williams, Raytheon

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cc: Cleve
Marty

**CITY OF TALLAHASSEE
PLAN OF STUDY MEETING
ISSUES BRAINSTORMING SUMMARY
SEPTEMBER 10, 1996**

ST. MARKS RIVER

- 22. (6) Barge traffic - current and future
- 25. (6) General health and well-being of lower St. Marks River and how relates to wildlife and fisheries habitat and population
- 1. (5) Minimum flows and levels in St. Marks River
- 3. (5) What happens if permitting process gets bogged down? Is there a back-up plan for City of St. Marks effluent disposal?
- 45. (4) Entrainment and impingement of biological resources in water intake - current vs. future (316B)
- 30. (3) Baseline water quality data for St. Marks River
- 37. (2) Past and future maintenance dredging schedules for canals on-site and changes/impacts
- 38. (1) Any emergency discharges?
- 49. (0) Impact of any new intake structure on recreational use of river

MANATEES

- 10. (6) Evaluation of manatee habitat impacts year-round
- 48. (3) Collection of Manatee sighting data in adjacent waters
- 2. (1) Manatee winter population impact
- 32. (0) Closure of discharge canal from boat traffic

AIR QUALITY

- 8. (6) Air impacts on Class I Air Quality Related Values
- 13. (6) Air quality impacts at St. Marks refuge and 17,700-acre wilderness area
- 4. (4) Air quality improvement over existing plant
- 27. (3) Past actual emissions vs. permitted emission limits
- 15. (2) Continuous low load operation on the turbine - air emissions under this condition
- 26. (2) Will it be .05% sulfur content in back-up fuel?
- 31. (2) Quantity of particulates in the emissions
- 14. (1) Applicability of "bubbling"
- 39. (1) Flame stability problems on some low NO_x burners
- 34. (0) Compliance by CEMS for NO_x
- 42. (0) Conditioning of turbine inlet air

LINEAR FACILITIES

- 19. (3) State highway, lands and right-of-way crossings during renovation of pipeline
- 5. (2) Land use and environmental impacts from corridors for associated facilities

- 50. (1) Will change in conductor require additional clearing or new structures?
- 46. (0) Current maintenance practices for the transmission line

TRAFFIC

- 6. (3) Trips generated during construction and operation by vehicle type
- 11. (3) Any roadway improvements planned for entrance to plant?
- 33. (1) Commercial deliveries planned?

HABITAT & IMPORTANT SPECIES

- 9. (3) General listed species impacts from plant construction, operation and linear facilities
- 16. (3) Baseline bio criteria monitoring data - environmental health indicators, e.g. Shannon Weaver diversity index
- 21. (2) Quantify wetland impact from construction of associated facilities
- 7. (1) Delineation of wetlands at plant site and along linear facility ROWs

DRAINAGE

- 12. (8) Impacts of flooding and impacts of hurricane
- 20. (1) Stormwater design, including retrofit of existing plant
- 41. (1) Turbidity control measures for plant construction and linear facility construction

LAND USE COMPATIBILITY

- 17. (4) Noise in dB's at night - want to see reduction
- 40. (1) Compliance with local land development regulations and consistency with local, regional, and state plans
- 47. (0) Aesthetic impacts now compared with future including the height of structures

WASTE MANAGEMENT

- 35. (2) Any waste products being transported out?
- 18. (1) Storage and disposal of waste

ECONOMIC IMPACT

- 23. (1) Will there always be shift work?

PUBLIC SERVICES AND FACILITIES

- 28. (3) What are proposed fire control and safety measures?
- 24. (1) Any increased need for fire protection?

AVIATION

- 29. (2) Any impact on aviation due to facility height?

FUEL HANDLING & STORAGE

- 36. (0) Back-up fuel delivery and storage
- 44. (0) Do safety measures for existing fuel storage meet current standards? Any increase in

fuel storage?

CULTURAL RESOURCES

43. (0) Impacts on archeological and historical sites

Note: Numbers in parentheses indicate the number of votes that issue received in the prioritization exercise.



CITY HALL
300 S. ADAMS ST.
TALLAHASSEE, FL
32301-1731
904/891-8100
TDD 1-800/955-8771

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JAMES R. ENGLISH
City Attorney
RICARDO FERNANDEZ
City Auditor

ap

September 10, 1996

RECEIVED
SEP 11 1996
BUREAU OF
AIR REGULATION

Mr. Dave Wergowske
National Forests in Alabama
U.S. Forest Service
2946 Chestnut Street
Montgomery, AL 36107-3010

Dear Mr. Wergowske:

Subject: Purdom Unit 8 Project
Proposed Plan of Study and Air Quality Modelling Protocol

Enclosed is the Proposed Plan of Study and Air Quality Modelling Protocol for the Purdom Unit 8 Project which we discussed by phone with you on July 26, 1996. We are seeking formal approval of the Air Quality Modelling Protocol from the Florida DEP and ask that you coordinate any comments you have on the document with them. We intend to seek a meeting with the DEP air quality personnel together with air quality specialists from the U. S. Fish & Wildlife Service and U. S. Forest Service during the week of September 23rd to discuss our proposed air quality impact assessment approach.

Should you have any questions, please call me at (904) 891-8850.

Sincerely,

Jennette Curtis

Jennette Curtis
Environmental Administrator

JC/ns

Enclosure

cc. Doug Fulle (Foster Wheeler), (w/o enclosure)
Andrew Colaninno (USFS), (w/o enclosure)
Karl Siderits (USFS), (w/o enclosure)
Buck Oven (DEP), (w/o enclosure)
Clair Fancy (DEP), (w/o enclosure)
Joe White (USFSWS), (w/o enclosure)
Rob McGarrah (COT), (w/o enclosure)



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City Attorney
RICARDO FERNANDEZ
City Auditor

September 10, 1996

Ms. Ellen Porter
U. S. Fish & Wildlife Service
Air Quality Branch
c/o National Park Service Air Resources Division
12795 West Alameda Parkway
Lakewood, CO 80225

Dear Ms. Porter:

Subject: Purdom Unit 8 Project
Proposed Plan of Study and Air Quality Modelling Protocol

Enclosed is the Proposed Plan of Study and Air Quality Modelling Protocol for the Purdom Unit 8 Project which we discussed with you and Ms. Silva by phone. We are seeking formal approval of the Air Quality Modelling Protocol from the Florida DEP and ask that you coordinate any comments you have on the document with them. We intend to seek a meeting with the DEP air quality personnel together with air quality specialists from the U. S. Fish & Wildlife Service and U. S. Forest Service during the week of September 23rd to discuss our proposed air quality impact assessment approach.

Should you have any questions, please call me at (904) 891-8850.

Sincerely,

Jennette Curtis
Environmental Administrator

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Rob McGarrah (COT), (w/o enclosure)

401 347-3059

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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MAR 12 1993

MAR 15 1993

AIR, RADIATION & TOXICS
OFFICE OF REGION III
AIR AND RADIATION

MEMORANDUM

EPA Region III

SUBJECT: Approval of the Use of NO_x CEMS as an Alternative Method to the Water-fuel Ratio Monitoring under NSPS Subpart GG

FROM: John B. Rasnic, Director *John Rasnic*
Stationary Source Compliance Division
Office of Air Quality Planning and Standards

TO: Karl Mangels, Chief
New York Compliance Section
Air Compliance Branch, Region II

In response to your January 12, 1993, memorandum to Linda Lay, SSCD investigated the feasibility of our approval of your request. You asked SSCD to approve a request from East Syracuse Generating Company to allow the use of the NO_x continuous emission monitoring system (CEMS) as an alternative monitoring method to the continuous water-fuel ratio monitoring method.

East Syracuse Generating Company is to commence development of a 100 MW natural gas-fired cogeneration combustion turbine facility in the village of East Syracuse, New York. The facility is allowed to use a limited amount of low sulfur distillate oil as a backup fuel. To control the emissions of NO_x, this turbine will use both water injection and selective catalytic reduction as required by the New York State Department of Environmental Conservation (NYSDEC). Since the NYSDEC permit conditions are more restrictive than the requirements of NSPS subpart GG, East Syracuse is asking for a waiver from the following monitoring requirements:

1. Fuel sulfur monitoring
2. Fuel nitrogen monitoring
3. Continuous water-fuel ratio monitoring for NO_x compliance.

You have already made determinations on the first two issues and asked SSCD to address only the third issue, use of NO_x CEMS, that is required by the State permit, instead of the water-fuel ratio monitoring method.

SSCD determined that the use of a NO_x CEMS can be allowed as an alternative monitoring method if the facility meets the following conditions:

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- Each turbine meets the emission limitation (STD) determined according to 40 CFR Part 60.332. The "Y" value for the applicable equation and supporting documentation should be provided by the applicant and the limitation for NO_x emissions from pipeline quality natural gas should be fixed by EPA assuming the "F" value equals 0. The emission limitation shall be expressed in ppmv, dry, corrected to 15 percent O₂.
- Each NO_x CEMS meets the applicable requirements of 40 CFR §60.13, Appendix B, and Appendix F for certifying, maintaining, operating and assuring quality of the system.
- Each NO_x CEMS must be capable of calculating NO_x emissions concentrations corrected to 15% O₂ and ISO conditions.
- Monitor data availability shall be no less than 95 percent on the quarterly basis.
- NO_x CEMS should provide 4 data points for each hour and calculate a 1-hour average.
- Each owner or operator of a NO_x CEMS shall submit an excess emissions (calculated according to the requirements of paragraph 60.13(h)) and monitoring systems performance report and/or a summary report form to the Administrator on a quarterly basis, if excess emissions are determined, or semiannually. The report shall be postmarked by the 30th day following the end of each reporting period. Written reports shall include information required in paragraphs 60.7(c) and 60.7(d). This report shall also contain the content of nitrogen in fuel oil for each reporting period when oil is fired and a clearly calculated corresponding emission limitation (STD).
- Recordkeeping requirements shall follow the requirements specified in 40 CFR §60.7.

In addition, to upgrade the EPA data, we recommend that the NO_x CEMS be used to demonstrate compliance with the emission limitation on a continuous basis and that the quarterly report include the NO_x mass emissions for the reported period as reported to the State.

If you have any questions, please call Zofia Kosin at 703-308-8733.

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1

cc: Air, Pesticides, and Toxics Management Division
Directors
Regions I and IV

Air and Waste Management Division Director
Region II


Air, Radiation, and Toxics Division Director
Region III

Air and Radiation Division Director
Region V

Air, Pesticides, and Toxics Division Director
Region VI

Air and Toxics Division Directors
Regions VII, VIII, IX, and X

**FOSTER WHEELER ENVIRONMENTAL CORPORATION
EXCEL 5.0 CALCULATION SHEET**

By: D. Graziani, P.E.
Date: 12/30/96
Ckd. By: D. Ghayal, P.E.
Date: 1/10/97
Rev. By: D. Graziani, P.E.
Date: 2/10/97
Rev. By: D. Fulle 
Date: 6/20/97

OFS No.: 1523.0005.0008
File: COTBACT.XLS
Sheet: SCR-BACT

Description: Incremental and total cost analysis for the SCR System. Cost factors and references listed. Capital costs estimate for the SCR was supplied by a vendor.

BACT ANALYSIS

CAPITAL COST FACTORS FOR SELECT CATALYTIC REDUCTION

OPTION 1 (3.5 ppmvd @ 15% O2 - Gas & 10 ppmvd @ 15% O2 - Oil Firing)

COST ITEM	COST FACTOR	REFERENCE	COST (\$1997)
DIRECT COSTS (DC)			
PURCHASED EQUIPMENT COSTS (PEC)			
SCR & AUXILIARY EQUIPMENT	AS ESTIMATED, A	VENDOR QUOTE	\$1,676,000.00
INSTRUMENTATION	0.05 X A	(EPA, 1990d)	\$83,800.00
STATE SALES TAXES	0.06 X A	State Sales Tax	\$100,560.00
FREIGHT	0.05 X A	(EPA, 1990d)	\$83,800.00
PEC SUBTOTAL	1.16 X A = B		\$1,944,160.00
DIRECT INSTALLATION COSTS (DIC)			
FOUNDATIONS & SUPPORTS	0.08 X B	(ULRICH, 1984)	\$155,532.80
LABOR	0.14 X B	(EPA, 1990d)	\$272,182.40
ELECTRICAL	0.04 X B	(EPA, 1990d)	\$77,766.40
PIPING	N/A	VENDOR QUOTE	-
INSULATION	N/A	VENDOR QUOTE	-
PAINTING	0.01 X B	(EPA, 1990d)	\$19,441.60
DIC SUBTOTAL	0.27 X B	(EPA, 1990d)	\$524,923.20
SITE PREPARATION	N/A	-	-
BUILDINGS	N/A	-	-
TOTAL DC	1.27 X B	-	\$2,469,083.20
INDIRECT COSTS (IDC)			
ENGINEERING	0.10 X B	(EPA, 1990d)	\$194,416.00
CONSTRUCTION OVERHEAD	0.05 X B	(EPA, 1990d)	\$97,208.00
CONTRACTOR FEES	0.10 X B	(EPA, 1990d)	\$194,416.00
CONTINGENCIES	0.03 X B	(EPA, 1990d)	\$58,324.80
START-UP	0.02 X B	(EPA, 1990d)	\$38,883.20
PERFORMANCE TESTING	0.01 X B	(EPA, 1990d)	\$19,441.60
TOTAL IDC	0.31 X B	-	\$602,689.60
TOTAL CAPITAL INVESTMENT (TCI)	1.58 X B		\$3,071,772.80

**FOSTER WHEELER ENVIRONMENTAL CORPORATION
EXCEL 5.0 CALCULATION SHEET**

By: D. Graziani, P.E
Date: 12/30/96
Ckd. By: D. Ghayal, P.E.
Date: 1/10/97
Rev. By: D. Graziani, P.E.
Date: 2/10/97
Rev. By: D. Fulle
Date: 6/20/97

OFS No.: 1523.0005.0008
File: COTBACT.XLS
Sheet: SCR-BACT

OPERATING COST FACTORS FOR SELECT CATALYTIC REDUCTION

COST DATA

CHEMICAL ENGINEERING PLANT COST INDEX

1990 357.6
1993 359.2
Sept. '96 383.9

CAPITAL RECOVERY FACTOR (CRF) @i=7.25%,n=20: 0.0962
0.0725
20

DIRECT ANNUAL COSTS, \$/YR

	FACTOR	REFERENCE	1997 COSTS, \$/YR
OPERATING LABOR	\$27.82/HR @ 1HR/12HR-SHIFT	(COT & EPA 1993b)	\$20,309
SUPERVISORY LABOR	15 % OF OPERATING LABOR	(EPA,1993b)	\$3,046
MAINTENANCE LABOR AND MATERIALS	1,250 (MW) + 25,800	(EPA,1993b)	\$241,327
CATALYST REPLACEMENT (TCR)	N/A	Vendor Estimate	\$350,000
CATALYST DISPOSAL	\$15/CF	(EPA,1993b)	\$68,923
AQUEOUS AMMONIA	\$360/TON	(EPA,1993b)	\$61,243
DILUTION SYSTEM	N/A	(EPA,1993b)	-
ELECTRICITY	N/A	(EPA,1993b)	-
PERFORMANCE LOSS	0.50%	(EPA,1993b)	\$312,613
BLOWER	N/A	(EPA,1993b)	-
PRODUCTION LOSS	N/A	(EPA,1993b)	-
			\$1,057,461

INDIRECT ANNUAL COSTS, \$/YR

OVERHEAD	60% OF ALL LABOR MAIN. COSTS	(EPA,1990d)	\$158,809
INSURANCE & ADMINISTRATION	2.5% OF TCI	(EPA,1990d)	\$76,794
CAPITAL RECOVERY	CRF X (TCI - I CR)	N/A	\$225,612
			\$461,215

TOTAL ANNUAL COSTS, \$/YR

\$1,518,676

TOTAL NET NO_x REDUCTIONS (TPY)

Oil Firing	61
Gas Firing	226
Total	288

INCREMENTAL COST EFFECTIVENESS, \$/TON

\$5,281

BACT Emission Estimates

Ambient Temp.(F)	59			
Load	100%			
Natural Gas Firing	8260			
Fuel Oil Firing	500			\$5,281
		Base		
NOx Limits	ppmvd	lb/hr	TPY	
Natural Gas	12	77.3	319.39	
Distillate Oil	42	322	80.50	
Total			399.89	0.00
		Option 1		
NOx Limits	ppmvd	lb/hr	TPY	
Natural Gas	3.5	22.6	93.15	
Distillate Oil	10	77	19.17	
Total			112.32	
Net Reduction			287.57	



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ROBERT B. INZER
City Treasurer-Clerk

JAMES R. ENGLISH
City Attorney
RICARDO FERNANDEZ
City Auditor

September 10, 1996

Mr. Hamilton S. Oven, Jr.
Siting Coordination Office
Department of Environmental Protection
2600 Blair Stone Road MS480
Tallahassee, FL 32399

Dear Mr. Oven:

Subject: Purdom Unit 8 Project
Proposed Plan of Study and Air Quality Modelling Protocol

Thank you for attending our Plan of Study meeting. Enclosed is the Proposed Plan of Study and Air Quality Modelling Protocol for the Purdom Unit 8 Project which we have been discussing. Please review the document as quickly as possible, as we would like to meet with individual agencies to obtain comments during the weeks of September 16th and 23rd.

As you know, we are not seeking a binding written agreement on the Plan of Study; however, we are interested in obtaining informal agency concurrence on our baseline and impact analyses plans. We are seeking formal approval of the Air Quality Modelling Protocol from the DEP and ask that you coordinate its review. We intend to seek a meeting with the DEP air quality personnel together with air quality specialists from the U. S. Fish & Wildlife Service and U. S. Forest Service during the week of September 23rd to discuss our proposed air quality impact assessment approach.

Should you have any questions, please call me at (904) 891-8850.

Sincerely,

Jennette Curtis
Environmental Administrator

JC/ns

Enclosure

cc. Rob McGarrah (COT)
Doug Fulle (Foster Wheeler)
Department of Transportation
Department of Community Affairs
Apalachee Regional Planning Council
U. S. Fish & Wildlife Service
Wakulla County
Department of State

Northwest Florida Water Management District
Game and Freshwater Fish Commission
U. S. Forest Service
City of St. Marks
Leon County

CITY OF TALLAHASSEE

PROPOSED PLAN OF STUDY AND AIR QUALITY MODELLING PROTOCOL

PURDOM UNIT 8

September 10, 1996

**Foster Wheeler Environmental Corporation
in association with
Raytheon Engineers & Constructors and Moore/Bowers**



Purdom Unit 8

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Purdom Unit 8

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Purdom Unit 8

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1.0 THE PURDOM UNIT 8 PROJECT

1.1 INTRODUCTION

The City of Tallahassee has initiated engineering and environmental studies for the purpose of preparing the necessary permit applications for a proposed new unit (Unit 8) at its existing Purdom Generating Station in St. Marks, Wakulla County, Florida. The location of the Purdom Generating Station is depicted in Figure 1-1.

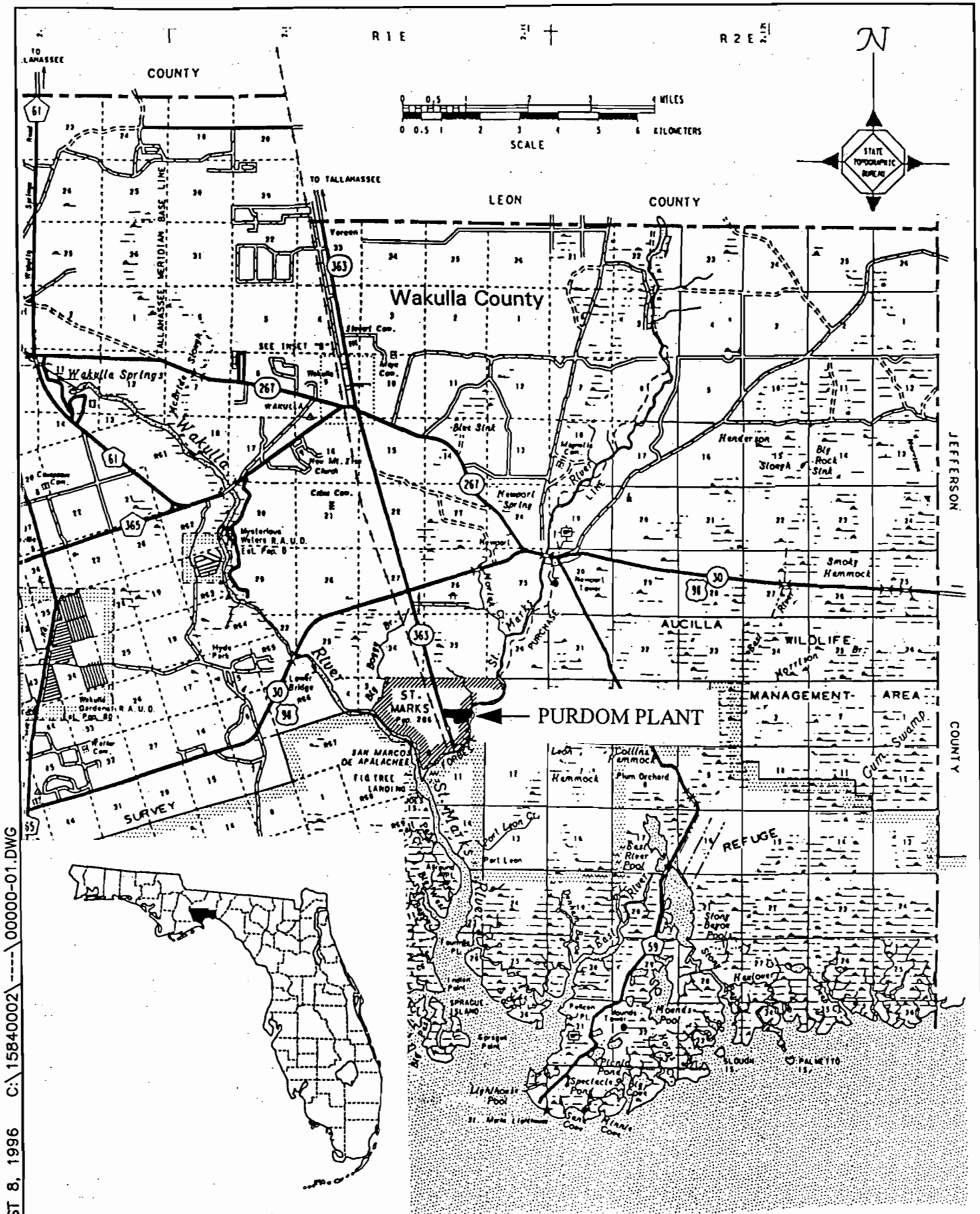
The primary purposes of this Plan of Study are to provide preliminary information about the project (which includes the early retirement of Purdom Units 5 and 6) and to initiate discussions between the City of Tallahassee as the applicant, the regulatory agencies, and other interested parties. The format deliberately highlights the study objectives that are expected to be of greatest interest for this particular project in order to focus attention on those key aspects of the project at an early stage of the permit application process. The intent is to encourage a productive, collaborative "scoping" process with regulatory agencies, the local community, and environmental and other interest groups. In addition to circulating the Plan of Study, the City of Tallahassee will sponsor several public meetings to inform citizens about the project and seek public input.

The Plan of Study is also intended to clarify the proposed approach to preparation of the Department of Environmental Protection's (DEP's) permit application for power plants under the Florida Electrical Power Plant Siting Act, known as a Site Certification Application (SCA). In general, the SCA for the Purdom Unit 8 project will follow the prescribed format and include the data and analysis called for in the Instruction Guide for Certification Application [DEP Form 62-1.211(1)]. However, as with every project, there are unique aspects of the setting and proposed project design that suggest a slightly modified approach on certain topics required to be addressed in the application. This Plan of Study identifies those unique aspects of the project and describes the proposed approach to application preparation. Appendix A to this Plan of Study provides a proposed outline for the application and cross-references to the sections of this plan in which the various SCA sections are discussed. The City of Tallahassee intends to apply for certification of the entire Purdom site, based on its existing permits, pursuant to the optional procedure available under Section 403.5175, Florida Statutes.

1.2 REASON FOR THE PROJECT

The City of Tallahassee Electric Department's mission is "to provide high quality, reliable, competitively priced electric services within [its] retail and wholesale market areas." The Purdom Unit 8 Project is being proposed for three reasons:

- To meet the electric generating capacity needs of the City of Tallahassee's customers in the year 2000 and beyond;
- To improve the efficiency of the City of Tallahassee's electric generating system through the introduction of new, highly efficient electric generating technology; and



PLOT DATE AUGUST 8, 1996 C:\15840002\00000-01.DWG



GENERAL SITE LOCATION MAP
CITY OF TALLAHASSEE - PURDOM UNIT 8 PROJECT
ST MARKS, FLORIDA

Figure
1-1

Purdom Unit 8

- To lower the cost of electric production within the City of Tallahassee's system in an effort to maintain competitive electric rates while preparing to meet the challenge of deregulation within the electric utility industry.

1.2.1 Capacity Need

Demand for electricity within the City of Tallahassee's electric service area is growing at a rate of slightly less than two percent per year. In addition, the City of Tallahassee's contract with Southern Company, which presently provides about 20 percent of the City's capacity, expires in the year 2000. So there is need to both keep up with growing demand and to replace capacity presently being supplied under a purchased power agreement that will expire in the next several years.

Energy conservation programs are helpful to reduce the need for additional electricity supplies, but the savings are not enough to allow existing facilities to keep up with demand. The use of electricity for advanced communications and other technology in the workplace and home is growing. Load management and conservation programs merely slow the rate of growth rather than eliminate it. Thus, new generating capacity is needed.

Another benefit of building Unit 8, while retiring Units 5 and 6 at Purdom, is to maintain and enhance the City of Tallahassee electric system's stability. By locating a substantial generating capability at Purdom, the City of Tallahassee is also able to support the Florida Power Corporation and Talquin Electric Cooperative systems with which the City of Tallahassee is interconnected. The result is a more reliable supply of electricity throughout the region.

1.2.2 Improved Efficiency

Some of the City of Tallahassee's generating equipment is approaching 40 years of operating life. In recent years, electric generating technology has made great strides in terms of efficiency (i.e., in the number of megawatts (MW) of electricity produced per unit of fuel consumed) and reduced environmental impact. For example, combined cycle technology, which is the technology proposed for the Purdom Unit 8 Project, captures waste heat from the initial fuel combustion to make steam and produce additional electricity. Also, currently available technology generates fewer air emissions per MW of electricity produced than older units. Thus, the newer technology is beneficial in terms of economics, conservation of energy resources, and reduced environmental impact.

Since the City of Tallahassee is growing and there is a need to add capacity to meet demand, there is an opportunity to upgrade equipment in the system and to improve the system's overall efficiency. The City of Tallahassee will also be retiring some outdated equipment during the next few years and will use this new efficient unit to replace that capacity.

1.2.3 Lowering Costs and Enhancing Competitive Position

The City of Tallahassee currently depends on its electric utility for revenues to support a broad range of municipal services. Thus, the City of Tallahassee's electric utility contributes in a significant way to residents' quality of life. To remain competitive (i.e., to retain its largest

electric customers, and maintain this important revenue stream) the City of Tallahassee must address trends in the industry that are forcing electric rates down.

In the last decade, electric utilities in Florida have begun to experience competition in their industry. The Florida Public Service Commission, the U.S. Congress, and the Federal Energy Regulatory Commission have taken steps to encourage this competition. Other industries, such as the telephone industry and the airlines, have been deregulated, resulting in fierce competition in industries that were previously operated as regulated monopolies.

The City of Tallahassee is preparing to meet this challenge by taking steps to make its electric rates more competitive. Because of the efficiency of the proposed Purdom Unit 8 Project, system production costs will be reduced, allowing the possibility of a rate decrease or, at least, reducing the likelihood of future rate increases. Competitive electric rates will mean that the City of Tallahassee's largest electrical customers will not be tempted to turn to other electric suppliers to keep their own operating costs low.

1.3 PROJECT SELECTION PROCESS

1.3.1 Integrated Resource Planning

In 1994, the Tallahassee Electric Department began a review of customer electricity requirements, fuel price forecasts, and resulting resource needs. The City of Tallahassee's system planning process utilized Integrated Resource Planning (IRP) modelling and procedures to ensure that the best choices in resources, considering both new generation and energy conservation, were blended to provide the least cost plan for meeting the customers' future needs. During the initial stages of this planning work, a citizens committee was utilized to identify the types of conservation programs and generation alternatives that should be considered and the criteria that should be utilized in framing the final recommendations for selection by the City Commission. The results of the planning process showed that:

- There was a need for additional power supplies beginning in 2000;
- Recent advances in available electric generating technology provided an opportunity for the City of Tallahassee's customers to benefit by installing a new combined cycle unit and retiring older, less efficient units earlier than scheduled; and
- The appropriate size of the new unit for the City of Tallahassee's utility system would be 250 MW.

1.3.2 Competitive Bidding Process

Following the identification of the Year 2000 need, the City of Tallahassee voluntarily embarked on a competitive solicitation process by issuing a Request for Proposals (RFP) to secure the additional power supply resources. This process allowed independent developers and other electric utilities to provide proposals for meeting the City of Tallahassee's need. In addition, the City of Tallahassee developed two "self-build" alternatives utilizing a team of City of Tallahassee electric employees and outside consulting engineers with expertise in power plant design, permitting, construction, and operation. The self-build alternatives included fixed price

Purdom Unit 8

“turn-key” construction proposals and fixed price natural gas pricing for the 2000 - 2020 operating period.

Evaluation of the external and “self-build” alternatives was completed utilizing the same IRP modelling techniques that identified the need. In addition to the proposals received by the City of Tallahassee in the RFP process, other generation options (purchased power, alternative generation options) were included in the IRP evaluation. The evaluation process also included sensitivity and risk analysis to determine how changes in assumptions about load growth, fuel prices, economic growth, retail wheeling, inflation, interest rates and so on might change the outcome of the evaluation.

The review and evaluation of the proposals and alternatives included participation by three different groups:

- A Technical Evaluation Committee consisting of three senior staff members from the Electric Department, one from the Treasurer-Clerk’s office, and one from the Water & Sewer Department. This team was supported by Stone & Webster Management Consultants, Inc., who performed the modelling, and other outside legal and technical experts.
- A City Management Team consisting of the Assistant City Manager for Utilities, the Electric Department General Manager, and the Electric Planning Administrator; and
- An Oversight Committee formed to give feedback and advice to the Technical Evaluation Committee. This committee consisted of representatives of the City of Tallahassee’s two largest customers, outside industry experts, an Assistant City Manager, the Treasurer-Clerk, and members that represented business, environmental and neighborhood interests.

In addition, the evaluation process was reviewed by R. W. Beck, Inc., an outside consulting engineering firm, and the City Auditor.

The review and evaluation concluded that the power supply plan which included one of the City of Tallahassee’s “self-build” alternatives, the Purdom Unit 8 Project, was the least cost plan to meet the City of Tallahassee’s energy needs for the year 2000 and beyond. The review conducted by R. W. Beck and the City Auditor found the process and evaluation to be fair. On July 10, 1996, the City Commission concurred with the recommendation of the evaluation committee and authorized staff to move forward with the Purdom Unit 8 Project.

Based on a comparison with the outside proposals offered in response to the RFP, the key competitive advantages of the Purdom Unit 8 Project were:

- Utilization of an existing site already owned by the City of Tallahassee and properly designated on the City of St. Marks’ comprehensive plan and zoning map;
- The degree of detail in the City of Tallahassee’s alternative, which enabled a more definitive assessment of potential environmental impact and risk to the immediate environment around the proposed site;
- The availability of tax exempt financing;

Purdom Unit 8

- A 20-year net present value (NPV) cost that was approximately 16 percent lower than the next lowest cost proposal;
- The opportunity to optimize staffing and share common facilities as a result of utilizing an existing power plant site;
- Utilization of a site already connected to the City of Tallahassee's power grid so that no new transmission facilities needed to be constructed; and
- Cost advantages associated with not having to pay profit normally included in any proposal made by a taxable entity.

1.4 PROJECT LICENSING PROCESS

1.4.1 "One-Stop" Permitting under the Power Plant Siting Act

The Purdom Unit 8 Project will be permitted under the Florida Electrical Power Plant Siting Act (PPSA) process. Considered a "one-stop" permitting process, the PPSA actually provides for a coordinated review of a single permit application (the SCA), which results in one consolidated permit, known as the Site Certification. The Site Certification will address the proposed Unit 8, the remaining existing units, and the entire existing site. All local, regional and state reviews and permits are covered by the Site Certification. Federal permits and reviews are handled separately but are coordinated with the PPSA process, and rely on the same information.

1.4.2 Certification Hearing

After reviewing the City of Tallahassee's application, each of the local, regional and state agencies will file a report with the DEP. As the coordinator of the review process, the DEP will incorporate the comments and recommendations of all the other agencies and make a recommendation for approval or denial of site certification. After receiving the other agencies' reports, the DEP will prepare one consolidated report, incorporating all the agencies' findings and recommendations plus the findings and recommendations of its own staff.

Following the issuance of the DEP report, a certification hearing will be held before an administrative law judge appointed by the Florida Division of Administrative Hearings. Public comment will be taken during the certification hearing at a time specifically set aside for the public to speak. After the judge hears the testimony and evidence, he or she will prepare a recommended order, outlining "findings of fact" and "conclusions of law" and recommending approval or denial of the project. Typically, in recommending approval, the judge will also recommend an extensive list of conditions that have been proposed by the various parties to the proceeding. This recommendation will be forwarded to the Governor and Cabinet for final action.

A separate hearing on the air quality Prevention of Significant Deterioration (PSD)/Title V Application may be held, if requested. However, it is likely that such a hearing would be scheduled to coincide with the certification hearing.

1.4.3 Governor and Cabinet Approval

The final decision on the site certification will be made by the Governor and Cabinet at one of their regular, twice monthly meetings. The applicant and the public will have the opportunity to speak briefly before the Governor and Cabinet take action on the site certification.

The PPSA is *procedurally* preemptive. That is, it preempts the permitting procedures of the individual agencies and local government but requires compliance with their substantive requirements. For example, the project will not have to follow the procedures of the local site plan review process, but a demonstration of compliance with the adopted Land Development Code of the City of St. Marks will have to be made through the PPSA process. If any variances from the substantive requirements of the agencies are sought by the applicant, they must be approved by the Governor and Cabinet.

DEP will likely take final action on the PSD/Title V permit about 30 days after the decision by the Governor and Cabinet.

1.4.4 Licensing Schedule

As of late July 1996, the Purdom Unit 8 Project team had begun the studies necessary for preparation of the SCA. The following are a few key milestones of the licensing process with their expected dates.

Preparation of the SCA	July 1996 through February 1997
Application Filing	February 1997
Application Sufficiency Review	February 1997 through June 1997
Agency Review of Application	June 1997 through October 1997
Filing of Agency Reports	September 1997
Filing of DEP's Report	October 1997
Certification Hearing	January 1998
Filing of Hearing Officer's Recommended Order	March 1998
Decision by Governor and Cabinet	May 1998
DEP Approval of PSD/Title V Permits	June 1998

1.4.5 Public Participation

The PPSA provides for public notices in the form of large newspaper ads of the application filing and the certification hearing. As mentioned above, public comment is taken during the certification hearing, and the public is allowed to speak briefly before the Governor and Cabinet take action on the final site certification.

In addition to the formal mechanisms for public notice and public participation provided in the PPSA, the City of Tallahassee welcomes public input and has developed a special program to meet with citizens, share information about the project, and listen to citizens' views. Public meetings on the project will be held in Tallahassee and St. Marks during September 1996 to

Purdom Unit 8

present information on the progress and provide citizens the opportunity to ask questions and express their views.

A question and answer column will be included with customers' bills and a project newsletter will be sent periodically to persons on the project mailing list. The City of Tallahassee would welcome the opportunity to make a brief presentation to civic, neighborhood, and business groups on the project and is continuing to meet with local government and agency representatives as requested or as needed to keep them informed.

A voice mailbox, e-mail address, and an Internet World Wide Web page have been established for citizen inquiries about the project. For questions or comments contact:

- Voice Mail: (904) 891-5585
- E-mail: purdom8@sc.ci.tlh.fl.us
- Web Page: <http://www.state.fl.us/citytlh/purdom8/>
- Mailing Address: Mr. Rob McGarrah
2602 Jackson Bluff Road
Tallahassee, FL 32304

1.5 PROJECT DESCRIPTION

1.5.1 Existing Purdom Plant and Site

The Purdom Generating Station is located at 667 Leon Drive (State Road 363), St. Marks, Florida.

1.5.1.1 *Plant History and Operation*

The station has nine generating units, consisting of seven gas/No. 6 fuel oil-fired steam electric units (numbered 1 through 7) and two gas/diesel fuel oil-fired gas turbine units (numbered GT 1 and GT 2). Units 1 through 4 are rated at 7.5 MW (nominal, the output varies slightly with weather and fuel conditions) each. They were placed in operation between 1952 and 1954 and are now being retired. Units 5 and 6 are rated at 22 MW (nominal) and were placed in operation in 1958 and 1961, respectively. The gas turbines are each rated at 12.5 MW (nominal) and were installed in 1961 (GT 1) and 1966 (GT 2). Unit 7, rated at 44 MW (nominal), became operational in June of 1966.

The units were all installed with once-through cooling systems using water from the St. Marks River and have operated under a National Pollutant Discharge Elimination System (NPDES) wastewater discharge permit since the inception of the NPDES permitting program and a state-issued Industrial Wastewater (IWW) permit. An intake flume and discharge canal were constructed along with Units 1 through 4. The St. Marks River was dredged and a fuel oil barge unloading terminal was installed at the same time. A second discharge canal was installed with Unit 6 and an intake canal was installed with Unit 7. Ground water from on-site or near-site wells has been used as the source of boiler water makeup. Units 1 through 4 are now being retired, while Units 5 through 7, GT 1 and GT 2 are presently used for meeting peak load requirements.

1.5.1.2 Existing Plant Description and Setting

The existing plant consists of the retired steam electric units 1-4, the active steam electric units 5-7 and their associated facilities, and the GT Units 1 and 2. Figure 1-2 depicts the locations of the existing units. The steam electric units, which can fire either natural gas or number 6 fuel oil, are located south of the intake canal. Units 5 and 6 share a common stack and Unit 7 has its own 180-foot stack. A new, small auxiliary boiler is presently in the process of being permitted. The two discharge canals are located south of these units with the main oil storage area between them. The oil barge unloading facility is located on the east side of the main oil storage area. The plant access road runs east-west and separates the generating units from the large oil storage area, which is used to store number 6 fuel oil for the steam electric units.

The wastewater treatment system (for low volume wastewater and metal cleaning wastes) includes two wastewater treatment ponds and lies west of the generating units and north of the plant access road. The plant switchyard lies to the west of the wastewater treatment ponds. The plant warehouse is south of the wastewater treatment ponds and south of the plant access road. West of the warehouse is an elevated water tower, presently used to store well water prior to its treatment for use as boiler makeup. A diesel oil tank for the gas turbines is west of the water tank. The gas turbines which can fire either natural gas or diesel (number 2 fuel) oil, are enclosed in a building west of the diesel oil tank and south of the plant access road.

The Purdom Station switchyard is scheduled to be refurbished in the next several years. Construction on the refurbishment is scheduled to be completed no later than the summer of 1999. This work was planned independently of the Unit 8 installation and is intended to replace obsolete equipment and upgrade the switchyard design and functionality.

1.5.2 Proposed Unit 8

The proposed Unit 8, the location of which is also depicted in Figure 1-2, consists of a combined cycle unit rated at a nominal 250 MW. The combined cycle unit includes an advanced combustion turbine (a device similar to a jet aircraft engine) that turns an electrical generator, a waste heat recovery steam generator (which uses the hot exhaust gases from the combustion turbine to make steam), and a steam turbine which turns another electrical generator (see Figure 1-3). The combined cycle configuration is the most efficient type of fossil-fueled power plant currently available. This means that the largest amount of power can be generated from the smallest amount of fuel, and a correspondingly smaller amount of air pollutants will be emitted for the amount of power generated.

Chapter 3.0 of the SCA will contain a detailed description of the proposed new combined cycle unit and ancillary facilities.

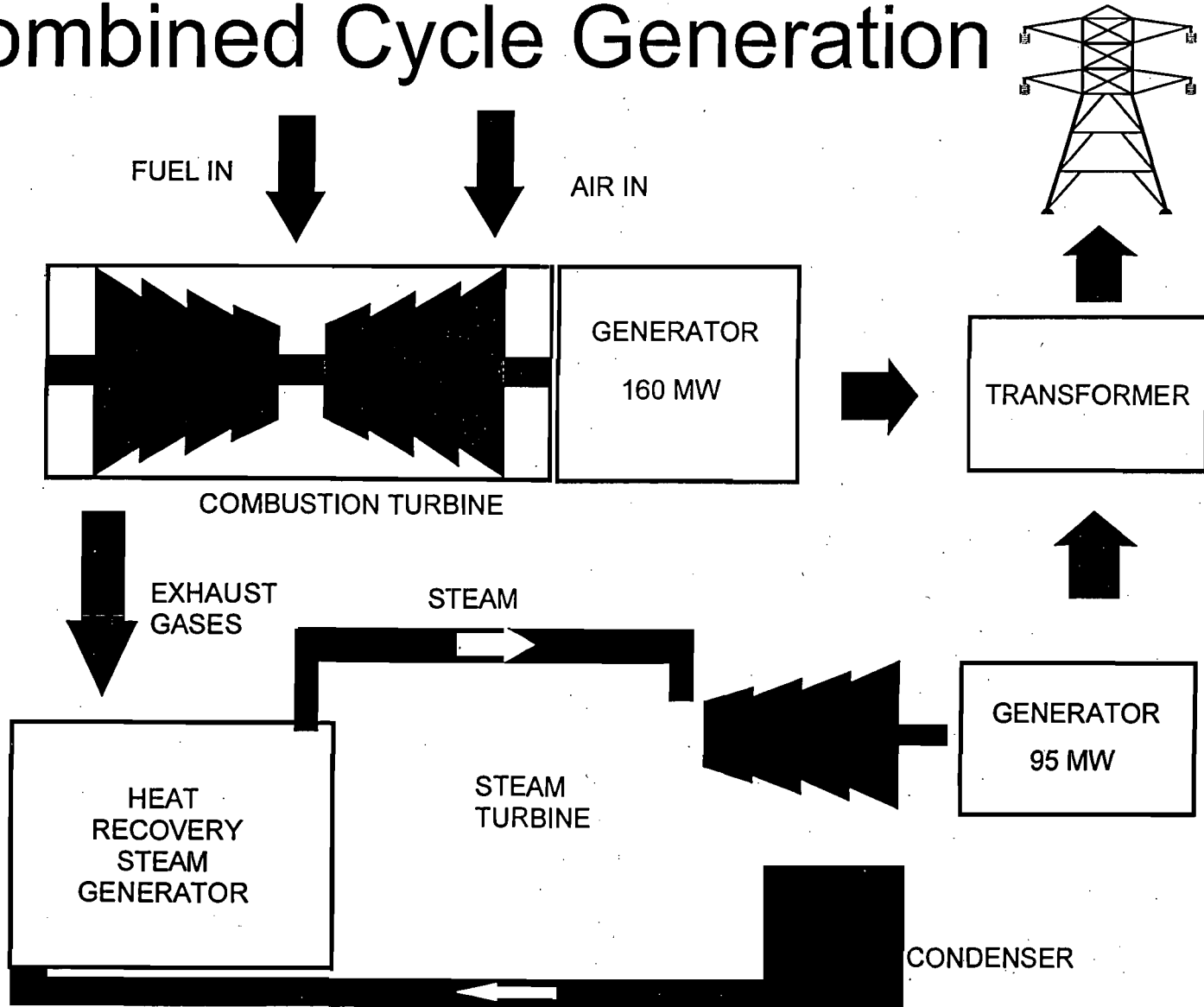
1.5.2.1 Design Philosophy

The proposed project design reflects an appreciation for the environment in Wakulla County and attempts to protect that environment while providing for the growing electricity needs of the Tallahassee area. Commitments incorporated into the preliminary design include special protections for air quality, water resources and habitat, taking into account the Purdom Station's proximity to the St. Marks National Wildlife Refuge and its location along the St. Marks River.

Purdom Unit 8

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Combined Cycle Generation



**FOSTER WHEELER
ENVIRONMENTAL
CORPORATION**

COMBINED CYCLE PLANT GRAPHIC

CITY OF TALLAHASSEE - PURDOM UNIT 8 PROJECT
ST MARKS, FLORIDA

Figure

1-3

Purdom Unit 8

For example, through the selection of a clean fuel, the installation of advanced combined cycle technology, and the retirement of older units at the Purdom Generating Station, increases in air emissions will be minimized even though generating capacity at the station will increase by about 200 percent. Water use will be minimized through water recycling in the zero discharge system and reuse of treated wastewater, both from the City of St. Marks' sewage treatment plant and the Purdom Station's own waste streams. The zero discharge system will also eliminate the need for discharges to the St. Marks River from the new power plant, the chemical waste treatment system of the existing plant, or the City of St. Marks' sewage treatment plant. Wetland impacts have been avoided through careful site layout, and aesthetics along the St. Marks River shoreline will be improved through landscaping in accordance with the City of St. Marks land development regulations and the removal of the outdoor portions of Units 1 through 4.

Existing infrastructure will be used to connect the new unit to the City of Tallahassee electric grid. Only the conductors on the existing transmission lines between the Purdom Station and Tallahassee will have to be replaced. Similarly, the Purdom Station is presently served by an existing Florida Gas Transmission pipeline. That pipe will be enlarged to accommodate fuel delivery for the new unit. Transport of the City of St. Marks treated effluent from the treatment plant to the Purdom Station will be via a new pipeline, less than a mile in length, expected to be installed along City streets. Oil storage at Purdom Generating Station will be reduced due to the retirement of Units 5 and 6.

The following paragraphs provide some additional detail on the project's key design features.

1.5.2.2 Air Quality

The proposed Unit 8 will burn clean natural gas as the primary fuel, and will burn only low sulfur fuel oil when natural gas is not available or not economical. The installation of the new combined cycle power plant will be accompanied by the retirement of Units 5 and 6, the oldest and least efficient steam units in the City of Tallahassee's system. Additionally, the City of Tallahassee expects to keep the annual emissions of sulfur dioxide (SO₂) and oxides of nitrogen (NO_x) from Unit 7, Unit 8 and the auxiliary boiler at or below recent levels from Units 5, 6 and 7, even though the plant capacity will nearly triple.

Best available control technology (BACT) is a concept created by the Environmental Protection Agency (EPA) and adopted by DEP. It was conceived to make sure that new units incorporated any technological advances that would reduce air pollutant emissions if they are environmentally and economically reasonable. The proposed Unit 8 is expected to have emission rates of air pollutants that are BACT.

1.5.2.3 Water Use

Condenser cooling for the steam turbine is provided by a closed cycle mechanical draft cooling tower. This closed cycle cooling system is a zero discharge system because the water that would traditionally be discharged (or "blown down") to remove dissolved solids from the cooling tower water will instead be treated and recycled. Only the relatively small volume of dissolved solids, in solidified form, will be disposed of by beneficial reuse or at an appropriately licensed site. The

Purdom Unit 8

recycled water will be used for boiler makeup, allowing the retirement of the present well system.

The primary source of makeup to the cooling tower will be surface water from the St. Marks River. This water will be withdrawn using the existing Unit 7 intake structure, eliminating the need for any construction within the river. Additional makeup water sources will include the wastewater discharge (OSN 005 and 006, see Section 1.5.3) from the existing steam electric units, the effluent from the City of St. Marks sewage treatment plant, and any recycled water from the treatment of cooling tower blowdown in excess of the need for boiler makeup.

Retirement of Purdom Units 5 and 6 in conjunction with the installation of the proposed Unit 8 will reduce the volume of the once-through cooling water withdrawal from the river, and subsequent thermal (heated water) discharge, from about 90,000 gpm to about 42,000 gpm.

1.5.2.4 Site Design

Unit 8 is proposed to be installed on the west side of the westernmost discharge canal, south of the plant access road (Figure 1-2). The combustion turbine/heat recovery steam generator and the combustion turbine-generator will be oriented north-south adjacent to the canal and the steam turbine-generator and other equipment will be adjacent to the west. The cooling tower will be west of the steam turbine-generator. The zero discharge wastewater treatment system will be just north of the access road. A stormwater retention swale will be added to the southwest of the new unit to percolate as much stormwater as possible into the ground water and to release the remainder as a sheet flow to the southwest, as it presently flows. Other storm water will use the existing storm water outfalls.

The combustion turbine/heat recovery steam generator will utilize a stack (chimney) that meets state requirements for Good Engineering Practice and it will be lighted and marked in accordance with Federal Aviation Administration (FAA) requirements.

The proposed unit will utilize the existing natural gas pipeline (after it is upgraded) for fuel delivery, and will similarly transmit the new power over the existing transmission lines (after they are reconducted). The existing diesel oil storage tank near the gas turbines will be used for the storage of backup fuel. One of the large number 6 fuel oil storage tanks will be converted to be a wastewater storage tank to facilitate recycling all of the plant's wastewaters. This oil storage tank will be closed in accordance with the procedures of Florida Administrative Code 62-762 prior to being converted to be a wastewater storage tank.

1.5.2.5 Local Infrastructure

The existing station is connected to the City of St. Marks' potable water system and sewage collection and treatment system. These connections will be kept with the addition of Unit 8. Because of the retirement of Units 5 and 6, fewer personnel will be required to operate the station; therefore, the existing water and sewer service will be adequate. Similarly, the existing plant access road and access to Leon Drive (State Road 363) are expected to be adequate.

A new pumping station and pipeline will be installed to deliver the effluent from the City of St. Marks' sewage treatment plant to the Purdom Station for reuse. The pipeline will follow city rights-of-way, and will be located to avoid wetlands.

1.5.3 Current Plant Permits and Emissions

The Purdom Station currently operates under three DEP air permits. Permit No. A065-24827 establishes operating, testing, recordkeeping, and reporting requirements for Gas Turbines 1 and 2, and limits maximum annual hours of operation for each turbine. This permit does not establish any specific limitations on allowable emission rates. Although Boilers 1 through 4 are in the process of being retired, their operation had been authorized under Permit No. A065-242828 which had not yet been surrendered. However, since these units were not included in the recently filed Title V Application for the Purdom Station, their operation is no longer permitted. Permit No. A065-242831 establishes operating, testing, recordkeeping and reporting requirements for Boilers 5, 6 and 7; establishes allowable emission rates for PM and SO₂; and provides for continuous operation of the boilers. Particulate matter is not to exceed 0.1 lb/mmBtu during normal operation and 0.3 lb/mmBtu during certain operating conditions when firing fuel oil. No PM limit applies to the firing of natural gas. The maximum allowable emission rate for SO₂ is 1.87 lb/mmBtu. The Title V Operating Permit Application, submitted in June 1996, requests an SO₂ emission limit of 1.3 lb/mmBtu for Units 5 and 6.

Table 1-1 presents the permitted (allowable) emission rates in tons per year for Boilers 5 through 7 in accordance with the PM and SO₂ limitations contained in the respective operating permits. This table also presents past actual annual emissions of PM, SO₂, NO_x, carbon monoxide (CO), volatile organic compounds (VOC), and lead (Pb), which are known as the "criteria" and "ozone precursor" pollutants, as well as the other pollutants covered by the PSD regulations (Rule 17-212.400 F.A.C.). The table includes emissions generated by the three boilers based on actual operation and fuel usage data averaged over the last two years. Emissions generated by the two combustion turbines (GT1 and GT2) are not included as these emissions are not expected to change in any way as a result of the Unit 8 Project.

The Purdom Plant currently operates under NPDES Permit Number FL0025526 and Industrial Waste Water (IWW) permit number IO65-188446. Although these permits were due to expire, they have been indefinitely extended by the timely and sufficient submittal of an application for a new NPDES permit. Discharges are permitted from four outfalls (designated Outfall Serial Numbers or OSN 001, 002, 005 and 006). OSN 001 includes once-through cooling water and auxiliary equipment cooling water from Units 1-5 discharged to the St. Marks River via the easternmost discharge canal. (Note that Units 1-4 are in cold standby mode and in the process of being retired.) OSN 002 includes once-through cooling water and auxiliary equipment cooling water from Units 6 and 7 and cooling water from GT Units 1 and 2, discharged to the St. Marks River via the westernmost discharge canal. The design condition for OSN 001 is about 24,000 gallons per minute (gpm) at a 13° F. temperature rise (Unit 5 only). The average winter discharge temperature was reported in 1992 to be 78.8° F and the corresponding average summer temperature was 80.6° F. The design condition for OSN 002 is similar except that the design flow rate is about 66,000 gpm (Units 6 and 7).

TABLE 1-1
Recent Air Pollutant Emissions (Allowables and Actuals ⁽⁶⁾)
(tons/year)

Pollutant	UNIT 5				UNIT 6				UNIT 7				UNITS 5, 6 & 7	
	Actual Fuel Oil	Actual Nat. Gas	Actual Totals	Allowable Totals ⁽¹⁾	Actual Fuel Oil	Actual Nat. Gas	Actual Totals	Allowable Totals ⁽¹⁾	Actual Fuel Oil	Actual Nat. Gas	Actual Totals	Allowable Totals ⁽¹⁾	Actual Totals	Allowable Totals ⁽¹⁾
Particulate Matter ⁽²⁾⁽³⁾	0.01	1.19	1.20	164.30	0.15	1.22	1.37	164.30	2.65	4.65	7.3	340.00	9.87	668.60
PM ₁₀	0.01	1.19	1.20	164.30	0.15	1.22	1.37	164.30	2.65	4.65	7.3	340.00	9.87	668.60
Sulfur Dioxide ⁽⁵⁾	0.30	0.23	0.53	1710.00 ⁽⁶⁾	3.53	0.23	3.76	1710.00 ⁽⁶⁾	75.28	0.89	76.17	5100.00	80.64	8,520.00
Nitrogen Oxides ⁽⁶⁾	0.05	65.53	65.58	NR	1.44	133.96	135.4	NR	--	--	251.32	NR	452.30	NR
Carbon Monoxide ⁽⁷⁾	0.01	9.53	9.54	NR	0.15	9.74	9.89	NR	2.05	40.62	42.67	NR	62.10	NR
Volatile Organic Compounds ⁽⁸⁾	0.00	0.34	0.34	NR	0.02	0.34	0.36	NR	0.31	1.43	1.74	NR	2.44	NR
Lead ⁽⁹⁾	0.00	0.00	0.00	NR	0.001	0.00	0.001	NR	0.01	0.00	0.01	NR	0.01	NR
Asbestos	NA	NA	NA	NR	NA	NA	NA	NR	NA	NA	NA	NR	NA	NR
Beryllium ⁽¹⁰⁾	0.00	0.00	0.00	NR	0.00	0.00	0.00	NR	0.0003	0.00	0.0003	NR	0.0003	NR
Mercury ⁽¹¹⁾	0.00	0.0002	0.0002	NR	0.00	0.0002	0.0002	NR	0.002	0.0008	0.003	NR	0.003	NR
Vinyl Chloride	NA	NA	NA	NR	NA	NA	NA	NR	NA	NA	NA	NR	NA	NR
Fluorides ⁽¹²⁾	0.001	0.00	0.001	NR	0.006	0.00	0.006	NR	0.30	0.00	0.30	NR	0.31	NR
Sulfuric Acid Mist ⁽¹³⁾	0.01	0.00	0.01	NR	0.04	0.00	0.04	NR	2.35	0.00	2.35	NR	2.40	NR
Hydrogen Sulfide	NA	NA	NA	NR	NA	NA	NA	NR	NA	NA	NA	NR	NA	NR
Total Reduced Sulfur	NA	NA	NA	NR	NA	NA	NA	NR	NA	NA	NA	NR	NA	NR
Reduced Sulfur Compounds	NA	NA	NA	NR	NA	NA	NA	NR	NA	NA	NA	NR	NA	NR

Period of Record: August 1994-July 1996

NR - No restrictions

NA - No emissions information available or no emissions expected.

⁽¹⁾ Allowable totals based on emissions limitations contained in State of Florida Permit Number A065-242831.

⁽²⁾ It is assumed that all PM emissions are that of PM₁₀.

⁽³⁾ Actual PM emissions for fuel oil are based on PM test results for the corresponding period of record during normal operations and actual fuel usage. PM emissions for natural gas are based on an AP-42 factor and actual fuel usage. (Data for sootblowing are not yet included. The oil totals may increase slightly.)

⁽⁴⁾ Allowable SO₂ emissions based on requested SO₂ emissions limitation of 1.3 lb/mmBtu.

⁽⁵⁾ Actual SO₂ emissions for fuel oil are based on an AP-42 formula, percent sulfur in the oil (as-burned analyses) and actual fuel usage. SO₂ emissions for natural gas are based on the sulfur content (FGT data) and the actual natural gas usage.

⁽⁶⁾ Actual NO_x emissions for fuel oil and natural gas for Units 5 and 6 are based on an AP-42 factor and actual fuel usage. NO_x emissions for Unit 7 are based on CEMS lb/mmBtu data and total actual fuel usage.

⁽⁷⁾ Actual CO emissions are based on AP-42 factors and actual fuel usage.

⁽⁸⁾ Actual VOC emissions are based on AP-42 factors and actual fuel usage.

⁽⁹⁾ Actual lead emissions are based on AP-42 factors and actual fuel usage.

⁽¹⁰⁾ Actual beryllium emissions are based on AP-42 factors and actual fuel usage.

⁽¹¹⁾ Actual mercury emissions for fuel oil are based on AP-42 factors and actual fuel usage. Actual mercury emissions for natural gas are based on an EPRI factor and actual fuel usage.

⁽¹²⁾ Actual fluoride emissions are based on available FCG factors for hydrogen fluoride and actual fuel usage.

⁽¹³⁾ Actual sulfuric acid mist emissions are based on the AP-42 factor for sulfur trioxide and actual fuel usage.

⁽¹⁴⁾ Actual emissions are based on current estimates and emissions factors and are subject to change.

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The existing NPDES permit acknowledges that the operation of the plant intake system meets the federal requirements that the location, design, construction, and capacity of intake structures reflect the best technology available for minimizing environmental impacts, and that the thermal discharge meets appropriate state thermal limits.

OSN 005 and 006 physically discharge to the same location, a pipe from the wastewater treatment ponds to a location adjacent to the Unit 7 intake structure at the west end of the intake canal. OSN 005 includes air preheater wash (non-chemical metal cleaning waste) and chemical metal cleaning wastes (chemical cleaning rinse waters from boiler cleaning). OSN 006 consists of flows which EPA calls "low volume wastes", including boiler blowdown, demineralizer regeneration wastewaters, laboratory sampling wastewaters, and floor drains.

In addition to the industrial wastewater NPDES permit described above, the Purdom Plant also operates under the EPA General Permit for storm water discharges. Under this permit, there are two additional outfalls identified for storm water not associated with industrial activity. They are OSN 007 which discharges to the west end of the intake canal, and OSN 008, which discharges to the west side of the westernmost discharge canal.

2.0 KEY STUDY OBJECTIVES

2.1 AMBIENT AIR QUALITY/METEOROLOGY

2.1.1 Introduction

One of the key objectives of the study is to determine the impact of the proposed project on ambient air quality. This is especially important because of the presence of two environmentally sensitive areas in the site vicinity, the St. Marks Wilderness Area and the Bradwell Bay Wilderness Area. Both of these have been designated as "Class I" areas under the PSD regulations, which means that those areas are afforded special protection under the regulations. As a consequence, the project design includes the reduction of emissions from existing units to offset the emissions of some of the pollutants associated with the new unit, to the maximum extent practicable, in order to provide this special protection. In fact, a federally enforceable emissions cap (for SO₂ and NO_x) covering the proposed Unit 8, existing Unit 7, and new small auxiliary boiler will be sought, as allowed under Chapter 62-213.415 F.A.C. This cap or "bubble" will require emissions of SO₂ and NO_x to remain at or below recent emissions of those pollutants from Units 5, 6, and 7.

Under the federal and Florida PSD regulations, all major new sources and major modifications of existing sources must undergo the following analyses for each pollutant whose emissions increase in significant quantities: (1) a control technology analysis; (2) an air quality impacts analysis; and (3) an additional impacts analysis. The control technology analysis is required to ensure that the project includes what is determined to represent the "Best Available Control Technology (BACT)," which considers energy, economic, and environmental factors. The air quality impacts analysis must demonstrate that the project will not cause violations of the ambient air quality standards (designed to protect public health and welfare) or of the allowable PSD increments (designed to prevent deterioration of air quality in presently clean areas). The additional impacts analysis must demonstrate that impacts to visibility, vegetation and soils will not be significant. The City of Tallahassee must make all of these demonstrations in order to receive an air quality PSD permit for the proposed project.

The ambient air quality/meteorological studies will:

- Characterize the site meteorology and identify appropriate meteorological data to be included in Section 2.3.7.1 (Meteorology) of the SCA, and in air quality impact assessments;
- Characterize the baseline ambient air quality and identify the baseline concentrations to be included in Section 2.3.7.2 (Ambient Air Quality) of the SCA, which in turn, are needed for evaluation of air quality impacts;
- Assess the available emission controls, determine the emission levels which represent BACT, and report the results in Section 3.4 of the SCA.
- Describe and assess in SCA Sections 4.5 (Air Quality Impacts From Construction), and 5.6 (Air Quality Impacts From Operation), any air quality impacts which may result from construction and operation of the project after the application of emission controls;

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- Assess in Section 5.6 of the SCA any other impacts resulting from construction and operation of the project on soils, vegetation, visibility, etc.; and
- Present a proposed operational air quality emissions monitoring program which will be described in Section 5.6.2 of the SCA.

A PSD permit application will be included as part of the SCA in Section 10.1.5. Information on air quality and meteorology contained in Sections 2.3 and 5.6 of the SCA will be a summary of the more detailed data presented in the PSD application. A Title V Operating Permit modification application will be filed together with the PSD permit application in accordance with the requirements of Chapter 62-213.400 F.A.C.

2.1.2 Characterization of Existing Conditions

2.1.2.1 Historical Data

Regional Climatology

The climate in the Purdom Site area is mild and moist and characteristic of the Gulf States. The nearest National Weather Service office is located at the Tallahassee Regional Airport. Data recorded at the Tallahassee Regional Airport should be reasonably representative of the conditions at the site since the terrain is similar and the site is relatively close to the airport (approximately 30 km). However, as the Purdom Site is closer to the coast than Tallahassee, the meteorological data from the Apalachicola Municipal Airport (about 90 km southwest) will also be examined for applicability to the site. For air quality dispersion modelling purposes, five years of Tallahassee Regional Airport surface weather data will be used since only four years of Apalachicola surface weather data are available.

Unlike Florida's southern peninsula, Tallahassee experiences four definitive seasons with considerable winter rainfall and diminished winter sunshine. During the winter, topographic effects and cold air drainage from higher elevations to the north produce a wide variation of low temperatures on cold, clear and calm nights. The Tallahassee area climatic data summary is presented in Table 2-1. A wind rose for Tallahassee is shown in Figure 2-1.

Regional Air Quality

There are no air monitoring stations located in Wakulla County but some representative data are available from nearby Leon and Gadsden Counties. The data presented below are the most recent data available for each parameter for the years 1992-1995. According to Rule 62-204.240, F.A.C., Wakulla County is an "attainment" or "unclassifiable/attainment" area for all National and Florida Ambient Air Quality Standards (NAAQS/FAAQS). Attainment is achieved when the maximum concentration of a pollutant for a specified averaging time does not exceed the NAAQS/FAAQS. The "unclassifiable/attainment" designation means that no data exist which would indicate that the area is not in compliance with the standards. Other areas of the country are classified as "non-attainment" for a specific pollutant. However, there are no such areas within Wakulla County or surrounding counties.

Ozone is monitored in Leon County, the most populous county of the region. Thus, Leon County data may be considered to over predict ozone levels for the project location. The air quality

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Table 2-1 Tallahassee Regional Airport Climatic Summary

:STA 722140 | KTLH | TALLAHASSEE WSO AP ,FL,US
:LAT 30 23N :LONG 084 22W :ELEV 55(ft) 17(m) :TYPE NOAA SMOS V2.1 07021992

37 - STATION CLIMATIC SUMMARY

POR: (HOURLY): 1948-1990 (43 years for most parameters)

	TEMPERATURE (DEG F)					PRECIPITATION (INCHES) (^)					REL HUM	VAP	DEW	PR	WIND (KTS)			SKY	MEAN NO. OF DAYS WITH (&)				TEMP (DEG F)								
	MEANS		EXTREME			PRECIP.			SNOWFALL (@)	PERCENT	PR	PT.	ALT	PREVAIL	MAX	CVR	INCHES		SNOW-	TH	FOG	MAX	MAX	MIN	MIN						
	MAX	MIN	AVG	MAX	MIN	MEAN	MAX	MIN	24H	MEAN	MAX	MAX	AM	PM	HG.	\$	DIR		SPD	GST	+	>=	>=	>=	>=	STM	*	>=	>=	<=	<=
															.01	.50	.10	1.5					90	70	32	10					
JAN	64	40	52	83	6	4.2	11.7	.2	3.3	T	T	T	86	54	.27	42	35	N	7	46	OVR	9	3	0	0	2	17	0	10	10	#
FEB	67	42	55	89	14	5.1	11.5	.8	5.6	T	3	2	87	51	.29	44	45	N	8	44	OVR	9	3	#	#	2	16	0	12	6	0
MAR	73	48	61	90	20	6.0	16.5	1.0	7.1	T	T	T	88	49	.35	49	45	S	9	44	OVR	9	3	#	0	4	18	#	22	2	0
APR	80	53	67	95	29	4.2	13.1	.4	4.9	0	0	0	89	46	.43	55	40	S	9	47	CLR	7	2	0	0	4	17	1	28	#	0
MAY	86	62	74	102	34	4.5	11.7	T	4.5	0	0	0	89	50	.57	62	30	S	8	46	SCT	8	3	0	0	8	18	8	31	0	0
JUN	90	69	80	103	46	6.8	17.4	2.1	6.7	0	0	0	91	58	.72	69	25	S	7	66	SCT	12	4	0	0	14	17	19	30	0	0
JUL	91	71	81	103	57	8.8	20.1	2.3	8.2	0	0	0	93	66	.80	72	20	S	6	40	BRK	17	5	0	0	19	17	22	31	0	0
AUG	91	72	81	102	61	7.1	15.7	2.4	7.1	0	0	0	94	64	.79	72	20	E	5	46	BRK	14	5	0	0	16	18	21	31	0	0
SEP	88	68	78	99	40	5.7	20.3	.1	8.9	0	0	0	93	60	.71	69	30	ENE	7	72	SCT	10	3	0	0	8	17	13	30	0	0
OCT	81	57	69	94	30	2.9	12.3	T	5.5	0	0	0	90	51	.49	58	30	N	6	43	CLR	5	2	0	0	2	15	2	29	#	0
NOV	72	47	60	88	13	3.5	10.4	.4	4.9	0	0	0	89	52	.36	50	35	N	7	59	CLR	6	2	0	0	2	16	0	20	3	0
DEC	66	41	54	84	10	4.5	12.6	.9	5.0	T	1	1	87	55	.29	44	30	N	7	37	OVR	8	3	#	0	2	16	0	12	8	#
ANN	79	56	68	103	6	63.3	104.	31.0	8.9	T	3	2	90	55	.47	57	35	N	7	72	OVR	114	77	#	#	83	202	86	286	31	#
POR	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	19	43	43	43	43	43	43	43	43	43	43	43

T = TRACE AMOUNTS (< .05 < .5 INCHES)
 # = MEAN NO. DAYS < .5 DAYS
 \$ = PRESSURE ALTITUDE IN TENS OF FEET (I.E. 50 = 500 FEET)
 @ = NAVY STATIONS REPORT HAIL AS SNOWFALL; ALSO NWS FROM JULY, 1948 - DEC., 1955
 + = THE PREDOMINANT SKY CONDITION/PRECIP > LISTED AMOUNT AND < NEXT WHOLE INCH
 * = VISIBILITY IS NOT CONSIDERED
 & = ANN TOTALS MAY NOT EQUAL SUM OF MONTHLY VALUES DUE TO ROUNDING
 ^ = 24 HR MAX PRECIP AND SNOWFALL ARE DAILY TOTALS (MID-NIGHT TO MID-NIGHT)
 I = EXCESSIVE MISSING DATA - VALUE NOT COMPUTED
 " = INCHES

-----FEDERAL CLIMATE COMPLEX ASHEVILLE-----

Source: National Climatic Data Center. 1992. International Station Meteorological Climate Summary. Asheville, NC.

Table 2-1 (Continued)
Tallahassee Regional Airport Climatic Summary

-----INTERNATIONAL STATION METEOROLOGICAL CLIMATE SUMMARY-----

:STA 722140 | KTLH | TALLAHASSEE WSO AP ,FL,US
:LAT 30 23N :LONG 084 22W :ELEV 55(ft) 17(m) :TYPE NOAA SMOS V2.1 07021992
41 - STATION CLIMATIC SUMMARY (CONTINUED)

POR: (HOURLY): 1948-1990 (43 years for most parameters)

	MEAN NO. OF DAYS WITH (&)														
	PRECIPITATION					OBSTR TO VISION									
	FRZ	HAIL	SMOK	BLOW	DUST	OBS	R/DZ	R/DZ	SNOW	/SLT	PRCP	HAZE	SNOW	SAND	VIS
JAN	12	#	#	0	12	8	0	0	19						
FEB	11	0	#	#	11	9	0	0	19						
MAR	12	0	#	#	12	9	0	#	20						
APR	9	0	0	#	9	8	0	0	19						
MAY	11	0	0	#	11	11	0	#	20						
JUN	16	0	0	#	16	10	0	#	19						
JUL	21	0	0	#	21	9	0	0	18						
AUG	18	0	0	#	18	11	0	#	20						
SEP	13	0	0	#	13	11	0	0	19						
OCT	8	0	0	0	8	9	0	0	17						
NOV	9	0	0	0	9	8	0	0	18						
DEC	11	#	#	0	11	8	0	#	18						
ANN	151	#	1	1	151	111	0	#	226						
POR	42	42	42	42	42	42	42	42	42						

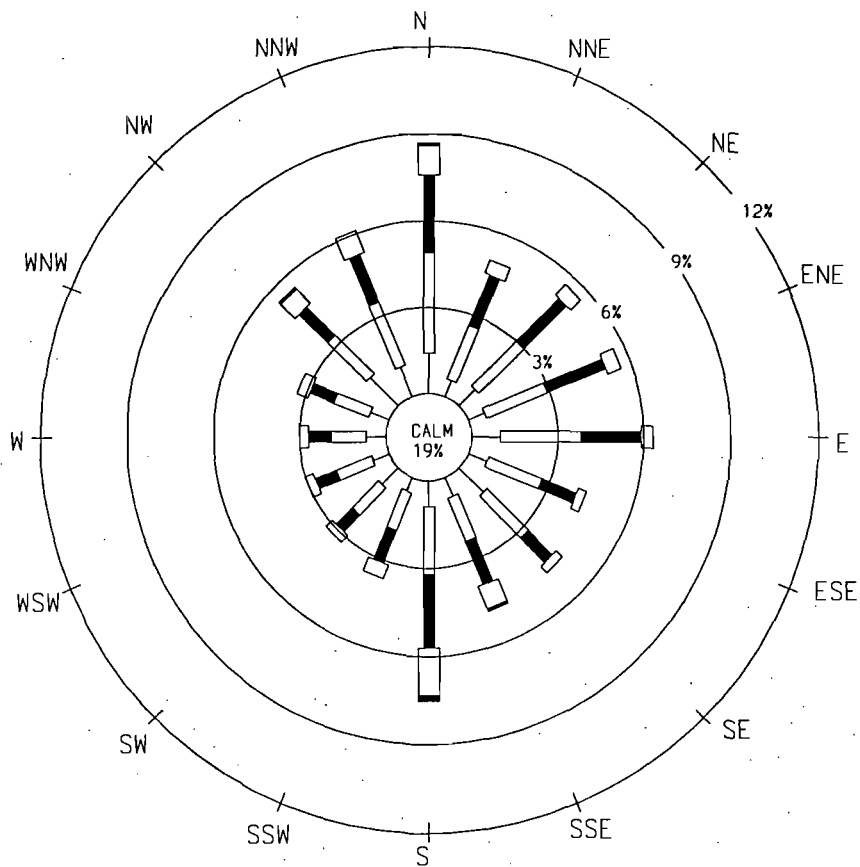
2.4

& = ANN TOTALS MAY NOT EQUAL SUM OF MONTHLY VALUES DUE TO ROUNDING
I = EXCESSIVE MISSING DATA - VALUE NOT COMPUTED
= MEAN NO. DAYS < .5 DAYS

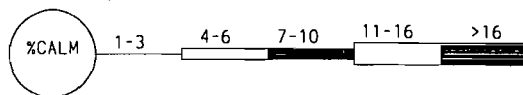
-----FEDERAL CLIMATE COMPLEX ASHEVILLE-----

Source: National Climatic Data Center. 1992. International Station Meteorological Climate Summary. Asheville, NC.

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WIND SPEED CLASSES (KNOTS)



.STA 722140 | KTLH | TALLAHASSEE WSD AP ,FL,US
 LAT 30 23N LONG 084 22W ELEV 55(11) 17(m) TYPE NOAA SMO5 V2.1 07021992

Figure 2-1
 Wind Rose
 Tallahassee Regaional Airport, FL (1948-1990)

Source: National Climatic Data Center. 1992. International Station Meteorological Climatic Summary. Asheville, NC.

standard for ozone (O_3) is 0.12 ppm ($235 \mu\text{g}/\text{m}^3$). This is a daily maximum one hour concentration, which is not to be exceeded an average of more than one day per year, according to Rule 62-204.240(4), F.A.C. In 1995, the second highest one-hour value observed in Leon County was approximately 80 percent of the standard at 0.096 ppm ($188 \mu\text{g}/\text{m}^3$). Data available for previous years show similar concentrations.

The FAAQS for NO_2 is $100 \mu\text{g}/\text{m}^3$ averaged over the entire year. The average concentration monitored in Gadsden County in January to June 1992 was $7 \mu\text{g}/\text{m}^3$ or 7 percent of the standard.

Respirable PM_{10} and SO_2 are not monitored by DEP in Wakulla, Leon, Jefferson, Taylor, or Gadsden Counties. The nearest monitoring locations for those pollutants are in Hamilton and Bay Counties, which are roughly 70 miles east and west of the site, respectively. In fact, the Hamilton and Bay County monitors are located near major air pollutant sources and the use of concentrations monitored there would result in overestimates of "background" concentrations in the St. Marks area.

The FAAQS for PM_{10} is $50 \mu\text{g}/\text{m}^3$ annual arithmetic mean, with a maximum of $150 \mu\text{g}/\text{m}^3$, averaged over a 24-hour period, according to Rule 62-204.240(2), F.A.C. The second highest short-term concentration measured in 1995 in Hamilton County was $48 \mu\text{g}/\text{m}^3$ or 32 percent of the standard. The annual arithmetic mean was $23 \mu\text{g}/\text{m}^3$ or 46 percent of the standard. Data are also available for Bay County where similar concentrations have been observed.

The FAAQS for SO_2 is $1300 \mu\text{g}/\text{m}^3$ for a 3-hour average, $260 \mu\text{g}/\text{m}^3$ for a 24-hour period and $60 \mu\text{g}/\text{m}^3$ for an annual average. The second highest 3-hour average recorded in 1995 in Hamilton County was $318 \mu\text{g}/\text{m}^3$ or 24 percent of the standard. The second highest 24-hour average for 1995 was $102 \mu\text{g}/\text{m}^3$ or 39 percent of the standard. The annual average concentration for 1995 was $13 \mu\text{g}/\text{m}^3$ or 22 percent of the standard.

No data are available for lead (Pb) and carbon monoxide (CO) in northwest Florida. Concentrations for both of these pollutants would be expected to be low due to the limited number of emission sources.

2.1.2.2 Data Search/Literature Survey

The data available from the meteorological and air quality monitoring locations described above will be summarized in the PSD Application (SCA Section 10.1.5) and SCA Section 2.3.7. Additional meteorological data will be sought from the National Climatic Data Center, DEP, and the U.S. Fish and Wildlife Service (FWS), and air quality data will be sought from the EPA, DEP, the FWS, the U.S. Forest Service, and others. The subjects and types of information sought to satisfy meteorological data requirements include:

- Mean and extreme values of temperature, precipitation, humidity, wind, atmospheric stability, and summaries of stagnation episodes and severe storm occurrences;
- Joint frequencies of wind directions, wind speeds, and atmospheric stability; and
- A detailed listing of hourly sequential surface meteorological data for Tallahassee combined with upper air data for Apalachicola for the years 1985 through 1989 to be used as input to the dispersion modelling analysis.

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For air quality data requirements, the subjects and types of information sought include:

- Background ambient air quality data for the criteria pollutants from official monitoring stations in the area and/or background concentration recommendations from DEP; and
- Information on significant emission sources in the area (permitted pollutant emission rate, stack height, stack diameter, stack exit velocity, and stack exit temperature).

These data will be summarized to describe the existing climate, ambient air quality, emissions, and regulatory environment of the area, and will be included in SCA Section 2.3.7.

2.1.2.3 Monitoring Exemption Request

A PSD preconstruction ambient air quality/meteorology monitoring exemption request is being developed separately to satisfy PSD requirements. It is believed that an exemption from the monitoring requirements will be appropriate as predicted ambient impacts from the proposed Purdom Plant modification are expected to be below the De Minimis Ambient Impacts in Table 212.400-3 of Chapter 62-212 F.A.C.

2.1.3 Impact Assessment

2.1.3.1 Construction Impacts

A qualitative discussion of the potential for air pollutant emissions during site preparation operations will be provided. Dust generation by construction vehicles will be estimated. Control technology to be used, particularly in the suppression of fugitive dust, will be described. Emissions from construction vehicles will be minor and also will be treated qualitatively. Results will be used to address the requirements of SCA Section 4.5.

2.1.3.2 Operation Impacts

The first objective of this task is to demonstrate that the proposed Unit 8 will apply Best Available Control Technology (BACT), where required, in accordance with Rule 62-212.400 F.A.C. Although not required for pollutants whose emissions will not be significantly increased by the proposed modification (including the addition of Unit 8, and the shutdown of Units 5 and 6), it is the City of Tallahassee's intent to present a BACT analysis for all pollutants expected to be emitted by Unit 8 in significant quantities. The BACT analysis will be included in detail in the PSD application and will be summarized in Section 3.4.3 of the SCA.

The other objective of this task is to define the probable air quality impacts which will occur during the operation phase of the proposed project, taking into account both the emissions increases and decreases. The City will determine the worst-case emission scenario from the bubbled emission units (Boiler 7, new Unit 8, and the new auxiliary boiler). Based on these emissions and the emission decreases resulting from the retirement of Units 5 and 6, the City will consider the impacts of the "proposed project". When used in this section and in Appendix B, "proposed project" will refer to the bubbled units and decreases from Units 5 and 6. It does not include the existing gas turbines (GT1 and GT2). Impacts of the criteria pollutants will be predicted and compared with applicable PSD increments, and, together with existing

concentrations, with applicable FAAQS. Impacts of trace element emissions will be predicted, and air toxics concentrations will be evaluated with respect to DEP's Draft Florida Ambient Reference Concentrations (FARCs).

The air quality impact of the proposed project will be evaluated quantitatively using EPA and DEP accepted dispersion modelling techniques to predict future concentrations of the pollutants of interest. Impact assessment methods will be consistent with the instructions of the EPA Guideline on Air Quality Models (40 CFR 51 Appendix W), the EPA Draft New Source Review Workshop Manual (U.S. EPA, 1990), Section 5.6 of the DEP SCA Instruction Guide [Section 62-1.211(1), F.A.C.], and DEP Prevention of Significant Deterioration, Preconstruction Review Requirements [Sections 62-212.400, F.A.C.].

The air quality assessment will consist of the following:

- Performance of single and multiple source dispersion modelling using the Industrial Source Complex Short Term (ISCST3) model to evaluate short-term and annual average concentrations at off-site receptors for specific pollutants emitted from the proposed project;
- Performance of multiple-source dispersion modelling using the ISCST3 model to evaluate interactions between the proposed project and other nearby sources for those pollutants whose off-site impacts are significant;
- Determination of background concentrations for all applicable pollutants and averaging periods based upon regional monitoring data or minor source modelling analysis;
- A screening level visibility impact analysis on the Class I area using VISCREEN;
- Assessment of single and multiple source modelling results in terms of compliance with Class I PSD increments at the nearest Class I areas, the St. Marks and Bradwell Bay Wilderness Areas, if the impacts from the proposed project are significant;
- Assessment of single and multiple source modelling results in terms of compliance with FAAQS if the impacts from the proposed project and the existing gas turbines are significant;
- A qualitative assessment of the expected air quality impacts of criteria pollutants and regulated non-criteria pollutants on vegetation and soils, to be conducted in conjunction with the ecology tasks; and
- An assessment of selected air toxics impacts due to the proposed project and existing gas turbines versus DEP Draft FARC levels. Included will be all air toxics for which project specific emissions data are available.

A detailed air quality modelling protocol is included in this Plan of Study as Appendix B.

2.2 ST. MARKS RIVER HYDROLOGY/WATER QUALITY/HABITAT

2.2.1 Introduction

The St. Marks River is designated Class III in the vicinity of the Purdom Generating Station. Upstream of Rattlesnake Branch and downstream of the confluence with the Wakulla River, the St. Marks River is designated an Outstanding Florida Water.

The river has a history of oil spills from the 1970s and presently receives the discharge from the City of St. Marks sewage treatment plant. Although the Apalachee Regional Planning Council reports that "...the river has good to excellent water quality, except for the portion adjacent to the industrial complex of the town of St. Marks" (Apalachee Strategic Regional Policy Plan, 1996), there have never been any long-term water quality stations established on the St. Marks River. Available river surveys have been focused on problems relating to oil spills and sewage effluents, and whether the river meets Class III standards has never been documented.

The U.S. Geological Survey (USGS) maintained a flow station on the St. Marks River, near Newport, from October 1956 through September 1994. Based on a preliminary assessment of those records, the 7-day, 10-year low flow is about 330 cubic feet per second (cfs). The average tidal flow is about 360 cfs based on mean tidal ranges. Field measurements indicate that the fresh water flow rides above a salt water wedge in the vicinity of the Purdom Station. The existing station flow from Units 5-7 is on the order of 200 cfs. Based on these flows, it is unlikely that the plant's thermal plume ever recirculates back to its intake.

Based on the design and configuration of the plant discharge structures and the configuration of the intake structures, it is believed that the plant uses only the fresh water layer in the upper river for cooling. The EPA and the DEP have indicated through the plant NPDES and IWW permits that the Purdom Plant thermal discharge does not "...increase the temperature of the Receiving Body of Water (RBW) so as to cause substantial damage or harm to the aquatic life or vegetation therein or interfere with beneficial uses assigned to the RBW." The actual extent of the thermal plume from the station has not been documented to date.

The West Indian manatee (*Trichechus manatus*) is listed as an endangered species by both the FWS and the Florida Game and Fresh Water Fish Commission (FGFWFC). This species has been observed in the St. Marks River and in the vicinity of the Purdom Station. The primary issue to be evaluated involves the potential impact of thermal discharge reductions into the St. Marks River with Purdom Unit 8 Project development and the associated shutdown of Units 5 and 6. Of particular interest is the effect of changes in project operations during cold weather months on manatee migration patterns.

2.2.2 Baseline Characterization

The baseline characterization proposed for the St. Marks River includes a literature search to obtain all available public information from such sources as the USGS, Florida Geological Survey, EPA and the NFWMD, and a three-pronged field program as follows:

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- Episodic river profiling for current velocity and direction, conductivity, salinity, temperature, pH, dissolved oxygen, and bathymetry to document the salt wedge and the thermal plume;
- Long-term continuous recording of salinity at two depths, and water level, in the existing Unit 7 intake area; and
- Water quality sampling and laboratory analysis for all Class III constituents, and other constituents which may be required for performance of speciation modeling, at two different times in the vicinity of the proposed intake area. Table 2-2 lists the constituents for which analyses will be performed.

Baseline manatee habitat data collection will focus specifically on manatee occurrence in the site vicinity, existing thermal discharge data over the course of a year, and ambient water temperature data. Manatee population baseline data will be obtained from the Manatee Watch Program, Florida Natural Areas Inventory, and other appropriate data sources. Manatee habitat data and thermal preferences will be obtained from published information and the FWS. Data sources regarding St. Marks River temperatures and existing thermal discharges include existing published data, existing Purdom Station data, and site-specific investigations to be conducted as part of proposed Unit 8 site certification studies. The existing situation with respect to manatees will be documented in SCA Section 2.3.6.

2.2.3 Impact Assessment

The impact assessment on the St. Marks River will be performed to compare the existing baseline condition against the proposed improved condition. The existing condition includes withdrawal of water by Units 5-7, the thermal and chemical discharges from Units 5-7, and the discharge of secondary effluent from the City of St. Marks. The proposed condition includes the thermal discharge from Unit 7 only, the elimination of the use of water for once-through cooling by Units 5 and 6 (about 48,000 gpm), the addition of a withdrawal for Unit 8 for closed cycle cooling system makeup (estimated at about 1,000 gpm), and the elimination of both the chemical discharge from Units 5-7 and the discharge from the City of St. Marks sewage treatment plant. Results will be documented in Sections 5.1, 5.2, 5.3, and 5.5 of the SCA.

The river was originally dredged from the mouth to Newport to accommodate navigation. The existing condition includes the use of the river for delivery of fuel oil by barge to the Seminole Refinery, the Purdom Plant, and the McKenzie oil storage area. Based on the projected differential in price between fuel oil and natural gas, the proposed project is expected to reduce the amount of fuel oil delivered to the power plant and its associated barge traffic.

Because of the project, thermal discharges into the St. Marks River will be reduced. In terms of manatee use of the area, the impact assessment will focus on the existing station conditions compared with the proposed conditions, including the reduction in thermal discharges which currently attract manatees during cold winter months. The existing thermal moderation of river temperatures from upstream springs will be evaluated relative to manatee water temperature preferences. Although manatees may not be as attracted to the Purdom Station after the project is implemented, the net effect of the Purdom Unit 8 Project on the river's ecology is expected to be positive. Projected impacts will be documented in Section 5.1.

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**Table 2-2
Water Quality Sampling Constituents**

Type of Constituent	Constituent	Class III Limit in St. Marks River at Purdom Station (if applicable)
Physical	pH	Within 1 unit of natural background & between 6 and 8.5, or not less than natural nor more than 1 unit above natural if natural <6 and not more than natural nor less than 1 unit below natural if natural > 8.5
	Dissolved Oxygen	5 mg/l (minimum)
	Temperature	see 62-302.520
	Total Dissolved Gases	110% of saturation value
General Inorganics	Total Suspended Solids	tested for modeling
	Total Dissolved Solids	tested for modeling
	Hardness (as CaCO ₃)	required for calculating trace metal limits, abbreviated as H
	Alkalinity (as CaCO ₃)	20 mg/l as CaCO ₃ (minimum)
	Nitrate (as N)	not to imbalance natural populations
	Nitrite (as N)	not to imbalance natural populations
	Ammonia (as N)	.02 mg/l (un-ionized) and not to imbalance natural populations
	Total Phosphorus (as P)	not to imbalance natural populations
	Silica (as SiO ₂)	tested for modeling
	Cyanide (as CN)	.0052 mg/l
	Aluminum	tested for modeling
	Sulfides	tested for modeling
	Total Residual Chlorine	.01 mg/l
Major Cations	Calcium	Tested for modeling
	Magnesium	Tested for modeling
	Sodium	Tested for modeling
	Potassium	Tested for modeling
Minor/Trace Elements	Antimony	4.3 mg/l
	Arsenic	.050 mg/l
	Beryllium	.00013 mg/l (at ann avg flow)
	Cadmium	$e^{(.7852[\ln H]-3.49)} \mu\text{g/l}$
	Copper	$e^{(.8545[\ln H]-1.465)} \mu\text{g/l}$
	Iron	1.0 mg/l
	Lead	$e^{(1.273[\ln H]-4.705)} \mu\text{g/l}$
	Mercury	.000012 mg/l
	Nickel	$e^{(0.846[\ln H]+1.1645)} \mu\text{g/l}$
	Selenium	0.005 mg/l
	Silver	0.00007 mg/l
		Thallium
	Zinc	$e^{(0.8473[\ln H]+0.7614)} \mu\text{g/l}$
Major Anions	Chloride	Tested for modeling
	Bicarbonate	Tested for modeling
	Carbonate	Tested for modeling
	Sulfate	Tested for modeling

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Type of Constituent	Constituent	Class III Limit in St. Marks River at Purdom Station (if applicable)
Microbiologicals	Fecal coliform	Multiple requirements
	Total coliform	Multiple requirements
Organics	Benzene	.07128 mg/l (at ann avg flow)
	Phthalate Esters	0.003 mg/l
	PCBs	0.00000045 mg/l (ann avg flow) & 0.000014 mg/l
	Tetrachloroethylene	0.00885 mg/l (ann avg flow)
	1, 1, 1-Trichloroethane	173 mg/l
	Trichloroethene	0.0807 mg/l (ann avg flow)
	Carbon Tetrachloride	.00442 mg/l (ann avg flow)
	1,1-dichloroethylene (1,1-dichloroethene)	.0032 mg/l (ann avg flow)
	dichloromethane (methylene chloride)	1.58 mg/l (ann avg flow)
	2,4-dinitrotoluene	.0091 mg/l (ann avg flow)
	Bromoform	0.360 mg/l (ann avg flow)
	Chlorodibromomethane	0.034 mg/l (ann avg flow)
	Chloroform	0.4708 mg/l (ann avg flow)
	Chloromethane (methyl chloride)	0.4708 mg/l (ann avg flow)
	Dichlorobromomethane	0.022 mg/l (ann avg flow)
	Hexachlorobutadiene	0.0497 mg/l (ann avg flow)
	Pentachlorophenol	0.0082 mg/l (ann avg flow) & $e^{(1.005[\text{pH}]-5.29)} \mu\text{g/l}$ & 0.030 mg/l
	Polycyclic aromatic hydrocarbons (PAHs, see Note 1)	0.000031 mg/l (ann avg flow)
	Anthracene	110 mg/l
	Fluorene	14 mg/l
	Pyrene	11 mg/l
	Fluoranthene	0.370 mg/l
	Acenaphthene	2.7 mg/l
1,1,2,2-tetrachloroethane	0.0108 mg/l (avg ann flow)	
Pesticides & Herbicides	Aldrin	0.003 mg/l & 0.00000014 mg/l (ann avg flow)
	Dieldrin	0.00000014 mg/l (ann avg flow) & 0.0000019 mg/l
	Chlordane	0.00000059 mg/l (ann avg flow) & 0.0000043 mg/l
	Demeton	0.0001 mg/l
	Endosulfan	0.000056 mg/l
	Endrin	0.0000023 mg/l
	Guthion	.00001 mg/l
	Heptachlor	.00000021 mg/l (ann avg flow) & 0.0000038 mg/l
	Lindane (g-benzene hexachloride)	0.000063 mg/l (ann avg flow) & 0.00008 mg/l
	Malathion	0.0001 mg/l
	Methoxychlor	0.00003 mg/l
	Mirex	0.000001 mg/l
	Parathion	0.00004 mg/l
Toxaphene	0.0000002 mg/l	

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Type of Constituent	Constituent	Class III Limit in St. Marks River at Purdom Station (if applicable)
	Beta-hexachlorocyclohexane (b-BHC)	0.000046 mg/l (ann avg flow)
	DDT	0.00000059 mg/l (ann avg flow) & 0.000001 mg/l
Biological Integrity	Shannon-Weaver diversity index	75% of background levels
	Transparency	Not to be reduced more than 10% of natural
Source: Florida Administrative Code 62-302, August 1996		
<p>Note (1): PAH includes the following:</p> <ul style="list-style-type: none"> Acenaphthylene Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(ghi)perylene Benzo(k)fluoranthene Chrysene Dibenzo(a,h)anthracene Indeno(1,2,3-cd)pyrene Phenanthrene 		

2.3 ECONOMIC IMPACT

2.3.1 Introduction

Due to the limited availability of goods and services, the economic impact of the project in Wakulla County is likely to be small. Except for the short-term impact on eating and drinking establishments and temporary housing during the construction phase of the project, most goods and services supportive of power plant construction and operation will probably be purchased in Leon County and elsewhere. Leon County is by far the dominant economy of the region. For example, employment in Leon County in 1990 was almost 15 times greater than in Wakulla County, nearly 22 times greater than in Jefferson County and more than six times greater than in Gadsden County. While jobs, goods and services are more abundant in Leon County, Wakulla County is prized for its natural qualities and recreational amenities, which are appreciated and used by residents of Leon and other surrounding counties. Consequently, there exists a complementary relationship between Leon County, as the economic center of the region, and surrounding counties, including Wakulla, where a more natural, less developed rural environment is enjoyed by residents and visitors alike.

Accordingly, the City of Tallahassee has committed, with the Purdom Unit 8 Project, to spend significant project resources not only to avoid adversely impacting the environment at the Purdom Station, but to improve it. By eliminating wastewater and reducing cooling water discharges to the St. Marks River, maintaining air quality, and improving the aesthetics of the Purdom Station along the St. Marks River shoreline, the project will protect and enhance the chief economic asset of Wakulla County, its natural beauty and environmental character.

In terms of the more traditional analysis of economic impact, the SCA will focus primarily on the impact of project construction on the local economy (i.e., the City of St. Marks and Wakulla

County) and the long-term impact on the City of Tallahassee's fiscal resources. During project construction, there will be a temporary impact on the City of St. Marks and Wakulla County as the more specialized construction crafts are expected to temporarily relocate near the Purdom Station. Permanent employment at Purdom will be maintained at a higher level than could be expected without the project but will be reduced from present levels. The proposed construction of Unit 8 is expected to lower production costs for the City of Tallahassee electric system. The resulting economic benefit could be in the form of reduced electric rates, an increase in municipal revenues, or a combination of the two.

2.3.2 Baseline Characterization

Socioeconomic information to be gathered will include historic, current and projected population figures available from the University of Florida Bureau of Economic and Business Research and Wakulla County, as well as employment by sector and income data from the Florida Department of Labor and Employment Security. Other data to be gathered will include availability of temporary housing, existing housing stock, and building activity in Wakulla County. Housing data will be obtained from the 1990 Census and Wakulla County. Information on public services and facilities, including schools, medical facilities, fire fighting and police facilities, recreation facilities, potable water, sanitary sewer and solid waste facilities will be gathered from the City of St. Marks and Wakulla County. Information on these facilities will include their locations, capacities and current and projected usage.

2.3.3 Impact Assessment

2.3.3.1 Construction Impacts

The construction impact assessment will estimate the effect of project construction on the regional economy. Factors to be assessed include construction employment and payroll, spending for construction materials and supplies, and spending of construction employees. Regional Input-Output Modelling System (RIMS II) multipliers, available from the State of Florida, will be used to estimate the indirect effects of project construction on other sectors of the regional economy.

The size of the construction workforce, the duration of the construction period, and construction payroll will be estimated based on the plant design and construction schedule. The number of construction workers who commute to the site daily from surrounding counties and those who temporarily relocate will be estimated. These estimates will be based on construction workforce availability and commuting routes, and the availability of temporary housing near the construction site. It is expected that there will be some temporary relocation for crafts that are unique to power plant construction and are not available in the local labor force.

The information developed from the impact assessment will be included in Sections 4.6, 4.10 and 7.0 of the SCA.

2.3.3.2 Operation Impacts

This section of the analysis will assess the impact that operation of the project will have on the socioeconomic environment of the area. The impact on Wakulla County employment and payroll

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will be estimated. Since the project will involve the addition of a new, very efficient combined cycle unit and the retirement of older units at the site, permanent employment and payroll are expected to decrease from present levels. However, employment levels will be higher than they would be if the project were not built.

The reduction in production costs for the electric utility will result in an increase in revenues to the City of Tallahassee, an opportunity to decrease (or avoid increasing) electric rates for City of Tallahassee customers, or both. This economic benefit to the City of Tallahassee will be estimated, assuming that 100 percent of the cost reduction will be applied to: (1) rate reduction or, (2) increasing transfers to the City of Tallahassee's General Fund, recognizing that the decision to do either or both will be the Tallahassee City Commission's to make in the future.

The impact assessment will also address the potential for impact on City of St. Marks and Wakulla County services and facilities as compared to any in-kind services or fees-for-services paid by the City of Tallahassee in connection with the Purdom Unit 8 Project.

Information on the impact of project operation on the socioeconomic environment will be included in Section 7.0 of the SCA.

2.4 ECOSYSTEM MANAGEMENT

2.4.1 Introduction

The Purdom Unit 8 Project has been designed to be consistent with the themes and principles of DEP's Ecosystem Management program. Specifically, the project design recognizes the sensitivity of the project site as well as the protection and enhancement of the existing site environment. With the use of natural gas, a clean fuel, and adaptation/retrofit of an existing facility, the project emphasizes pollution prevention as well as pollution control. In addition, the installation of advanced, highly efficient generating technology will serve to conserve scarce energy resources. The PPSA permitting process will allow for multi-disciplinary, coordinated review of the project. Finally, the City of Tallahassee has committed to a public involvement program which will allow citizens to participate in the decision-making process as the project moves through permitting.

The Ecosystem Management program identifies "stewardship" as its overarching theme. The City of Tallahassee, through its design approach, will practice stewardship by upgrading an existing facility and leaving the environment "better off". At the same time, the fiscal and economic health of the community of Tallahassee will be strengthened with the addition of new, efficient and cost effective electric generating capacity.

The following paragraphs briefly discuss the project in terms of the four cornerstones of the Ecosystem Management Program, highlighting those recommendations that the project is expected to help implement in the St. Marks River basin.

2.4.2 Place-Based Management

The Purdom Unit 8 Project is proposed to be located at the existing Purdom Station on the St. Marks River in St. Marks, Florida. The generating station was first developed in 1952, and there

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are presently seven different steam generating units plus two combustion turbines located on the site. Units 1 through 4 are not operating and are scheduled for demolition. Units 5 and 6 will be retired in the future. With the installation of Unit 8, the retirement of those units will be accelerated. Unit 7 is planned to remain operational following the installation of Unit 8, although at a reduced load factor.

The Ochlockonee and St. Marks River Basins, which includes the Purdom Station, have been identified as an Ecosystem Management Area (EMA). Also, the beauty and the natural, rural character of the area are recognized as important local economic assets. The City of Tallahassee was mindful of that when it considered the Purdom Unit 8 Project. A specific up-front commitment was made, despite the importance of economics in the competitive bidding process, to spend resources to protect and enhance the environment at Purdom, thereby protecting the "sense of place".

Among the specific DEP Ecosystem Management recommendations in "The Ecosystem Management Strategy," dated September 1995, that the Purdom Unit 8 Project would help implement are the following:

Recommendation P-3

Have teams undertake an action-oriented planning process for EMAs and component places. The goal of this planning process is not to produce additional plans, but rather to stimulate strategic actions necessary for ecosystem management. Planning and subsequent actions will focus on achieving:

b. voluntary participation of private landowners and applicants in improving resource stewardship on public and private lands within the EMA.

The City of Tallahassee has made the following design commitments related to the protection of habitat and air and water resources in and around the Purdom Station:

- The commitment to natural gas as the primary fuel;
- The installation of advanced combined cycle technology to replace older, less efficient technology to improve the overall efficiency of the City of Tallahassee's generating system and conserve energy resources, reduce production costs, and minimize air emissions;
- The commitment to maintain air emissions at or near existing levels even with the installation of Unit 8 (which will increase the generating capacity at Purdom by 200 percent) by retiring Units 5 and 6 early;
- The installation at considerable additional expense to the project of a zero discharge facility which will eliminate the need for thermal discharges to the St. Marks River for the new unit;
- The reuse of Purdom's treated waste streams and the City of St. Marks' sanitary effluent in the proposed cooling system, which will eliminate the discharge of these treated wastewaters to the St. Marks River; and

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- Avoidance of wetland impacts at the Purdom Station site through careful site layout.
 - g. success in addressing priority management issues such as control of exotics, protection of submerged lands, prescribed burning, restoration, reduction of air emissions, co-location of public infrastructure in common corridors, public access needs, management of cultural resources, and pollution prevention.*

Pollution prevention is accomplished through the use of a clean fuel (natural gas) and the installation of highly efficient, combined cycle technology to replace older, less efficient units. The result is that generating capacity will be increased substantially but air emissions will remain at or near current levels. Oil storage at the Purdom Station will likely be reduced. The additional electricity to be generated at Purdom can be transmitted over existing lines that will require only conductor replacement. The natural gas will be transported to the site along an existing Florida Gas Transmission right-of-way. The existing pipe will only have to be increased in size. The City of St. Marks' treated sanitary effluent will be transported to the Purdom Station via a new pipeline to be installed along existing city streets.

h. integration of land management with water management issues relating to flow alterations, operation of control structures, pollution load reductions, water conservation, groundwater use and recharge, siting of well fields, and beach and inlet management.

With the retirement of Units 5 and 6, which will occur earlier than planned because of the Purdom Unit 8 Project, withdrawals from the St. Marks River for cooling water will be reduced by 50 percent. Water reuse through the proposed zero discharge system and the use of City of St. Marks' effluent and other treated wastewaters for make-up to the cooling system will minimize withdrawals for cooling and process water at the station, allowing on-site and near-site groundwater wells to be retired from use. As mentioned above, currently permitted thermal and chemical discharges to the St. Marks River will be reduced or eliminated.

2.4.3 Cultural Change

Cultural change, as a cornerstone of ecosystem management, refers to the need to recognize a shared responsibility for protection of the environment. As a municipal electric utility serving the state capital and with a generating station in another county's jurisdiction, the City of Tallahassee is keenly aware of the need to avoid adversarial relationships and work together to achieve common goals.

The Purdom Unit 8 Project will be permitted through a coordinated review process provided for under the PPSA. That process fosters coordination and cooperation among regulatory agencies to develop a single permit, or certification, with a consistent and coordinated set of conditions. In addition, the City of Tallahassee has voluntarily undertaken a public involvement and public information program to inform Tallahassee, St. Marks, and Wakulla County citizens about the project and seek their input. To begin the process, a series of public meetings will be held in Tallahassee and St. Marks in September 1996. The City of Tallahassee hopes to conduct the permitting for the Purdom Unit 8 Project in an atmosphere of trust and mutual respect and to understand and take into account the views of citizens, environmental groups and regulators as the two-year, multi-step permitting process moves forward.

2.4.4 Common-Sense Regulation

This cornerstone of ecosystem management emphasizes solutions that are:

- Consensus-based within the framework of the law rather than adversarial and entrenched;
- Based on pollution prevention instead of end-of-pipe control; and
- Flexible, rather than rigid ways to meet environmental standards.

The Purdom Unit 8 Project will be permitted under the PPSA which provides for coordinated review. Because the process results in a single permit, called the site certification, it lends itself to consensus-based decision-making and reconciliation of conflicting regulatory approaches and standards. There is a strong tradition in power plant siting cases of developing an agreed upon set of conditions and concluding with an administrative hearing that usually is not adversarial. The opportunity exists in the power plant siting process for, and the City of Tallahassee would welcome, a consensus-based rather than an adversarial approach toward resolution of permitting issues and development of the conditions of certification. Toward that end, the City of Tallahassee is sponsoring opportunities for early “scoping” of issues and identification of potential solutions in concert with the regulatory agencies, environmental groups, local governments and citizens. Also, as discussed above, the City of Tallahassee made an early commitment to environmental protection which is reflected in the proposed design of the project in order to set the stage for a consensus-based approach.

The choice of a clean efficient fuel, such as natural gas, shows an emphasis on pollution prevention over “end-of-pipe” control. Fuel choice is perhaps the most important factor in project economics. The City of Tallahassee has taken advantage of recent trends toward greater competition in the natural gas market to obtain very competitive, guaranteed natural gas pricing and has looked for opportunities in facility sharing and existing site utilization to provide attractive project economics while protecting the environment.

Finally, there may be some flexibility needed in the application of regulatory standards. For example, actual historical air emissions against which project emissions will be compared are lower than allowed under the City of Tallahassee’s permits because the City of Tallahassee has chosen to burn a lower sulfur fuel than it is permitted to burn. At existing sites which are candidates for repowering or expansion, disincentives are created for burning fuels that will generate fewer emissions than allowed by permit when these types of comparisons are made. Perhaps there is an opportunity to reward or credit the City of Tallahassee for voluntarily reducing emissions in the past so that they are not penalized when comparisons of projected emissions are made to actual historical emissions to determine the net environmental impact of the project.

Among the specific DEP Ecosystem Management recommendations that the Purdom Unit 8 Project would help implement are the following:

Recommendation R-1

Pursue pilot implementation of alternative regulatory processes that include voluntary participation, applicant incentives, and net ecosystem benefit.

The PPSA is an example of an alternative regulatory process. The standards under the statute are consistent with the concept of net ecosystem benefit. There are some ways in which the process is "streamlined" because there is coordinated agency review and enforceable statutory timeframes that can ensure that a project stays "on track".

Recommendation R-2

Initiate team permitting through creation of multi-disciplinary, cross-media (air, water, wildlife, land use, etc.) review teams within DEP headquarters and district offices.

Again, the PPSA does provide for coordinated review similar to what is called for in this recommendation. A single hearing officer hears testimony and evidence and issues a recommended order on the entire range of project-related issues. The Governor and Cabinet also act on that order as a whole, so the opportunity exists through the PPSA process for this multi-disciplinary, cross-media permitting approach to be taken.

2.4.5 Foundations of Ecosystem Management

This cornerstone addresses several additional aspects of the ecosystem management program that do not fall under the other categories of place-based management, common sense regulation or cultural change. Particularly applicable to the Purdom Unit 8 Project are the recommendations dealing with Public Linear Infrastructure Planning and Science and Technology.

Recommendation F-5

Co-location of public linear infrastructure should be encouraged wherever economically feasible, safe and reasonably practicable, based on the results of further study conducted with input from affected interests and the general public.

First of all, because of the project's location at the existing Purdom Station no new electric transmission lines will need to be built. Conductor replacement is all that will be required to tie the new unit into the electric grid. Similarly, the right-of-way for the natural gas pipeline already exists and there will be only the need to enlarge the pipe and install a new metering station at the Purdom Station. A new pipeline for delivery of the City of St. Marks' treated effluent to the Purdom Station for use as make-up to the cooling system will be installed along existing city streets.

Recommendation F-7

At the Ecosystem Management Area level, create and coordinate an aggressive statewide monitoring program to determine ecological health, status, and trends for all pertinent ecosystem components state-wide. This should be coupled with an inventory of biologic, hydrologic, geologic, air and anthropogenic resources.

In meeting the requirements of the DEP site certification application guidelines, certain baseline data collection will be required. These data include inventories of resources within a specified radius of the proposed project which could provide a portion of the comprehensive data base for the Ochlockonee-St. Marks Ecosystem Management Area called for in this recommendation.

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2.4.6 Conclusion

Although the Purdom Unit 8 Project will be permitted through the PPSA as a specific project, there are many ways in which individual projects can further the goals of the Department's ecosystem management program and serve as examples of the ecosystem management approach. Based on the proposed project design and the City of Tallahassee's commitment to a collaborative permitting process, the Purdom Unit 8 Project presents an opportunity to implement several of the key recommendations of the Ecosystem Management Implementation Strategy. The Purdom Unit 8 Project is proposed to address the twin goals of improving the environment and the economy simultaneously without seeking "trade offs" of one for the other. It represents a common sense approach to meeting the economic needs of the community while preserving the environment so that the long term interests of Florida, the City of Tallahassee, Wakulla County and the City of St. Marks are served.

3.0 OTHER STUDY OBJECTIVES

3.1 SURFICIAL HYDROLOGY

Other surficial hydrology items to be addressed, in addition to the St. Marks River characteristics described in 2.2 above, include the site water budget and area water users, on-site water bodies, and hydrological characteristics of the proposed effluent pipeline corridor. Also, as a consequence of the zero discharge system, a solid waste will be produced (solidified mineral salts from the river water) that will be either reused or disposed of off site. These items are all required by the SCA guidelines.

The baseline characterization for site water budget will include a discussion of rainfall, air temperatures, evaporation and evapotranspiration, runoff, and groundwater recharge. The characterization for area users will include a list of permitted water users and a map of their locations. On-site water bodies will discuss the intake canal, the two discharge canals, existing storm water swales, and any on-site wetlands. Characteristics of the proposed effluent pipeline corridor will be determined observed by field reconnaissance.

The impact assessment will deal primarily with the lessening of impacts that will be achieved with the proposed project. No impacts are projected to on-site water bodies, except for the addition of a recharge swale to compensate for the slight increase in impermeable surface that will result from plant construction. Impacts to water users will be positive due to the cessation of pumpage of groundwater from the City of Tallahassee's existing well field and the retirement of those wells. Preliminary observation of the expected effluent pipeline corridor indicates that it will not have to cross any significant hydrological features. The predicted impacts will be discussed in Sections 4.2, 5.1, 5.3, 5.4, and 6.2 of the SCA.

3.2 GROUNDWATER HYDROLOGY/GEOLOGY

The geohydrologic setting and the potential impacts from operation and construction of the proposed Unit 8 will be presented and described in the SCA. The SCA guidelines require that the following sections and topics be included:

- Section 2.3.1 - Geohydrology.
- Section 4.1.4 - Topography and Soil.
- Section 4.3 - Groundwater Impacts.
- Section 5.3.2 - Impacts on Groundwater Supplies.

The baseline characterization of the site will include a complete description of both the local and regional geology and hydrology. The NFWFMD, the DEP, Bureau of Geology, and the USGS will each be contacted to obtain information on the local and regional resources for descriptive purposes. Existing plant records concerning wells, borings and excavations will be reviewed and correlated to the information obtained from these agencies to prepare an accurate and up-to-date description of the plant's geohydrologic setting.

A phased investigation of local karst features, including estimates of the probability of sinkhole formation, will be conducted. Initially, plant records of borings and well drilling will be reviewed

for any evidence of karst features. In addition, black and white and infrared spectrum aerial photographs will be reviewed for evidence of lineaments or lineations to determine the possible location and incidence of karst related features. This information can be used to conduct a non-invasive geophysical investigation, if warranted.

Existing soil boring logs will be reviewed to provide current information regarding bearing strength of the soil and rock units in the areas planned to undergo construction.

The primary objective of the impact assessment is to describe any construction-related alteration of the site topography or soils, and the effects such alterations will have on site runoff, percolation rates, subsidence, bearing strength, soil stability, aesthetics, and viewshed. The second objective is to describe any effects that construction-related activities will have on the surficial aquifer and nearby water wells. Based on a preliminary assessment of the potential impacts, construction and operation of the project will have no foreseeable adverse impacts to groundwater resources in the study area. Groundwater usage by the plant will be eliminated, which will have a positive impact and will help to preserve the limited fresh groundwater resources which are available locally. A simple groundwater model will be used to predict the change in local groundwater conditions resulting from this elimination of groundwater usage by the plant.

The proposed location of Unit 8 has been used in the past as a temporary stockpile for used plant equipment and materials prior to their disposal offsite. The proposed project will most likely be supported by augured cast-in-place concrete piles. Installation of these piles will result in bringing sub-surface soils and some ground water to the surface. Some soil and ground water samples will be analyzed to establish the baseline conditions. The proposed locations where samples will be collected are shown on Figure 3-1.

Because of the past storage of used plant equipment and materials, the analysis will include testing for the RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), asbestos, and PCBs. Because of the site history of petroleum product storage, an organic vapor analyzer (OVA) will be used to field-screen each boring. Depending on the field-screening results, selected samples may be analyzed for the Kerosene Analytical Group. At least four soil samples and four groundwater samples will be analyzed for these parameters.

3.3 AQUATIC ECOLOGY

The focus of the aquatic ecology studies will be on important species that are:

- Listed as endangered or threatened by the FWS;
- Listed as endangered, threatened or species of special concern by the FGFWFC; or
- Listed freshwater game or sport fish in Florida Admin. Code Rule 39-1.

An objective of this activity is to gather information concerning aquatic ecology, including water quality, and the extent and quality of local aquatic habitats. Aquatic ecological data will be obtained from a review of published information from the FGFWFC and from knowledgeable personnel and academic studies. Existing data will be used to document important interspecific relationships and food chains.

The DEP conducted benthic macroinvertebrate studies in the St. Marks River in the site area during 1995. The field program proposed for this project will be limited to verification of the conditions found in the DEP study. Because of manatee and alligator occurrences in the river, no field fisheries sampling program will be undertaken. Given that the effects on the river system will be positive with development of this project (zero discharge and reduced withdrawals), fisheries field data acquisition needs are not significant enough to warrant use of netting or electroshocking because of the potential risks to these species.

Limited sampling in site aquatic habitats will be conducted to confirm benthic macroinvertebrates present in earlier studies conducted by the City of Tallahassee. This will be done with the use of Hester-Dendy samplers which are artificial substrates. These samplers will be left in the river at selected locations for 25 days and then retrieved. Invertebrates growing on the samplers will be identified to the lowest practicable taxonomic level and counted. Qualitative methods will be used to estimate the extent of use. These studies, together with the existing data, will be used to estimate the relative abundance of important species found and to provide data on habitat quality.

Fisheries use of the river will be determined from consultations with agency personnel and contacts with organizations and institutions, such as Florida State University, which have collections of fish from the river.

The proposed approach to data analysis and impact assessment will be to analyze the data resulting from the literature survey and field studies and formulate a description of the existing aquatic biota, including endangered and threatened species status. The impact assessment will address the effects of construction and operation of the project on the affected aquatic biota, which are expected to be positive due to the reduction of plant withdrawals and wastewater discharges. The results will be presented in Sections 4.4, 5.1 and 5.2 of the SCA.

3.4 TERRESTRIAL AND WETLANDS ECOLOGY

Project impacts to terrestrial and wetland resources will be limited because very little land and no wetlands will be used by the project. The land which will be used has already been disturbed. As a result, only minimal treatment of these issues will be included in the SCA.

In order to be responsive to the SCA guidelines, some terrestrial and wetlands resources data will be compiled from literature surveys and field programs and organized in a baseline description (SCA Section 2.3.6) from which the impacts of the proposed Unit 8 Project can be assessed.

The objective of the literature review is to obtain varied types of ecological information which can be used to develop an existing site and vicinity terrestrial and wetlands ecology data base. This database will be aid in the assessment of any limited effects resulting from the construction and operation of the proposed power plant and associated facilities. Reclaimed water pipeline route and on- or near-site information will include:

- Vegetation descriptions and maps;
- Lists and ecological reports of birds, mammals, reptiles, and amphibians common to the area;
- Wetlands within and adjacent to the power plant site and reclaimed water pipeline;

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- Interspecific relationships and food chains of important species;
- Locations of rare, threatened or endangered species or critical habitats of these species in the project area; and
- Occurrence of pre-existing stresses.

Several data sources will be used in the preparation of the impact assessment as related specifically to wetlands. As a minimum these include soil maps, site surveys, aerial photography and historical maps.

Field inspections of the project area will be conducted. These inspections will be used to update information on the major plant communities and habitat types so that site conditions can be compared with results of previous characterization studies. Additionally, updating of land cover maps for Level III site area land uses/cover greater than five acres in size will be undertaken.

The possible effects of the project on the terrestrial and wetlands resources are limited. The approach to assessing any limited impacts will be to (1) identify the magnitude or the extent of the effect or area affected, (2) estimate the potential of the effect to occur, and (3) determine what portion of the resource would be affected from a local and regional perspective. Results will be presented in Sections 4.4 and 5.8 of the SCA.

3.5 CULTURAL RESOURCES

A number of previously recorded archeological sites exist in close proximity to the City of Tallahassee property on which the Purdom Station is located, and there is a possibility that previously unrecorded cultural resources may be located on the parcel owned by the City of Tallahassee. However, the actual project area associated with the proposed Unit 8 is believed to have undergone extensive prior ground disturbance associated with plant construction and operation. The Florida Division of Historical Resources (DHR) was contacted in 1992 for information on the site. At that time, DHR indicated that it was their opinion "that future development of the facility site would have no effect on historic properties listed, or eligible for listing, in the *National Register of Historic Places*." They further indicated that "[d]evelopment in this portion of the [City of Tallahassee property] would be able to proceed."

Contact will be initiated with the DHR to confirm this earlier opinion and determine whether any additional documentation is necessary to meet agency requirements.

3.6 NOISE

The Purdom Station has been an integral part of the City of St. Marks for more than 40 years. Noise produced by the proposed new generating unit will not be perceived by the town residents as significantly different in character or level. Close coordination between the licensing team and the design engineer will ensure that noise issues are addressed and appropriate mitigation measures are included in the plant design.

A comprehensive environmental noise survey was performed at the Purdom Station in October, 1994. Units 5, 6 and 7 plus both gas turbines were run for the test. Since no significant changes have occurred in St. Marks in terms of new noise sources or noise-sensitive receptors, the results

of the survey are still valid and will provide the basis for the baseline characterization (SCA Section 2.3.8).

There are no applicable noise ordinance limits for the site, but there are several guideline or suggested limits available. The most stringent of these is the EPA's recommended day/night limit (Ldn) of 55 dBA at any residence. Thus, in order to minimize noise impacts, the new unit will be designed such that total noise from the site, including existing noise from Unit 7, will not exceed an Ldn of 55 dBA. Expected noise levels at the nearest residences will be determined through computer modelling using the NoiseCalc model. Source noise levels will be obtained from equipment manufacturers or from noise specifications determined by the design engineer. Potential noise levels at the nearest residences during construction will also be evaluated using a computer model. Construction equipment noise levels will be obtained from the literature. A worst-case impact assessment will be performed by using the types and quantities of equipment in use during the most intensive period of construction. Construction and operation impacts will be discussed in Sections 4.6 and 5.7, respectively.

3.7 LAND USE

Use of the Purdom Station site for a power plant is consistent with the City of St. Marks' Future Land Use Map and zoning. As a result, no plan amendment or rezoning will be required. Existing conditions will be documented in Section 2.2 of the SCA.

In addition to future land use and zoning information, baseline information on the sociopolitical environment will include information on governmental jurisdictions in the area; surrounding land use; and easements, title and agency works.

Maps will be prepared which show governmental jurisdictions within a one-mile radius, and within a five-mile radius of the site at the scales required by DEP guidelines. Land use and land cover information will be mapped using the Florida Land Use and Cover Classification System (FLUCCS), or equivalent, Level II data. In addition, any of the following areas located within a five-mile radius of the site will be identified on a map of 1:126,720 scale:

- National Parks;
- National Forests;
- National Wildlife Refuges;
- National Wilderness Areas;
- National Memorials or Monuments;
- Roadless Area Review and Evaluation Areas (RAREs);
- National Wild and Scenic Rivers;
- Areas of Critical State Concern;
- Conservation and Recreation Lands (CARLs);
- Save Our Rivers Lands;
- State Archaeological Landmarks or Landmark Zones;

Purdom Unit 8

- Properties listed on or nominated to the National Register of Historic Places;
- State Outstanding Florida Waters;
- State Scenic and Wild Rivers;
- Parks;
- Special Management Areas; and
- Major Private Landholdings for Environmental Protection.

A larger scale map (1:24,000) will indicate any of the areas listed above within a one-mile radius of the project site.

The aesthetics of the site are expected to improve. Changes in the appearance of the facility as seen from a key vantage point will be documented using an artist's rendering or photographic simulation.

3.8 TRAFFIC

Baseline traffic data to be collected will include current traffic counts, roadway classifications, current levels of service (LOS), projected traffic data, scheduled improvements, and adopted levels of service. These data will be collected from Wakulla County and the Florida Department of Transportation (DOT). The results of this data gathering effort will be presented in Section 2.2.7 of the SCA.

The impacts of construction on the transportation system will be evaluated based on the size of the workforce, the amount of truck traffic expected, information on occupancy rates of workers' vehicles, the number of shifts expected to be used, and commuting patterns of the workforce. The impact on the area's road network will be evaluated based on data such as current traffic counts, projected traffic counts and the projected number of trips generated during construction of the project.

Trip generation will be based on construction traffic for the construction phase and will be determined using the ITE Trip Generation Manual (latest edition) or other accepted data. The study area boundary will be delineated by the degree of traffic distribution required by typical traffic impact studies in the applicable jurisdiction. Wakulla County typically requires traffic to be traced until the traffic loading is less than three percent of the service volume at the adopted LOS. For example, a 700-vehicle per hour roadway would require trips to be traced from the site until fewer than 21 peak hour trips remain on that particular roadway section. Leon County requires one percent of the capacity to be traced from the site, thus requiring seven trips or more to be accounted for on the same type roadway.

To the extent the existing Purdom workforce is present during construction, they will be added to the daily and peak hour estimates of trips to and from the site. For the operational phase which follows construction, the permanent workforce at the plant is expected to be reduced from pre-construction levels. Therefore, the long-term impact to the roadway system due to the project is expected to be reduced from the current level.

Level of service analyses will be performed based on the Florida DOT LOS Manual. Standard look-up tables will be used unless more detailed analysis becomes necessary. The more detailed analysis will be performed using the computer programs provided with the Florida DOT LOS Manual. Level of service standards will be those identified in the Comprehensive Plan for each jurisdiction. Work programs for the implementing agencies of Florida DOT, Leon County and Wakulla County will be reviewed to determine all planned capital improvements to the area roadway system.

3.9 ASSOCIATED LINEAR FACILITIES

3.9.1 Electric Transmission Line

No new transmission lines are required to be constructed for the project. Only an upgrade of the existing lines connecting the Purdom Station to Tallahassee will be necessary. The upgrade will involve the replacement of the existing conductor with a new, larger diameter conductor. Although certification is unnecessary, SCA Section 6.1 will provide a description of the activities required to make this change and document compliance with Chapter 62-814 F.A.C. regarding electric and magnetic fields. Noise levels generated by the line in both decibel (dB) and A-weighted decibel (dBA) scales will also be presented.

3.9.2 Reclaimed Water Pipeline

The project will entail the construction of a reclaimed water pipeline from the St. Marks Water Treatment Plant to the power plant site. The pipeline will be about 0.9 miles in length.

A general description of the project will be presented. Topics discussed will include:

- Project purpose;
- Termination points;
- Width of right-of-way needed; and
- Pipeline capacity.

Information provided by this discussion will be incorporated into SCA Section 6.2.

The preferred pipeline route will be delineated on a 1:4,800 base map. Major geographic features will be shown on the map including communities and major water courses. Results of these discussions and the map will be presented in SCA Section 6.2.

Pipeline design characteristics will be described, including line capacity and typical pipeline design parameters and geometry. Illustrations of typical pipeline structures will be presented. No new access roads will be needed.

The socio-political environment of the corridor area will also be presented in the SCA within Section 6.2. Easements or title which must ordinarily be obtained from any government agency will be identified. Known scenic, cultural or natural landmarks in the preferred corridor and within one-half mile will be shown on the 1:4,800 scale maps. Text discussions characterizing these areas will be presented. Bio-physical environmental considerations of the corridor area will be presented.

Purdom Unit 8

The quantity of land to be disturbed by construction will be estimated. Typical steps in construction will be discussed, including right-of-way preparation, trench excavation, and installation. Special construction techniques or practices to be employed in sensitive areas will also be identified and described. Potential erosion problems associated with construction activities will be discussed along with mitigation measures which would be used as necessary to prevent water quality degradation.

Descriptions of the types and quantities of solid wastes generated by right-of-way preparation and pipeline construction will be presented. Methods of disposal such as mulching, burning, and site removal will be discussed.

Project construction impacts on ecological resources will be limited because roads and other disturbed areas will be used. If applicable, based on the route proposed for certification, discussions will include terrestrial, wetland, and aquatic ecology impacts on important species. The focus will be on any significant habitat change which may be brought about by clearing of vegetation and pipeline placement. The potential impact of pipeline construction and right-of-way preparation on human populations and their proximity to the preferred corridor will be discussed. General discussions regarding inconveniences to traffic and other local functions will be provided.

3.9.3 Natural Gas Pipeline Lateral

Expansion of the existing natural gas pipeline lateral supporting the site will be permitted by the Florida Gas Transmission Company. Although certification of the existing Florida Gas Transmission right-of-way is unnecessary, SCA Section 6.1 will provide a general description of the anticipated pipeline expansion and its impacts.

4.0 QUALITY ASSURANCE PROGRAM

A Quality Assurance (QA) Program will be designed and implemented to meet the specific needs of the Purdom Unit 8 Project. This QA Program will be developed to establish the guidelines for licensing and field sampling and monitoring activities performed during site certification activities. The program will meet Federal, State, and local requirements. The objectives and elements of the QA Program are summarized below. A detailed QA Program will be developed and expanded as the scope of the technical procedures evolve.

4.1 PROGRAM OBJECTIVES

The QA Program is designed and will be administered to meet the following objectives:

- Ensure that administration of the QA Program is supportive of licensing requirements, yet independent of the project management, thus guaranteeing that QA standards are not compromised when meeting project deadlines or other objectives;
- Ensure that the project team properly follows the established lines of authority and responsibility;
- Ensure that all project personnel are properly qualified to perform their assigned tasks;
- Ensure that data collected in field activities are obtained and documented by proper methods and procedures;
- Ensure that information developed for use in permit and license documents is appropriately prepared, reviewed, and filed;
- Ensure that sample analysis is performed by a laboratory with a DEP-approved Comprehensive QA Plan (the City of Tallahassee analytical laboratory has such a CompQAP); and
- Ensure that site development and engineering activities are conducted in accordance with accepted standards and procedures including reviews, checks, and approvals.

4.2 PROGRAM ELEMENTS

To achieve the stated objectives, the QA Program consists of both comprehensive and project-specific DEP Quality Assurance Plans.

The DEP Quality Assurance Rule (Chapter 62-160, F.A.C.) requires that a Comprehensive QA Plan (CompQAP) describe all sampling and analysis capabilities of an organization which are pertinent to DEP programs and rules. Foster Wheeler Environmental and the City of Tallahassee analytical laboratories both have approved CompQAPs. Raytheon Engineers & Constructors has submitted a CompQAP to DEP Quality Assurance Section and is awaiting approval. A QA Project Plan (QAPP) will be submitted in compliance with Section 62-160.300 (9)(c), F.A.C., which requires a QAPP for sampling and analysis activities for special surface water studies such as those to be conducted during preparation of an SCA. The QAPP will be prepared to reflect limitations and requirements of the PPSA and this POS.

Purdom Unit 8

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APPENDIX A

SITE CERTIFICATION APPLICATION CROSS-REFERENCE

APPENDIX A
SITE CERTIFICATION APPLICATION CROSS-REFERENCE

The following SCA format is based on the 1983 Instruction Guide for Certification Applications DEP Form 62-1.211(1). SCA chapters and sections are cross-referenced below to appropriate POS sections.

<i>SCA Chapter/Section and Title</i>	<i>Cross-Reference to POS Section</i>
1.0 Need for Power and the Proposed Facilities	1.2
2.0 Site and Vicinity Characterization	1.5
2.1 Site and Associated Facilities Delineation	1.5
2.2 Sociopolitical Environment	2.3, 3.7
2.2.1 Governmental Jurisdictions	3.7
2.2.2 Zoning and Land Use Plans	3.7
2.2.3 Demography and Ongoing Land Use	3.7
2.2.4 Easements, Title, Agency Works	3.7
2.2.5 Regional, Scenic, Cultural and Natural Landmarks	3.5, 3.7
2.2.6 Archeological and Historic Sites	3.5, 3.7
2.2.7 Socioeconomics and Public Services	2.3, 3.7, 3.8
2.3 Biophysical Environment	2.0, 3.0
2.3.1 Geohydrology	3.2
2.3.2 Subsurface Hydrology	3.2
2.3.3 Site Water Budget and Area Users	2.2, 3.1
2.3.4 Surficial Hydrology	2.2, 3.1
2.3.5 Vegetation/Land use	2.4, 3.4
2.3.6 Ecology	2.2, 2.4, 3.3, 3.4
2.3.7 Meteorology and Ambient Air Quality	2.1
2.3.8 Noise	3.6
2.3.9 Other Environment Features	3.0
3.0 The Project and Directly Associated Facilities	1.0
3.1 Background	1.5
3.2 Site Layout	1.5.2
3.3 Fuel	1.5.2
3.4 Air Emissions and Controls	1.5.2.2
3.4.1 Air Emission Types and Sources	1.5.2.2
3.4.2 Air Emission Controls	1.5.2.2
3.4.3 Best Available Control Technology	1.5.2.2
3.4.4 Design Data for Control Equipment	1.5.2.2
3.4.5 Design Philosophy	1.5.2.1, 1.5.2.2
3.5 Project Water Use	1.5.2.3
3.5.1 Heat Dissipation System	1.5.2.3
3.5.2 Domestic/Sanitary Wastewater	1.5.2.3
3.5.3 Potable Water Systems	1.5.2.3, 1.5.2.5
3.5.4 Process Water Systems	1.5.2.3, 1.5.2.5

<i>SCA Chapter/Section and Title</i>	<i>Cross-Reference to POS Section</i>
3.6 Chemical and Biocide Waste	1.5.2.5
3.7 Solid and Hazardous Waste	1.5.2.4, 3.1
3.7.1 Solid Waste	1.5.2.3, 3.1
3.7.2 Hazardous Waste	1.5.2.3, 1.5.2.4
3.8 On-Site Drainage System	1.5.2.4
3.9 Materials Handling	1.5.2.4
4.0 Effects on Site Preparation, and Project and Associated Facilities Construction	2.0, 3.0
4.1 Land Impact	2.0, 3.0
4.1.1 General Construction Impacts	2.0, 3.0
4.1.2 Roads	3.8
4.1.3 Flood Zones	2.2, 3.1
4.1.4 Topography and Soils	3.2
4.2 Impact on Surface Water Bodies and Uses	2.2
4.2.1 Impact Assessment	2.2.3, 3.1
4.2.2 Measuring and Monitoring Programs	2.2, 3.1
4.3 Groundwater Impacts	3.2
4.4 Ecological Impacts	2.2, 2.4, 3.3, 3.4
4.5 Air Impact	2.1.3
4.6 Impact on Human Populations	2.3, 3.5, 3.6, 3.7, 3.8
4.7 Impact on Landmarks and Sensitive Areas	3.7
4.8 Impact on Archeological and Historic Sites	3.5
4.9 Special Features	3.7
4.10 Benefits from Construction	2.3, 3.7
4.11 Variances	See Note 1
5.0 Effects on Project Operation	2.0, 3.0
5.1 Effects of the Operation of the Heat Dissipation System	See Note 2
5.1.1 Temperature Effect on Receiving Body of Water	2.2.3
5.1.2 Effects on Aquatic Life	2.2, 3.3
5.1.3 Biological Effects of Modified Circulation	2.2, 3.3
5.1.4 Effects of Offstream Cooling	2.2.3, 3.3
5.1.5 Measurement Program	2.2.3
5.2 Effects of Chemical and Biocide Discharges	See Note 2
5.2.1 Industrial Wastewater Discharges	2.2.3
5.2.2 Cooling Tower Blowdown	2.2.3
5.2.3 Measurement Programs	2.2.3
5.3 Impacts on Water Supplies	2.2, 3.1, 3.2
5.3.1 Surface Water	2.2, 3.1
5.3.2 Groundwater	3.2
5.3.3 Drinking Water	2.2, 3.2
5.3.4 Leachate and Runoff	3.1
5.3.5 Measurement Programs	3.1

Purdom Unit 8

SCA Chapter/Section and Title	Cross-Reference to POS Section
5.4 Solid/Hazardous Waste Disposal Impacts	1.5.2.3, 3.1, 3.2
5.4.1 Solid Waste	1.5.2.3, 3.1, 3.2
5.4.2 Hazardous Waste	3.1, 3.2
5.5 Sanitary and Other Waste Discharges	See Note 2
5.6 Air Quality Impacts	2.1, 2.4, 3.4
5.7 Noise	3.6
5.8 Changes in Non-Aquatic Species Populations	2.2, 3.4
5.9 Other Project Operation Effects	2.0, 3.0
5.10 Archeological Sites	3.5
5.11 Resources Committed	2.0, 3.0
5.12 Variances	See Note 1
6.0 Linear Facilities	3.9
6.1 Electric Transmission Line	3.9.1
6.2 Reclaimed Water Pipeline	3.9.2
6.3 Natural Gas Pipeline Lateral	3.9.3
7.0 Economic and Social Effects of Project Construction and Operation	2.3
7.1 Socioeconomic Benefits	2.3
7.2 Socioeconomic Costs	2.3
7.2.1 Temporary External Costs	2.3
7.2.2 Long-Term External Costs	2.3
8.0 Site and Design Alternatives	See Note 3
9.0 Coordination	See Note 4
10.0 Appendices	
10.1 Federal Permit Applications or Approvals	
10.1.1 316 Demonstrations	See Note 5
10.1.2 NPDES (Stormwater) Application/Permit	See Note 5
10.1.3 Hazardous Waste Disposal Application/Permit	See Note 5
10.1.4 Section 10 or 404 Application/Permit	See Note 6
10.1.5 Prevention of Significant Deterioration Application/Permit	See Note 7
10.1.6 Coastal Zone Management Certifications	See Note 5
10.1.7 Federal Aviation Administration	See Note 8
10.2 Zoning Descriptions	3.7
10.3 Land Use Plan Descriptions	3.7
10.4 Existing State Permits (including NPDES (Industrial))	1.5.3
10.5 Monitoring Programs	2.0, 3.0
10.6 Mathematical Calculations	2.0, 3.0

1. If known at the time of application, any anticipated variance from applicable standards will be discussed in the SCA, with appropriate justification. None are currently anticipated
2. The Purdom Unit 8 Project will not discharge wastewater or cooling water to waters of the State or the U.S. The heat dissipation system is a zero discharge system.

Purdom Unit 8

3. Current project plans do not involve permits or activities which are expected to require an Environmental Impact Statement under the National Environmental Policy Act (NEPA). Therefore, there is no need to present analysis of alternatives required by NEPA, and there will be no such presentations in either this POS or the SCA.
4. A record of government communications will be made and will form the basis of this section of the SCA.
5. Any Federal permit application or approved documentation will be contained in this Appendix. If a particular permit is not required, a statement to that effect will be contained in this Appendix.
6. A Section 404 permit application will be included if any wetland under the jurisdiction of the U.S. Army Corps of Engineers is to be affected. No permitting under Section 10 is anticipated.
7. A Prevention of Significant Deterioration (PSD)/Title V Operating Permit application will be prepared and included as an Appendix to the SCA. Its format and content will be in accordance with DEP guidelines. Information on background air quality, air quality impact assessment techniques, and air pollution control technology, as described in POS Section 2.1 will provide input to the PSD permit application.
8. An FAA Notice of Proposed Construction or Alteration may be required for the proposed stack; if so, a copy of the notice will be included here.



CITY HALL
300 S. ADAMS ST.
TALLAHASSEE, FL
32301-1731
850/891-0010
TDD 1-800/955-8771

SCOTT MADDOX
Mayor
STEVE MEISBURG
Mayor Pro Tem

JOHN PAUL BAILEY
Commissioner
CHARLES E. BILLINGS
Commissioner
DEBBIE LIGHTSEY
Commissioner

ANITA R. FAVORS
City Manager
GARY HERNDON
Interim City Treasurer-Clerk

JAMES R. ENGLISH
City Attorney
SAM M. McCALL
City Auditor

August 17, 2001

FedEx

Mr. Clair H. Fancy, Chief
Bureau of Air Regulation (BAR)
Florida Department of Environmental Protection (FDEP)
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
Mail Station 5505

RECEIVED

AUG 20 2001

BUREAU OF AIR REGULATION

**Re: Performance Testing Results
Unit 8 Combined Cycle Combustion Turbine
Permit No. PSD-FL-239
Sam O. Purdom Generating Station**

Dear Mr. Fancy:

On July 3 and 4, 2001, the City of Tallahassee completed initial performance testing at two separate loads while firing No. 2 fuel oil on the above-referenced emission unit (a nominal 160 MW GE Series MS7FA combustion turbine attached to a non-fired heat recovery steam generator with a nominal 90 MW steam turbine) at the Sam O. Purdom Generating Station located at 667 Port Leon Drive, St. Marks, Wakulla County, Florida. The report (submitted to your office by Air Consulting and Engineering, Inc.) includes results on the visible emissions (Method 9), carbon monoxide (Method 10), and oxides of nitrogen (Method 20) tests that were performed.

The City is continuing the acquiring of additional CEMS fuel oil fire data requested in an August 7, 2001, Department letter signed by Ms. Sandra Veazey to supplement the two-load performance test completed in July 2001. This data will be submitted to your office, once it is available.

Attached, please find a copy of the performance curve developed by General Electric for Unit 8. This curve is being submitted to the Department pursuant to Specific Condition A.2 of the above referenced permit.

If you have any questions regarding this letter, please feel free to contact either myself at (850) 891-5534 or Ms. Jennette Curtis at (850) 891-8850.

Yours Truly,

Robert McGarrah, Superintendent
Electric Production Division

Attachment

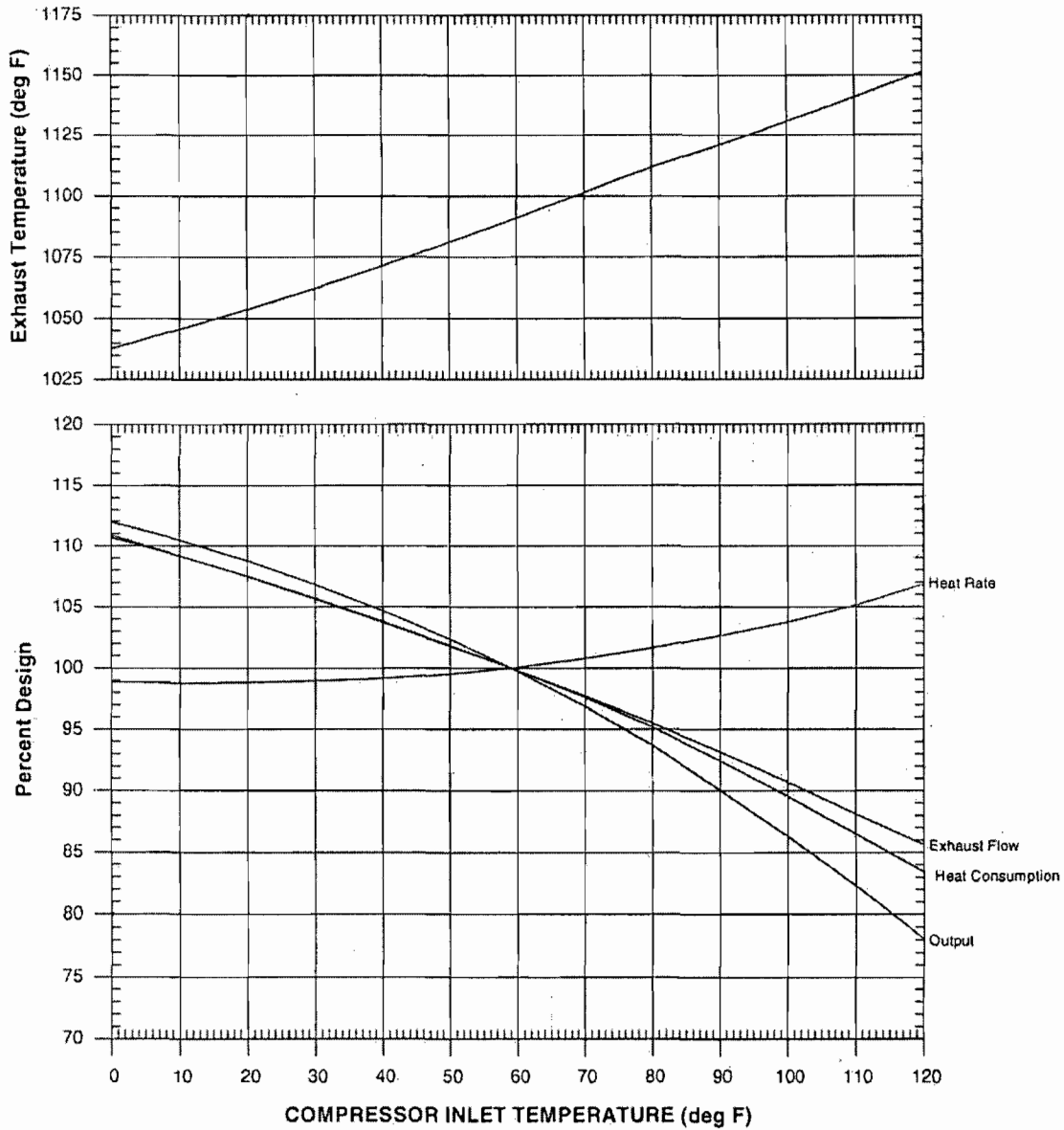
cc: Ms. Mary Jean Yon, FDEP-NW
B. Cowart, COT
G. King, COT
J. Curtis, COT

An All-America City

GENERAL ELECTRIC MODEL PG7241FA GAS TURBINE

Effect of Compressor Inlet Temperature on
Output, Heat Rate, Heat Consumption, Exhaust Flow
And Exhaust Temperature at Baseload

Fuel: Distillate
Combustor: DLN





ELECTRIC OPERATIONS
2602 JACKSON BLUFF RD.
TALLAHASSEE, FL 32304
850/891-5001 OFFICE
850/891-5033 FAX

SCOTT MADDOX
Mayor
STEVE MEISBURG
Mayor Pro Tem

JOHN PAUL BAILEY
Commissioner
CHARLES E. BILLINGS
Commissioner
DEBBIE LIGHTSEY
Commissioner

ANITA R. FAVORS
City Manager
GARY HERNDON
Interim City Treasurer-Clerk

JAMES R. ENGLISH
City Attorney
SAM M. McCALL
City Auditor

June 28, 2001

CERTIFIED MAIL

Mr. Clair H. Fancy, Chief
Bureau of Air Regulation (BAR)
Florida Department of Environmental Protection (FDEP)
2600 Blairstone Road
Tallahassee, Florida 32399-2400
Mail Station 5505

**Re: Notification of Revised Performance Testing Schedule
Unit 8 Combined Cycle Combustion Turbine
Permit No. PSD-FL-239
Sam O. Purdom Generating Station**

RECEIVED
JUN 29 2001
BUREAU OF AIR REGULATION

Dear Mr. Fancy:

The City of Tallahassee submits this letter notifying you of the revised schedule for completion of No. 2 fuel oil performance testing required under Specific Condition D.1 of the above-referenced permit. Originally scheduled for November 16, 2000, and subsequently rescheduled for December 20 and 29, 2000, and January 30, February 8, and May 30, 2001, the City of Tallahassee has tentatively rescheduled the performance testing to begin at approximately 7:30 AM on July 3, 2001, for visible emissions (Method 9), carbon monoxide (Method 10), and oxides of nitrogen (Method 20) on the above-referenced emission unit (a nominal 160 MW GE Series MS7FA combustion turbine attached to a non-fired heat recovery steam generator with a nominal 90 MW steam turbine) at the Sam O. Purdom Generating Station located at 667 Port Leon Drive, St. Marks, Wakulla County, Florida. The most recent attempt at testing failed as a result of operational difficulties that caused the Unit to be kept out of service.

Please note that delays have occurred as a result of difficulties arising during the shakedown period. Although the City believes that the difficulties have been properly addressed, the actual performance test date will continue to be subject to change. We apologize for the delay in submitting this notice to your office. The Unit became fully operational on No. 2 fuel oil yesterday.

If you have any questions regarding this performance testing notification, please feel free to contact either myself at (850) 891-5534 or Ms. Jennette Curtis at (850) 891-8850.

Yours truly,

Robert E. McGarrah, Superintendent
Electric Production Division

cc: Winston A. Smith, EPA Region IV
Martin Costello, FDEP
Angelia Jackson, FDEP
B. Cowart, COT
G. King, COT
J. Curtis, COT

An All-America City



ELECTRIC OPERATIONS
2602 JACKSON BLUFF RD.
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ANITA R. FAVORS
City Manager
GARY HERNDON
Interim City Treasurer-Clerk

JAMES R. ENGLISH
City Attorney
SAM M. McCALL
City Auditor

May 15, 2001

CERTIFIED MAIL

Mr. Clair H. Fancy, Chief
Bureau of Air Regulation (BAR)
Florida Department of Environmental Protection (FDEP)
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
Mail Station 5505

RECEIVED

MAY 16 2001

BUREAU OF AIR REGULATION

**Re: Notification of Revised Performance Testing Schedule
Unit 8 Combined Cycle Combustion Turbine
Permit No. PSD-FL-239
Sam O. Purdom Generating Station**

Dear Mr. Fancy:

The City of Tallahassee submits this letter notifying you of the revised schedule for completion of No. 2 fuel oil performance testing required under Specific Condition D.1 of the above-referenced permit. Originally scheduled for November 16, 2000, and subsequently re-scheduled for December 20 and 29, 2000, and January 30 and February 8, 2001, the City of Tallahassee has tentatively re-scheduled the performance testing to begin at approximately 7:30 AM on May 30, 2001, for visible emissions (Method 9), carbon monoxide (Method 10), and oxides of nitrogen (Method 20) on the above-referenced emission unit (a nominal 160 MW GE Series MS7FA combustion turbine attached to a non-fired heat recovery steam generator with a nominal 90 MW steam turbine) at the Sam O. Purdom Generating Station located at 667 Port Leon Drive, St. Marks, Wakulla County, Florida.

Please note that delays have occurred as a result of difficulties arising during the shakedown period. Although the City believes that the difficulties have been properly addressed, the actual performance test date will continue to be subject to change.

If you have any questions regarding this performance testing notification, please feel free to contact either myself at (850) 891-5534 or Ms. Jennette Curtis at (850) 891-8850.

Yours Truly,

Robert McGarrah, Superintendent
Electric Production Division

cc: Winston A. Smith, EPA Region IV
Martin Costello, FDEP
B. Cowart, COT
G. King, COT
J. Curtis, COT



Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia E. Wetherell
Secretary

March 28, 1997

Mr. John Bunyak
Policy, Planning & Permit Review Branch
NPS-Air Quality Division
Post Office Box 25287
Denver, Colorado 80225

Re: City of Tallahassee
Application for PSD Permit
New Combined Cycle Unit (Unit 8)

Dear Mr. Bunyak:

Enclosed for your review and comment is the above referenced application. Please forward your comments to my attention at the letterhead address.

The applicant has proposed BACT limits for CO and particulate matter. The applicant proposes to avoid PSD for NO_x by committing to a permanent shutdown of two existing gas/oil fired boilers (Units 5 and 6) and the establishment of a facility-wide annual cap for NO_x to limit the net emissions increase (future emissions) to the previous 2 year average rate. The NO_x cap will include annual emissions from two existing combustion turbines (GT1 and GT2), a Subpart Dc auxiliary boiler (currently under construction), an existing gas/oil fired boiler (Unit 7), and the new Unit 8. Although the vendor guarantee for NO_x is 9 ppmvd for Unit 8, the applicant is requesting the limit in Subpart GG only since BACT is avoided.

If you have any questions, please contact me at (904)488-1344 or by electronic mail (COSTELLO_M@DEP.STATE.FL.US).

Sincerely,

Martin Costello, P.E.
New Source Review Section

MC/mc

Enclosures



Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
March 27, 1997

Virginia B. Wetherell
Secretary

Mr. Brian Beals, Section Chief
Air & Radiation Technology Branch
Preconstruction/MAP Section
U.S. EPA- Region IV
100 Alabama Street, SW
Atlanta, Georgia 30303

Re: City of Tallahassee
Application for PSD Permit
New Combined Cycle Unit (Unit 8)

Dear Mr. Beals:

Enclosed for your review and comment is the above referenced application. Please forward your comments to my attention at the letterhead address.

The applicant has proposed BACT limits for CO and particulate matter. The applicant proposes to avoid PSD for NO_x by committing to a permanent shutdown of two existing gas/oil fired boilers (Units 5 and 6) and the establishment of a facility-wide annual cap for NO_x to limit the net emissions increase (future emissions) to the previous 2 year average rate. The NO_x cap will include annual emissions from two existing combustion turbines (GT1 and GT2), a Subpart Dc auxiliary boiler (currently under construction), an existing gas/oil fired boiler (Unit 7), and the new Unit 8. Although the vendor guarantee for NO_x is 9 ppmvd for Unit 8, the applicant is requesting the limit in Subpart GG only since BACT is avoided.

If you have any questions, please contact me at (904) 488-1344 or by electronic mail (COSTELLO_M@DEP.STATE.FL.US).

Sincerely,

Martin Costello, P.E.
New Source Review Section

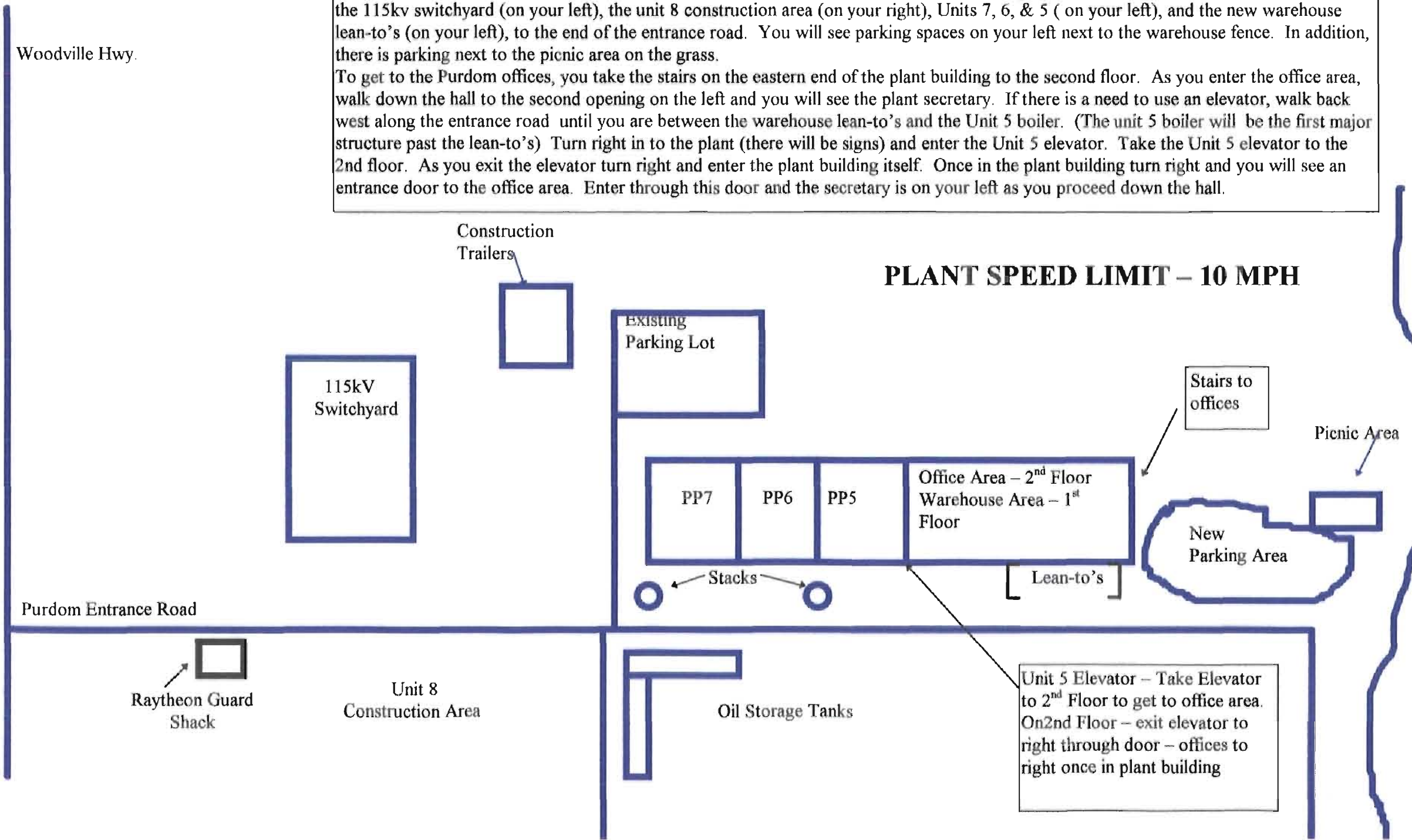
AAL/mc

Enclosures

Purdom Entrance and Parking Instructions: Take Woodville Highway south to St. Marks. Turn left (east) into the Purdom entrance road and continue east on the entrance road. You will approach the Raytheon guard shack on the right. Stop and check in with guard. (If you are in a city vehicle the guard will wave you in, otherwise you will have to register with the guard.) Continue east on the entrance road past the 115kv switchyard (on your left), the unit 8 construction area (on your right), Units 7, 6, & 5 (on your left), and the new warehouse lean-to's (on your left), to the end of the entrance road. You will see parking spaces on your left next to the warehouse fence. In addition, there is parking next to the picnic area on the grass.

To get to the Purdom offices, you take the stairs on the eastern end of the plant building to the second floor. As you enter the office area, walk down the hall to the second opening on the left and you will see the plant secretary. If there is a need to use an elevator, walk back west along the entrance road until you are between the warehouse lean-to's and the Unit 5 boiler. (The unit 5 boiler will be the first major structure past the lean-to's) Turn right in to the plant (there will be signs) and enter the Unit 5 elevator. Take the Unit 5 elevator to the 2nd floor. As you exit the elevator turn right and enter the plant building itself. Once in the plant building turn right and you will see an entrance door to the office area. Enter through this door and the secretary is on your left as you proceed down the hall.

PLANT SPEED LIMIT – 10 MPH

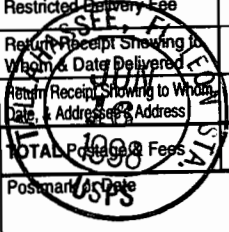


P 265 659 362

US Postal Service
Receipt for Certified Mail
 No Insurance Coverage Provided.
 Do not use for International Mail (See reverse)

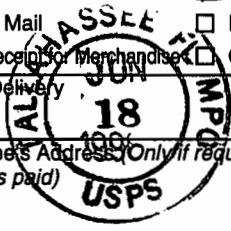
Sent to <i>Mary Sarno</i>	
Street & Number <i># 655</i>	
Post Office, State, & ZIP Code <i>FL 32314</i>	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$ <i>3.23</i>
Postmark & Date	<i>6/16/96</i>

PS Form 3800, April 1995



Is your RETURN ADDRESS completed on the reverse side?

SENDER: ■ Complete items 1 and/or 2 for additional services. ■ Complete items 3, 4a, and 4b: ■ Print your name and address on the reverse of this form so that we can return this card to you. ■ Attach this form to the front of the mailpiece, or on the back if space does not permit. ■ Write "Return Receipt Requested" on the mailpiece below the article number. ■ The Return Receipt will show to whom the article was delivered and the date delivered.		I also wish to receive the following services (for an extra fee): 1. <input type="checkbox"/> Addressee's Address 2. <input type="checkbox"/> Restricted Delivery Consult postmaster for fee.
3. Article Addressed to: <i>M. Mary Sarno, Esq. Hopping, Greer, Sarno & Smith 123 S. Calhoun PO Box 6526 Tallahassee, FL 32314</i>	4a. Article Number <i>P 265 659 362</i>	4b. Service Type <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Certified <input type="checkbox"/> Express Mail <input type="checkbox"/> Insured <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> COD
5. Received By (Print Name) <i>Sam Shaw</i>	7. Date of Delivery <i>18 JUN 1996</i>	
6. Signature (Addressee or Agent) <i>[Signature]</i> <input checked="" type="checkbox"/>	8. Addressee's Address (Only if requested and fee is paid)	Thank you for using Return Receipt Service.



Best Available Copy

H FL 32301
UNITED STATES POSTAL SERVICE



First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

RECEIVED

JUN 19 1983

BUREAU OF
AIR REGULATION

• Print your name, address, and ZIP Code in this box •

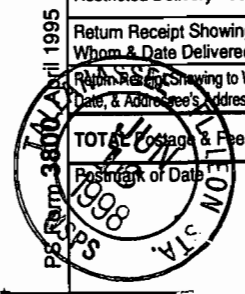
Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation, NSRS
2600 Blair Stone Road, MS 5505
Tallahassee, Florida 32399-2400



P 265 659 361

US Postal Service
Receipt for Certified Mail
 No Insurance Coverage Provided.
 Do not use for International Mail (See reverse)

Sent to <i>Ronald Mowrey</i>	
Street & Number <i>515 N Adams St.</i>	
Post Office, State, & ZIP Code <i>Tallahassee, FL 32301</i>	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$ <i>3.23</i>
Postmark of Date	<i>6/16/98</i>



Is your RETURN ADDRESS completed on the reverse side?	SENDER: ■ Complete items 1 and/or 2 for additional services. ■ Complete items 3, 4a, and 4b. ■ Print your name and address on the reverse of this form so that we can return this card to you. ■ Attach this form to the front of the mailpiece, or on the back if space does not permit. ■ Write "Return Receipt Requested" on the mailpiece below the article number. ■ The Return Receipt will show to whom the article was delivered and the date delivered.	I also wish to receive the following services (for an extra fee): 1. <input type="checkbox"/> Addressee's Address 2. <input type="checkbox"/> Restricted Delivery Consult postmaster for fee.
	3. Article Addressed to: <i>Mr. Ronald A. Mowrey, Esq</i> <i>515 N. Adams St.</i> <i>Tallahassee, FL 32301</i>	4a. Article Number <i>P 265 659 361</i>
5. Received By: (Print Name) 6. Signature: (Addressee or Agent) <i>Ronald Mowrey</i>	7. Date of Delivery <i>6-18-98</i>	8. Addressee's Address (Only if requested and fee is paid)

Thank you for using Return Receipt Service.

17:47 05/18/98
UNITED STATES POSTAL SERVICE



First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

• Print your name, address, and ZIP Code in this box •

RECEIVED
JUN 19 1998
BUREAU OF
AIR REGULATION

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation, NSRS
2600 Blair Stone Road, MS 5505
Tallahassee, Florida 32399-2400

33+2400



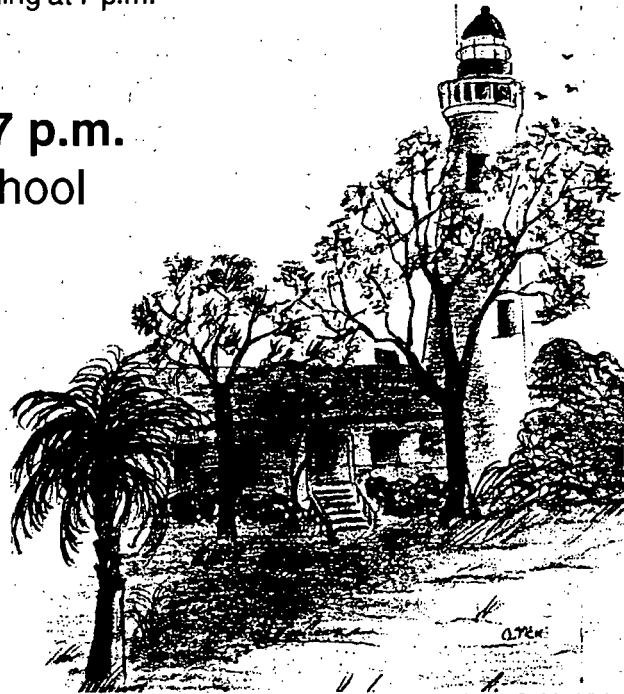


Open House on the Purdom Unit 8 Project

The city of Tallahassee's Electric Utility and the Florida Department of Environmental Protection (DEP) invite you to attend an open house on the proposed electric generating unit at the existing Purdom Generating Station in St. Marks, Florida. City and DEP personnel will be present to receive comments, discuss the project, and answer questions. DEP will also conduct a public meeting about Unit 8's air quality permit beginning at 7 p.m.

Thursday, October 30, 4 - 7 p.m.
Crawfordville Elementary School
69 Arran Road
Crawfordville, Florida

For more information, call the Electric Utility at 891-5585, e-mail purdom8@sc.ci.th.fl.us or visit the Purdom Unit 8 site on the World Wide Web at <http://www.state.fl.us/cityth/purdom8/>. If you have a disability requiring special accommodations, contact the Electric Utility at 891-5585 or Florida Relay Services TDD at 1-800-955-8771.



artwork by Quida Vick

Purdom Meeting To Be Held Oct. 30

The Florida Department of Environmental Protection (DEP) and officials from the City of Tallahassee will be in Crawfordville Thursday, Oct. 30 at the request of the Wakulla County Commission.

State and city officials will discuss the Sam O. Purdom Power Plant in St. Marks and the city's plan to expand the operation. Wakulla officials requested the meeting to get more information about the plant. County commissioners are unhappy with City of Tallahassee officials' lack of desire to compensate the county in lieu of taxes.

The meeting will be held at the Crawfordville Elementary School cafeteria from 7 p.m. until 10 p.m.

Howard Rhodes, director of the Division of Air Resources Management, will introduce DEP staff and will be followed by Jeff Brown

Please turn to Page 14

Purdom

Continued from Page 1

discussing the legal process and the rule provisions for public interaction in the permitting process.

At 7:15 p.m., Al Linero will discuss the construction permitting events that have occurred in the Purdom process. Mary Costello will discuss air permit details and the Best Available Control Technology required on Purdom Unit 8.

At 7:40 p.m., Cleve Holliday will summarize air impacts and the modeling of the plant.

Public comment will be taken at 7:50 p.m. and the meeting will adjourn at 10 p.m. DEP and the City of Tallahassee staff will also be available from 4 p.m. until 7 p.m. to discuss and explain the project on an informal basis.

Wakulla County Commissioners have expressed environmental and monetary concerns over the Purdom project but have not filed a lawsuit against the City of Tallahassee.

A lawsuit filed by a citizens group challenging the project was recently dropped after the city announced plans to do a market survey of other possible energy sources. The plant was originally built in 1952.

to college-bound students who each...
democratic... 1997.

CORRECTION

An incorrect date for an open house on the Purdom Unit 8 power project was given in Tuesday's Democrat.

The City of Tallahassee and the state Department of Environmental Protection are holding an open house on the project Oct. 30 at Crawfordville Elementary School, 69 Arran Road, Crawfordville.

The open house will begin at 4 p.m. City utilities and DEP personnel will be available to answer questions about the project. From 7 to 8 p.m., DEP will take questions specifically on the project's effect on local air quality.

— Democrat staff reports

1 ticket fantasy 5

matched all five numbers on the Georgia

with the numbers with \$173,892. Tickets matching four numbers are worth \$514,752 tickets with numbers are worth

IFICATION

Tallahassee Democrat report did not include the name of Saxton Randall Jones in a list of Tallahassee law-enforcement officers whose names are on the wall of the National Law Enforcement Officers Memorial in Washington, D.C. Jones was a Florida Highway Patrol captain who died May 1, 1995, while cleaning his gun at home. His name was added to the national memorial in May 1997.

CORRECTION

An incorrect date for an open house on the Purdom Unit 8 power project was given in Tuesday's Democrat.

The City of Tallahassee and the state Department of Environmental Protection are holding an open house on the project Oct. 30 at Crawfordville Elementary School, 69 Arran Road, Crawfordville.

The open house will begin at 4 p.m. City utilities and DEP personnel will be available to answer questions about the project. From 7 to 8 p.m., DEP will take questions specifically on the project's effect on local air quality.

— Democrat staff reports

LEON

First kiosks

The first computer kiosk today at the Leon County Courthouse.

The multi-media computers will be on display on the first floor of the courthouse, with a demonstration beginning at 10 a.m.

The interactive kiosk will provide information on Leon County government and services, Florida's state parks, tourist opportunities, and area maps — all at the touch of a finger.

Internet-based, these computers are equipped with the latest technology, allowing easy access and update.

Leon County commissioners Gary Yordon and Rudy Maloy, Wayne Stevens of the Florida Parks and Recreation and Charles Wright of the Leon County Tourist Development Council will be on hand for this morning's opening.

LOTTERY

Tallahassee ticket one of 10 big winners

Ten tickets, including one purchased in Tallahassee, matched all five numbers in

Scott Maddox

■ **Traffic calculations:** Commissioners also delayed a decision on whether to change how the county calculates whether a roadway is congested or not. Several citizens spoke against the proposed change, which proponents say would make it easier for developers to move ahead on their projects. Commissioners wanted the Tallahassee-Leon County planning commission to first weigh in on the decision before taking action

the county's human services budget to supplement the salary for a physician and to pay for medical supplies. The sum is in addition to the \$150,000 in state funds the county already funneled to the clinic this year. Commissioner Bruce Host voted against the measure, saying county health officials had not been consulted about the expenditure.

Commission meetings are televised on Comcast cable Channel 28

POWER PLANT

Hearing is set on Purdom expansion

At the request of Wakulla County, the city of Tallahassee and the Department of Environmental Protection are having an open house on the Purdom Unit 8 project today at Crawfordville Elementary School, 69 Arran Rd., Crawfordville.

The open house will begin at 4 p.m. City utilities and DEP personnel will be available to answer questions about the project. Between 7 and 8 p.m., DEP will take questions specifically on the project's effect on local air quality.

The proposed generator will be built at the Sam O. Purdom Power Plant in St. Marks. It is a 250-megawatt natural gas burning combined cycle unit. DEP recommended approval of Unit 8 last week.

10/1/97

LEON COUNTY COMMISSION

to college-bound students who each...
democratic... 1997.

STATE OF FLORIDA
DEPARTMENT OF
ENVIRONMENTAL PROTECTION
NOTICE OF PUBLIC MEETING

The Department of Environmental Protection gives notice that a public meeting will be held regarding the Department's intent to issue a Prevention of Significant Deterioration of Air Quality Permit (PSD Permit) to the City of Tallahassee for construction of a nominal 250 megawatt (MW) natural gas-fired combustion turbine and heat recovery steam generator at the Purdom Generating Station in St. Marks, Wakulla County.

The meeting will be held at 7:00 p.m. on Thursday, October 30, 1997 at Crawfordville Elementary School, 69 Arran Road, Crawfordville. Department and City of Tallahassee staff will also be available from 4:00 to 7:00 p.m. to discuss and explain the project on an informal basis. The Department will then formally receive oral or written comments on issues related to the proposed PSD permit which was publicly noticed on August 7 in the Tallahassee Democrat.

The Public Notice, Intent to Issue, Technical Evaluation and Preliminary Determination, draft Best Available Control Technology (BACT) determination, and the draft PSD permit are available for review at the Office of the Wakulla County Board of County Commissioners. The same materials and the complete application and official file are available for review during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays at the Bureau of Air Regulation, 111 S. Magnolia Drive, Tallahassee. For additional details contact Marty Costello, P.E. or Cleve Holladay, Meteorologist at (850/488-1344).

A formal Site Certification Hearing covering all environmental disciplines will commence on November 18, 1997 in St. Marks and will be noticed separately.

SEPTEMBER 29, 1997

044604

NOTICE OF CERTIFICATION HEARING ON CITY OF TALLAHASSEE'S PROPOSED POWER PLANT CONSTRUCTION AND OPERATION

DATE: November 18, 1997
TIME: 9:00 a.m. (Public comments commencing at 7:00 p.m.)
PLACE: St. Marks Community Center
46 Shell Island Road
St. Marks, Florida

1. Application No. 97-35 for certification to authorize construction and operation of an electrical power plant in the City of St. Marks, Wakulla County, Florida, is now pending before the State of Florida, Department of Environmental Protection ("Department"), pursuant to the Florida Electrical Power Plant Siting Act, Part II, Chapter 403, Florida Statutes. The application was filed by the City of Tallahassee on March 7, 1997.

2. The City of Tallahassee proposes to construct and operate a new 250 (nominal) megawatt primarily natural gas-fired (with low sulfur oil as the secondary fuel) combined cycle generating unit, to be known as Purdom Unit 8, at its existing Sam O. Purdom Generating Station site in the City of St. Marks, Wakulla County, Florida. The existing Sam O. Purdom Generating Station site is located on 63 acres within the City of St. Marks approximately two miles south of U.S. Highway 98. It is bounded on the west by State Road 363 and on the east by the St. Marks River. Certification also is requested for the existing Sam O. Purdom Generating Station site, existing natural gas and oil-fired generating units at that site, supporting onsite equipment and facilities, offsite reconductoring of two existing transmission lines within Wakulla and Leon Counties, Florida, and a new 0.9-mile reclaimed water pipeline to be constructed from the City of St. Marks Wastewater Treatment Facility to the Purdom Station. Purdom Unit 8 will consist of a combustion turbine/generator, a heat recovery steam generator, and a reheat steam turbine/generator. Other principal features of the new facility will include a mechanical draft cooling tower, a zero discharge wastewater treatment facility, a 200-foot stack, a stormwater retention pond, relocation and upgrading of onsite natural gas facilities, and transfer of the connection of the north end of the existing natural gas lateral pipeline from an existing 30-inch main pipeline to an existing 36-inch main pipeline in the same vicinity.

3. Pursuant to Section 403.508, Florida Statutes, the certification hearing will be held by the Division of Administrative Hearings beginning at 9:00 a.m. on November 18, 1997, at the St. Marks Community Center, 46 Shell Island Road, St. Marks, Florida. This hearing is being held in order to take written and oral testimony and other evidence on the effects of the proposed project and any other matter appropriate to the consideration of the site. Need for the facility has been predetermined by the Public Service Commission at a separate hearing. Pursuant to Sections 403.5055(1), 403.507(3), and 403.508(8), Florida Statutes, any petition for an administrative hearing on a permit to be issued by the Department pursuant to a federally-delegated or approved program will be consolidated with the certification hearing. Members of the public may offer comments on the project on Tuesday, November 18, 1997, commencing at 7:00 p.m.

4. The Department and other state, regional and local agencies have evaluated and prepared reports on the project. The Department has prepared a report on the project, pursuant to Section

403.507(4), Florida Statutes. That report is available for public review at the locations listed below. Certification of the project would allow construction and operation of a new source of air pollution which would consume an increment of air quality resources. The Department's review has resulted in an assessment of the prevention of significant deterioration increment and ambient air quality impacts and a determination of the Best Available Control Technology necessary to control the emission of air pollutants from Purdom Unit 8. Certification of the project by the Governor and Cabinet, sitting as the Power Plant Siting Board, would allow construction and operation subject to the conditions of certification set forth in the final certification order. The application for certification which more specifically depicts the facilities is available for public inspection at the addresses listed below:

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
Office of Siting Coordination
2720 Blair Stone Road
Suite H
Tallahassee, Florida 32399
(904) 487-0472

CITY OF TALLAHASSEE
Office of the Treasurer Clerk
Second Floor - City Hall
300 South Adams Street
Tallahassee, Florida 32301

CITY OF ST. MARKS
City Hall
788 Port Leon Drive
St. Marks, Florida 32355

The business address of the applicant for the project is:

CITY OF TALLAHASSEE
c/o Jennette Curtis, Environmental Administrator
Utility Services, Third Floor, City Hall
300 South Adams Street
Tallahassee, Florida 32301
(850) 891-8850
Fax No. (850) 891-8277

5. Pursuant to Section 403.509(4), Florida Statutes, the City of Tallahassee intends for the proposed reclaimed water pipeline to use or cross over works of the following agencies: City of St. Marks, Florida (wastewater treatment plant site and street rights-of-way); and State of Florida, Department of Transportation (Tallahassee-St. Marks Historic Railroad State Trail and State Road 363). The administrative law judge will receive comments and testimony from the parties, the public and the affected agencies at the certification hearing.

6. Pursuant to Section 403.508(4), Florida Statutes:

(a) Parties to the proceeding shall include: the City of Tallahassee; the Public Service Commission; the Department of Community Affairs; the Game and Fresh Water Fish Commission; the Northwest Florida Water Management District; the Department of Environmental Protection; the Apalachee Regional Plan-

ning Council; the local government; and those who timely intervene in the proceeding.

(b) Any party listed in paragraph (a) other than the Department or the applicant may waive its right to participate in these proceedings. If such listed party fails to file a notice of its intent to be a party on or before the 90th day prior to the certification hearing, such party shall be deemed to have waived its right to be a party.

(c) Upon the filing with the administrative law judge of a notice of intent to be a party by June 10, 1997, the following shall also be parties to the proceedings:

1. Any agency not listed in paragraph (a) as to matters within its jurisdiction.

2. Any domestic non-profit corporation or association formed in whole or in part to promote conservation or natural beauty; to protect the environment, personal health, or other biological values; to preserve historical sites; to promote consumer interests; to represent labor, commercial, or industrial groups; or to promote comprehensive planning or orderly development in the area in which the proposed electrical power plant is to be located.

(d) Notwithstanding paragraph (e), failure of an agency described in subparagraph (c)1. to file a notice of intent to be a party within the time provided herein shall constitute a waiver of the right of the agency to participate as a party in the proceeding.

(e) Other parties may include any person, including those persons enumerated in paragraph (c) who have failed to timely file a notice of intent to be a party, whose substantial interests are being affected and being determined by the proceeding and who timely file a motion to intervene pursuant to Chapter 120, Florida Statutes, and applicable rules. Intervention pursuant to this paragraph may be granted at the discretion of the designated administrative law judge and upon such conditions as he may prescribe any time prior to 30 days before the commencement of the certification hearing.

(f) Any agency, including those whose properties or works are being affected pursuant to Section 403.509(4), Florida Statutes, shall be made a party, upon the request of the Department or the applicant.

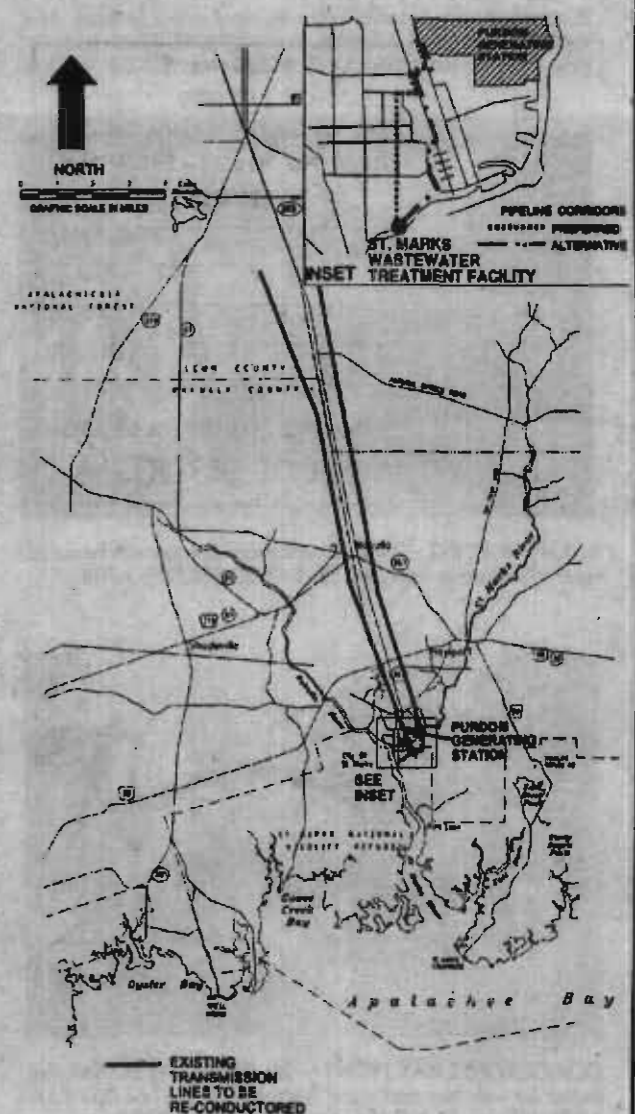
7. When appropriate, any person may be given an opportunity to present oral or written communications to the designated administrative law judge. If the designated administrative law judge proposes to consider such communications, then all parties shall be given an opportunity to cross-examine or challenge or rebut such communications. Written comments by non-parties may be sent to the designated administrative law judge and must be furnished to all parties on or before November 13, 1997. Any prefiled written testimony of the parties must be available for public inspection at the locations listed in paragraph 4, above, and furnished to all parties on or before November 13, 1997.

8. Notices, comments or petitions made prior to the hearing should be made in writing to:

Honorable P. Michael Ruff
Administrative Law Judge
Division of Administrative Hearings
The DeSoto Building
1230 Apalachee Parkway
Tallahassee, Florida 32399-3060
Fax No. (850) 921-6847

Copies of such submittals should be forwarded by mail or telephone facsimile to existing parties, including the Department of Environmental Protection and the City of Tallahassee. The Division of Administrative Hearings case number is 97-001350EPP.

9. Those wishing to intervene in these proceedings, unless appearing on their own behalf, must be represented by an attorney or other person who can be determined to be qualified to appear in administrative hearings pursuant to Chapter 120, Florida Statutes, and applicable rules.



L6/S2/6

Check Sheet

Company Name: City of Tallahassee
Permit Number: 1290001
PSD Number: PSD-FI-239 - PA 97-36
Permit Engineer: Costello -Winn Dixie/Magnolia

Application:

- Initial Application **NOTEBOOKS in File Rm**
- Incompleteness Letters
- Responses
- Waiver of Department Action
- Department Response
- Other

Cross References:

-
-
-

Intent:

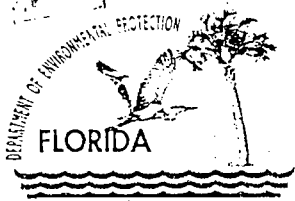
- Intent to Issue
- Notice of Intent to Issue
- Technical Evaluation
- BACT Determination
- Unsigned Permit
- Correspondence with:
 - EPA
 - Park Services
 - Other
- Proof of Publication
 - Petitions - (Related to extensions, hearings, etc.)
 - Waiver of Department Action
 - Other

Final Determination:

- Final Determination
- Signed Permit
- BACT Determination
- Other

Post Permit Correspondence:

- Extensions/Amendments/Modifications
- Other **public meeting transcription by: For The Record**



Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

July 29, 1997

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Jennette Curtis
Environmental Administrator
City of Tallahassee Utility Services
300 South Adams Street
Tallahassee, Florida 32301

Re: Purdom Unit 8, Combustion Turbine and
Heat Recovery Steam Generator
DRAFT Permit No. PSD-FL-239/PA97-36

Dear Ms. Curtis

Enclosed is a revised copy of the "PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT". This replaces the earlier version which was sent on July 1, 1997.

The "PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT" must be published within 30 (thirty) days of receipt of this letter. Proof of publication, i.e., newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

Please submit any written comments you wish to have considered concerning the Department's proposed action to A. A. Linero, P.E., Administrator, New Source Review Section at the above letterhead address. If you have any other questions, please contact Martin Costello or Mr. Linero at 904/488-1344.

Sincerely,

C. H. Fancy, P.E., Chief,
Bureau of Air Regulation

CHF/mc

Enclosures

PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DRAFT Permit No.: PSD-FL-239
Power Plant Siting No. PA97-36

City of Tallahassee Utility Services
Purdom Generating Station Unit 8
Wakulla County

The Department of Environmental Protection (Department) gives notice of its intent to issue a permit for the Prevention of Significant Deterioration (PSD permit) to the City of Tallahassee for the Purdom Generating Station proposed Unit 8 located in the City of St. Marks, Wakulla County. A Best Available Control Technology (BACT) determination was conducted for particulate matter (PM/PM₁₀), sulfur dioxide (SO₂), nitrogen oxides (NO_x) and carbon monoxide (CO) pursuant to Rule 62-212.400, F.A.C. and 40 CFR 52.21. The applicant's name and address are City of Tallahassee Utility Services, 300 South Adams Street, Tallahassee, FL 32301

The City of Tallahassee has applied to construct Unit 8, a nominal 250 megawatt (MW) combined cycle combustion turbine and heat recovery steam generator to meet its system needs and replace existing conventional steam generating Units 5 and 6. Emissions control will be accomplished by dry low NO_x burners (gas) and water injection (diesel) and primary use of natural gas, an inherently clean fuel. A new 200 foot stack and a cooling tower will be added to the facility for Unit 8.

Other existing units at the plant consist of Unit 7, a nominal 44 MW steam boiler fired by natural gas and/or fuel oil, two older combustion turbines with a nominal rating of 12.3 MW each and a small auxiliary steam boiler fired by natural gas. The City has requested a facility-wide emissions cap for nitrogen oxides (NO_x) and sulfur dioxide (SO₂) to ensure that no increase in these emissions will occur once Unit 8 is constructed. Therefore in the future, NO_x and SO₂ emissions from the facility, including Unit 8, will be less than or equal to these emissions before the addition of Unit 8. Electrical output from this facility will be about three times higher than the current level with the addition of Unit 8.

Total facility-wide annual emissions including those from the project are summarized below:

Pollutants	Current Actual	Future Estimated Emissions	Net Increase
	ton/yr	ton/yr	ton/yr
PM ₁₀	10.7	59.0	48.3
SO ₂	80.0	80.0	0
NO _x	467.0	467.0	0
CO	66.0	193.0	127.0

An air quality impact analysis was conducted. Emissions from the facility will not significantly contribute to or cause a violation of any state or federal ambient air quality standards. The maximum predicted PSD Class II increments of NO₂, SO₂, and PM₁₀ consumed by all sources in the area, including this project, will be as follows:

<u>PSD Class II Increment Consumed (mg/m³)</u>	<u>Allowable Increment (mg/m³)</u>	<u>Percent Increment Consumed</u>
PM₁₀		
24-hour	30	11
Annual	17	2
SO₂		
3-hour	512	3
24-hour	91	3
Annual	20	0
NO₂		
Annual	25	25

The maximum predicted PSD Class I increments of NO₂, SO₂, and PM₁₀ in the St. Marks National Wilderness Area and the Bradwell Bay National Wilderness Area consumed by all sources in the area, including this project, will be as follows:

<u>PSD Class I Increment Consumed (mg/m³)</u>	<u>Allowable Increment (mg/m³)</u>	<u>Percent Increment Consumed</u>
PM₁₀		
24-hour 0.73	8	9
Annual 0.16	4	4
SO₂		
3-hour 16.9	25	68
24-hour 4.9	5	98
Annual 0.0	2	0
NO₂		
Annual 0.91	2.5	36

The Department will issue the FINAL Permit, in accordance with the conditions of the DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days from the date of publication of this Notice. Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

The issuance of this PSD permit is being coordinated with a certification under the Power Plant Siting Act (Sections 403.501-519, Florida Statutes). If a petition for an administrative hearing on the preliminary determination and proposed PSD permit is filed by a substantially affected person, that hearing shall be consolidated with the certification hearing, as provided under Section 403.507(3), Florida Statutes.

The Department will issue FINAL Permit with the conditions of the DRAFT Permit unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. Mediation under Section 120.573 is not available for this Draft Permit.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 904/488-9370, fax: 904/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the Department's action or proposed action addressed in this notice of intent.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice of intent. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida, 32301
Telephone: 850/488-1344
Fax: 850/922-6979

Department of Environmental Protection
NW District Office
160 Government Center
Pensacola, Florida 32501
Telephone:(850) 444-8300
Fax: :(850) 444-8417

The complete project file includes the application, technical evaluations, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 904/488-1344, for additional information.

In the Matter of an
Application for Permit by:

City of Tallahassee Utility Services
300 South Adams Street
Tallahassee, FL 32301

DRAFT Permit No.: PSD-FL-239
Power Plant Siting: PA97-36
Purdum Generating Station
Wakulla County

INTENT TO ISSUE PSD PERMIT

The Department of Environmental Protection (Department) gives notice of its intent to issue a permit for the Prevention of Significant Deterioration (copy of DRAFT PSD Permit attached) for the proposed project, detailed in the application specified above and the attached Technical Evaluation and Preliminary Determination, for the reasons stated below.

The applicant, the City of Tallahassee, applied on March 17, 1997 to the Department for a PSD permit and Siting Certification to construct and operate a 250 megawatt combustion turbine and heat recovery steam generator for its Purdom Generating Station located at 667 Port Leon Drive, St. Marks, Wakulla, County.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-212. The above actions are not exempt from permitting procedures. The Department has determined that a PSD permit is required for the proposed work.

The Department intends to issue this PSD permit based on the belief that reasonable assurances have been provided to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C.

Pursuant to Section 403.815, F.S., and Rule 62-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed "PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT". The notice shall be published one time only within 30 (thirty) days in the legal advertisement section of a newspaper of general circulation in the area affected. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. Where there is more than one newspaper of general circulation in the county, the newspaper used must be one with significant circulation in the area that may be affected by the permit. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 904/488-1344; Fax 904/ 922-6979) within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit pursuant to Rule 62-103.150 (6), F.A.C.

The Department will issue the FINAL Permit, in accordance with the conditions of the enclosed DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days from the date of publication of "PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT." Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S., or a party requests mediation as an alternative remedy under Section 120.573 F.S. before the deadline for filing a petition. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for petitioning for a hearing are set forth below, followed by the procedures for requesting mediation.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 904/488-9730, fax: 904/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition (or a request for mediation, as discussed below) within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the action or proposed action addressed in this notice of intent.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice of intent. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A person whose substantial interests are affected by the Department's proposed permitting decision, may elect to pursue mediation by asking all parties to the proceeding to agree to such mediation and by filing with the Department a request for mediation and the written agreement of all such parties to mediate the dispute. The request and agreement must be filed in (received by) the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, by the same deadline as set forth above for the filing of a petition.

A request for mediation must contain the following information: (a) The name, address, and telephone number of the person requesting mediation and that person's representative, if any; (b) A statement of the preliminary agency action; (c) A statement of the relief sought; and (d) Either an explanation of how the requester's substantial interests will be affected by the action or proposed action addressed in this notice of intent or a statement clearly identifying the petition for hearing that the requester has already filed, and incorporating it by reference.

The agreement to mediate must include the following: (a) The names, addresses, and telephone numbers of any persons who may attend the mediation; (b) The name, address, and telephone number of the mediator selected by the parties, or a provision for selecting a mediator within a specified time; (c) The agreed allocation of the costs and fees associated with the mediation; (d) The agreement of the parties on the confidentiality of discussions and documents introduced during mediation; (e) The date, time, and place of the first mediation session, or a deadline

for holding the first session, if no mediator has yet been chosen; (f) The name of each party's representative who shall have authority to settle or recommend settlement; and (g) The signatures of all parties or their authorized representatives.

As provided in Section 120.573 F.S., the timely agreement of all parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57 F.S. for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons whose substantial interests will be affected by such modified final decision of the Department have a right to petition for a hearing only in accordance with the requirements for such petitions set forth above. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under Sections 120.569 and 120.57 F.S. remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action and electing remedies under those two statutes.

In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2) F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Executed in Tallahassee, Florida.

C. H. Fancy, P.E. 7/1
for C. H. Fancy, P.E., Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this INTENT TO ISSUE PSD PERMIT (including the PUBLIC NOTICE, Technical Evaluation and Preliminary Determination, Draft BACT Determination, and the DRAFT permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 7-1-97 to the person(s) listed:

- Ms. Jennette Curtis, City of Tallahassee *
- Mr. Darrel Graziani, P.E.
- Mr. Brian Beals, EPA
- Mr. John Bunyak, NPS
- Mr. Ed Middleswart, NWD
- Mr. Buck Oven, DEP

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52(7), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Kirk Ober 7-1-97
(Clerk) (Date)

**TECHNICAL EVALUATION
AND
PRELIMINARY DETERMINATION**

City of Tallahassee Utility Services

**Purdom Generating Station Unit 8
250 Megawatt Combustion Turbine and
Heat Recovery Steam Generator
Wakulla County**

Permit No. PSD-FL-239 / PA 97-36

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation

July 1, 1997

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

1. APPLICATION INFORMATION

1.1 *Applicant Name and Address*

City of Tallahassee Utility Services
300 South Adams Street
Tallahassee, FL 32301

Authorized Representative

Ms. Jennette Curtis, Environmental Administrator

1.2 *Reviewing and Process Schedule*

03-17-97	Date of Receipt of Application
04-21-97	Bureau of Air Regulation Preliminary Sufficiency Review
05-01-97	Department's Sufficiency Review
05-07-97	COT letter response to Bureau's Sufficiency Review
07-01-97	Intent Issued

2. FACILITY INFORMATION

2.1 *Facility Location:*

The Sam O. Purdom Generating Station is located on the north side of St. Marks, in Wakulla county. This site is approximately 0.7 kilometers Northeast of the Saint Marks Wilderness Area, a Class 1 PSD Area. The UTM: coordinates of this facility (the stack for Unit 8) are Zone 16 ; 769.611 km E ; 3339.767 km N.

2.2 *Standard Industrial Classification Code (SIC)*

Major Group No.	49
Group No.	11

2.3 *Facility Category*

The Purdom Generating Station is classified as a major air pollutant emitting facility. Air pollutant emissions are over 100 TPY for nitrogen oxides (NO_x) and carbon monoxide (CO).

This facility is on the list of the 28 Major Facility Categories, Table 62-212.400-1. This facility is also classified as a Title V facility.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

3. PROJECT DESCRIPTION

The City of Tallahassee plans to install a new combined cycle combustion turbine system, Unit 8, at the existing Purdom facility consisting of a 160 MW (nominal rating) GE MS723 1FA with DLN-2 dry low NO_x burners (Unit 8) and a nonfired heat recovery steam generator (HRSG) with a nominal 90 MW steam turbine. The compressor inlet air will be conditioned by an evaporative cooler when needed. The turbine will be started using an electric motor. A new 200 foot stack and a cooling tower will be added to the facility for Unit 8.

Unit 8 will be located at the city's Sam O. Purdom Generating Station in St. Marks, Wakulla County. Existing steam generating units 5 and 6 will be permanently shut down once Unit 8 has completed the initial performance test. Other existing units at the plant consist of Unit 7, a pre-NSPS boiler with a nominal rating of 44 MW fired by natural gas, and residual fuel oil or distillate fuel oil, two pre-NSPS distillate fuel oil or natural gas fired combustion turbines with a nominal rating of 12.5 MWs each (GT1 and GT2), and a Subpart Dc auxiliary steam boiler fired by natural gas.

4. PROCESS DESCRIPTION

Unit 8 is a combined cycle combustion turbine which will primarily fire natural gas to power an electrical generator rated at 160 MWs. Steam generated in the HRSG will power a steam turbine which will drive a second electrical generator rated at 90 MWs (see attached figure 2-1).

5. RULE APPLICABILITY

The proposed project is subject to preconstruction review requirements under the provisions of Chapter 403, Florida Statutes, and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.).

This facility is located in Wakulla county, an area designated as attainment for all criteria pollutants in accordance with Rule 62-204.360, F.A.C. The proposed project is subject to review under Rule 62-212.400., F.A.C., Prevention of Significant Deterioration (PSD), because the potential emission increases for PM/PM₁₀, NO_x, SO₂, and CO exceed the significance emission rates given in Chapter 62-212, Table 62-212.400-2, F.A.C.

This PSD review consists of a determination of Best Available Control Technology (BACT) for PM/PM₁₀, CO, NO_x, and SO₂ and an analysis of the air quality impact of the proposed project's impacts on soils, vegetation and visibility; along with air quality impacts resulting from associated commercial, residential and industrial growth. This project will also be reviewed and regulated pursuant to the Power Plant Siting Act requirements.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

The emission units affected by this PSD permit shall comply with all applicable provisions of the Florida Administrative Code (including applicable portions of the Code of Federal Regulations incorporated therein) and, specifically, the following Chapters and Rules:

Chapter 62-4	Permits.
Rule 62-204.220	Ambient Air Quality Protection
Rule 62-204.240	Ambient Air Quality Standards
Rule 62-204.260	Prevention of Significant Deterioration Increments
Rule 62-204.360	Designation of Prevention of Significant Deterioration Areas
Rule 62-204.800	Federal Regulations Adopted by Reference
Rule 62-210.300	Permits Required
Rule 62-210.350	Public Notice and Comments
Rule 62-210.370	Reports
Rule 62-210.550	Stack Height Policy
Rule 62-210.650	Circumvention
Rule 62-210.700	Excess Emissions
Rule 62-210.900	Forms and Instructions
Rule 62-212.300	General Preconstruction Review Requirements
Rule 62-212.400	Prevention of Significant Deterioration
Rule 62-213	Operation Permits for Major Sources of Air Pollution
Rule 62-214	Requirements For Sources Subject To The Federal Acid Rain Program
Rule 62-296.320	General Pollutant Emission Limiting Standards
Rule 62-297.310	General Test Requirements
Rule 62-297.401	Compliance Test Methods
Rule 62-297.520	EPA Continuous Monitor Performance Specifications

6. SOURCE IMPACT ANALYSIS

6.1 *Emission Limitations*

The proposed Purdom Unit 8 will emit the following PSD pollutants (Table 212.400-2): particulate matter, sulfur dioxide, nitrogen oxides, volatile organic compounds, carbon monoxide, sulfuric acid mist, and negligible quantities of fluorides, beryllium, mercury and lead. The permitted allowable emissions for this Purdom Unit 8 are summarized in the BACT (Tables 1-1, Air Pollutant Standards and Terms and the compliance procedures are summarized in Table 1-2 Compliance Requirements).

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

6.2 Emission Summary

Table 1 PSD Applicability Summary

Pollutants	Current Actual	Future Estimated Emissions	Net Increase	PSD Significant Level
	ton/yr	ton/yr	ton/yr	ton/yr
PM	10.7	59.0	48.3	25
PM10	10.7	59.0	48.3	15
SO ₂	80.0	80.0	0**	0*
NO _x	467.0	467.0	0**	0*
CO	66.0	193.0	127.0	0*
Ozone(VOC)	2.8	14.7	11.9	40
Sulfuric Acid Mist	3.0	8.6	5.6	7
Fluorides	0.08	1.64	1.56	3
Total Reduced Sulfur	N/A	N/A	N/A	10
Mercury	0.0020	0.0024	0.0004	0.1
Beryllium	0.00052	0.00030	0.00022	0.0004
Lead	0.091	0.011	0.080	0.6

Footnotes:

Several modeling scenarios were evaluated and the above table represents the worst case emission rates while maintaining emissions within the emissions cap for NO_x and SO₂.

N/A - means no emissions expected or no emissions information available.

*Due to the proximity to the St. Marks Class I Area, lower criteria apply for those pollutants with a maximum projected 24-hour average impact of 1.0 microgram per cubic meter or more on the Class I Area.

**Net emissions increase will be limited to zero by the annual emissions cap for these pollutants. The netting procedure in 62-212.400(2)(d) F.A.C. results in a net emissions increase which exceeds the levels in Table 212.400-2 and therefore PSD requirements apply for these pollutants.

6.3 Control Technology Review

The emission control technology for Unit 8 will consist of a water injection system/dry low NO_x burner system to control NO_x emissions when firing fuel oil and natural gas respectively. Computer controlled and monitored systems on the combustion turbine will assist in maintaining good combustion practices to minimize products of incomplete combustion (CO, PM/PM₁₀, VOC). Low sulfur fuels will be used to keep SO₂ and sulfuric acid mist emissions at low levels. Particulate matter from the cooling tower will be minimized using drift eliminators.

The BACT document is included as a separate document (see Appendix BD)

6.3.1 Nitrogen Oxides (NO_x)

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

The city evaluated the use of Selective Catalytic Reduction (SCR) control technology as the top control option. SCR was rejected as BACT due to several factors including cost, energy impacts, and environmental considerations. Nitrogen Oxides (NO_x) emissions will be controlled by using GE's DLN-2 which is a second generation dry low NO_x burner technology for the high firing temperature frame units. The firing temperature on the Frame 7FA combustion turbine is 2400 F. When firing natural gas, the combustor operates in a diffusion mode at low loads (less than 50% of capacity) and in a premixed mode at high loads. When firing fuel oil, the combustors operate in a diffusion mode at all loads and diluent injection (water) is used to control NO_x formation. The DLN-2 control system regulates fuel distribution to the primary, secondary, tertiary and quaternary fuel systems for each of the five combustors. As the combustion turbine is started and operated through the full range, the diffusion, piloted premix, and premix flames are established by changing the distribution of fuel flow in the combustors. Fuel and air flow to the combustors are controlled by GE's Speedtronic control system. GE's Mark IV control system will be used to continuously maintain the NO_x concentration in the exhaust at the specified level throughout the range of loads and ambient conditions. This system receives inputs from a compressor inlet temperature and humidity sensor, load sensors, speed sensors, and ambient pressure sensors.

6.3.2 NO_x Averaging Time

Section 403.0872(13), Florida Statutes was enacted in 1994 and states that for emission units that are subject to continuous monitoring requirements under 42 U.S.C. sections 7661-7661f or 40 CFR Part 75, compliance with nitrogen oxides emission limits shall be demonstrated based on a 30-day rolling average, except as specifically provided by 40 CFR Parts 60 or 76. The Department amended the following rule to clarify the applicability of this statute for pre-NSPS boilers:

62-296.405 Fossil Fuel Steam Generators with more than 250 million Btu per Hour Heat Input.
(1) Existing Emissions Units....

(e) Test Methods and Procedures...

4. For emission units not subject to nitrogen oxides continuous monitoring requirements, the test methods for nitrogen oxides emissions shall be EPA Methods 7, 7A, or 7E, incorporated and adopted by reference in Chapter 62-297, F.A.C. Four grab samples at 15 minute intervals (±2 min.) per run shall be required for EPA Methods 7 and 7A. For emission units that are subject to continuous monitoring requirements under 42 U.S.C. sections 7661-7661f or 40 CFR Part 75, compliance with nitrogen oxides emission limits shall be demonstrated based on a 30-day rolling average, except as specifically provided by 40 CFR Parts 60 or 76.

No other rules have been changed to incorporate this statute. The applicability of that statute to Unit 8 is uncertain because this unit has a NO_x emission limit under 40 CFR part 60 (NSPS). Unit 8 is an NSPS unit subject to the continuous monitoring requirements under the Acid Rain Program. It is also not clear at this time whether this statute was intended to apply more broadly than to the pre-NSPS boilers regulated under Rule 62-296.405 F.A.C.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

The Department agreed to allow the city to determine compliance with nitrogen oxide emission limits based on a 30-day rolling average in this case due to three other factors: 1) the city has committed that there would be no increase in emissions over past actual levels using a facility wide NO_x cap; 2) the emission rate on a 30-day basis is so low that there is reasonable assurance that there will be no extended periods during which emissions will be high on a short term basis; and 3) the facility is located over one hundred miles from the nearest ozone maintenance area and therefore shorter averaging times are less important to avoid aggravating ozone formation from NO_x and other precursors.

6.3.3 Sulfur Dioxide (SO₂)

Sulfur dioxide (and sulfuric acid mist) will be controlled by firing low sulfur fuels. Only natural gas or distillate fuel oil with a maximum sulfur content of 0.05% by weight will be fired. These fuels have the lowest sulfur levels of any commercially available fuels.

6.3.4 Carbon Monoxide (CO)

An oxidation catalyst was evaluated as the top control option but was rejected as BACT due to several considerations including cost and energy impacts. Carbon monoxide (CO) will be controlled by proper tuning of the dry low NO_x burner system and good combustion practices. Operation of the dry low NO_x burner system will be optimized in order to minimize CO emissions while keeping NO_x emissions as low as practicable. Low load operation will result in the highest levels of CO emissions. The BACT emission limit for CO was set at the level which could be achieved for worst case operation i.e., low load operation. According to GE's data, operation at higher loads should result in CO emissions which are at or below 10 ppmvd when firing natural gas.

6.3.5 Particulate Matter (PM/PM₁₀)

The emission control technology for PM/PM₁₀ will be good combustion practices and use of only low sulfur, and low ash content fuels including natural gas and distillate fuel oil containing no more than 0.05% sulfur by weight.

6.4 Air Quality Analysis

6.4.1 Introduction

The proposed project will increase emissions of four pollutants at levels in excess of PSD significant amounts: SO₂, PM/PM₁₀, CO and NO_x. The air quality impact analyses required by the PSD regulations for these pollutants include:

- * An analysis of existing air quality;
- * A significant impact analysis;

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

- * A PSD increment analysis for SO₂, PM₁₀ and NO_x;
- * An Ambient Air Quality Standards (AAQS) analysis, and
- * An analysis of impacts on soils, vegetation, and visibility and of growth-related air quality modeling impacts.

The analysis of existing air quality generally relies on preconstruction monitoring data collected with EPA-approved methods. The significant impact, PSD increment, and AAQS analyses depend on air quality dispersion modeling carried out in accordance with EPA guidelines.

Based on the required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed herein, will not cause or significantly contribute to a violation of any AAQS or PSD increment. However, the following EPA-directed stack height language is included: "In approving this permit, the Department has determined that the application complies with the applicable provisions of the stack height regulations as revised by EPA on July 8, 1985 (50 FR 27892). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D.C. Circuit in *NRDC v. Thomas*, 838 F. 2d 1224 (D.C. Cir. 1988). Consequently, this permit may be subject to modification if and when EPA revises the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators." A discussion of the required analyses follows.

6.4.2 Analysis of Existing Air Quality and Determination of Background Concentrations

Preconstruction ambient air quality monitoring is required for all pollutants subject to PSD review unless otherwise exempted or satisfied. This monitoring requirement may be satisfied by using previously existing representative monitoring data, if available. An exemption to the monitoring requirement may be obtained if the maximum air quality impact resulting from the projected emissions increase, as determined by air quality modeling, is less than a pollutant-specific de minimus concentration. In addition, if an acceptable monitoring method for the specific pollutant has not been established by EPA, monitoring may not be required.

If preconstruction ambient monitoring is exempted, determination of background concentrations for PSD significant pollutants with established AAQS may still be necessary for use in any required AAQS analysis. These concentrations may be established from the required preconstruction ambient air quality monitoring analysis or from previously existing representative monitoring data. These background ambient air quality concentrations are added to pollutant impacts predicted by modeling and represent the air quality impacts of sources not included in the modeling.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

The table below shows that SO₂, PM₁₀, NO₂ and CO impacts from the project are predicted to be less than the de minimus levels; therefore, preconstruction ambient air quality monitoring is not required for these pollutants.

**Maximum Project Air Quality Impacts for Comparison
to the De Minimus Ambient Level.**

Pollutant	Averaging Time	Maximum Predicted Impact (ug/m ³)	Impact Greater Than De Minimus?	De Minimus Level(ug/m ³)
SO ₂	24-hour	0.02	NO	13
PM ₁₀	24-hour	6.5	NO	10
CO	8-hour	5.4	NO	575
NO ₂	Annual	6.1	NO	14

However, previously existing representative monitoring data from SO₂, PM₁₀, NO₂ and CO monitors in North Florida were used to establish background concentrations for use in the AAQS analysis. These values are shown in the following table.

Background Concentrations for Use in AAQS Analysis

Pollutant	Averaging Time	Background Concentration (ug/m ³)
SO ₂	Annual	9
	24-hour	71
	3-hour	183
PM ₁₀	Annual	22.4
	24-hour	47
CO	8-hour	5290
	1-hour	8050
NO _x	Annual	14

6.4.3 Models and Meteorological Data Used in Significant Impact, PSD Increment and AAQS Analyses

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

The EPA-approved Industrial Source Complex Short-Term (ISCST3) dispersion model was used to evaluate the pollutant emissions from the proposed project and other existing major facilities. The model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area, and volume sources. The model incorporates elements for plume rise, transport by the mean wind, Gaussian dispersion, and pollutant removal mechanisms such as deposition. The ISCST3 model allows for the separation of sources, building wake downwash, and various other input and output features. A series of specific model features, recommended by the EPA, are referred to as the regulatory options. The applicant used the EPA recommended regulatory options in each modeling scenario. Direction-specific downwash parameters were used for all sources for which downwash was considered. The stacks associated with this project all satisfy the good engineering practice (GEP) stack height criteria.

Initially, the applicant conducted preliminary modeling for the purpose of determining the worst case fuel/load/temperature scenarios for each applicable averaging time. Preliminary modeling runs were conducted using one year of meteorological data at three ambient temperatures (95°F, 59°F and 20°F) and three combustion turbine loads (100%, 75% and 50%) for both natural gas and Number 2 (0.05% sulfur content) diesel fuel oil. Thus, there were a total of 18 preliminary modeling runs conducted. As a result of these runs, the applicant determined that the 20°F at 50% load fuel oil combinations produced the "worst case" predicted ground-level ambient air quality impacts for the short-term averaging periods (1-hour, 3-hour, 8-hour and 24-hour) for all pollutants. The annual average "worst case" predicted ground-level ambient air quality impacts were determined to occur with the 59°F and 100% load fuel oil/natural gas mixed combination (1735 hours per year fuel oil/7025 hours per year natural gas).

Meteorological data used in the ISCST3 model for all other but the preliminary "worst case" determination modeling consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from the National Weather Service (NWS) stations at Tallahassee, Florida (surface data) and Apalachicola, Florida (upper air data). The 5-year period of meteorological data was from 1985 through 1989. These NWS stations were selected for use in the study because they are the closest primary weather stations to the study area and are most representative of the project site. The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling.

Since five years of data were used in ISCST3, the highest-second-high (HSH) short-term predicted concentrations were compared with the appropriate AAQS or PSD increments. For the annual averages, the highest predicted yearly average was compared with the standards. For determining the project's significant impact area in the vicinity of the facility and if there are significant impacts from the project on any PSD Class I area, both the highest short-term predicted concentrations and the highest predicted yearly averages were compared to their respective significant impact levels.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

6.4.4 Significant Impact Analysis

Initially, the applicant conducted modeling using only the proposed project's worst case emission scenario for each pollutant and applicable averaging time. A total of 632 receptors were placed along the site boundary and within 10 km of the facility, which is located in a PSD Class II area. A total of 68 receptors were placed in and along the boundary of the St. Marks National Wilderness Area (NWA) and a total of 18 receptors were placed in and along the boundary of the Bradwell Bay National Wilderness Area (NWA). Both of these areas are PSD Class I areas. They are located approximately 0.7 km and 28 km, respectively, from the project at their closest points. For each pollutant subject to PSD and also subject to PSD increment and/or AAQS analyses, this modeling compared maximum predicted impacts due to the project with PSD significant impact levels to determine whether significant impacts due to the project were predicted in the vicinity of the facility or in the two Class I areas. The tables below show the results of this modeling. The radius of significant impact, if any, for each pollutant and applicable pollutant averaging time is also shown in the tables below.

**Maximum Project Air Quality Impacts for Comparison
to the PSD Class II Significant Impact Levels in the Vicinity of the Facility.**

Pollutant	Averaging Time	Maximum Predicted Impact (ug/m ³)	Significant Impact Level (ug/m ³)	Significant Impact?	Radius of Significant Impact (km)
SO ₂	Annual	0.024	1	NO	NONE
	24-hour	0.023	5	NO	NONE
	3-hour	0.051	25	NO	NONE
PM ₁₀	Annual	0.35	1	NO	NONE
	24-hour	6.5	5	YES	0.3
CO	8-hour	5.1	500	NO	NONE
	1-hour	21.9	2000	NO	NONE
NO _x	Annual	6.1	1	YES	0.3

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Maximum Project Air Quality Impacts in the St. Marks and Bradwell Bay NWA for Comparison to the PSD Class I Significant Impact Levels

Pollutant	Averaging Time	Maximum Predicted Impact (ug/m ³)		Significant Impact?		National Park Service (NPS) Significant Impact Level (ug/m ³)
		St. Marks	Bradwell Bay	St. Marks	Bradwell Bay	
SO ₂	Annual	0.0	0.0	NO	NO	0.03
	24-hour	0.0	0.0	NO	NO	0.07
	3-hour	0.0043	0.0	NO	NO	0.48
PM ₁₀	Annual	0.0	0.0	NO	NO	0.08
	24-hour	0.14	0.0	NO	NO	0.27
NO ₂	Annual	0.86	0.038	YES	YES	0.03

As shown in the tables the maximum predicted air quality impacts due to PM₁₀ and NO_x emissions from the proposed project are greater than the significant impact levels in the vicinity of the facility for the 24-hour and annual averaging times, respectively. The maximum predicted air quality impacts due to NO_x emissions are greater than the significant impact level in the Class I areas. Therefore, the applicant was required to do further PM₁₀ and NO₂ modeling in the vicinity of the facility, within the applicable significant impact area, to determine the impacts of the project along with all other sources in the vicinity of the facility. The significant impact area is based upon the predicted radius of significant impact. Further modeling for Class I impacts was also required for NO₂. No further modeling of any other pollutants were required. However, the applicant performed full impact modeling in the vicinity of the project and in the Class I areas for SO₂, PM₁₀, NO₂ and CO to provide further reasonable assurance that the proposed project would not violate any AAQS or PSD increments. Full impact modeling is modeling that considers not only the impact of the project but the impacts of the existing facility and other major sources, including background concentrations, located within the vicinity of the project and the Class I areas.

6.4.5 Receptor Networks For PSD Increment And AAQS Analyses

For the AAQS and PSD Class II analyses, receptor grids normally are based on the size of the significant impact area for each pollutant. The size of the significant impact areas for the required PM₁₀ and NO₂ analyses were based on only a 0.3 km radius of significant impact as discussed in the significant impact analysis section above. However, the receptor grids used in AAQS and PSD Class II analyses were the same and were as extensive (receptors out to 10 km) as those used in the original analyses to determine the extent of significant impact for each pollutant.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Both preliminary and refined modeling runs were performed for these analyses. In the refined runs additional receptors (11X11, 121 point receptor grid) spaced 100 m apart were placed over critical receptors identified during preliminary AAQS and PSD increment modeling. The results of these analyses are discussed below.

6.4.6 PSD Increment Analysis

The PSD increment represents the amount that new sources in an area may increase ambient ground level concentrations of a pollutant. The results of the PSD Class II increment analysis presented in the table below show that all of the maximum predicted impacts are less than the allowable Class II increments.

PSD Class II Increment Analysis

Pollutant	Averaging Time	Maximum Predicted Impact (ug/m ³)		Impact Greater Than Allowable Increment?	Allowable Increment (ug/m ³)
		St. Marks	Bradwell Bay		
SO ₂	Annual	0.0	0.0	NO	20
	24-hour	2.4	4.9	NO	91
	3-hour	14.4	16.9	NO	512
PM ₁₀	Annual	0.32	0.16	NO	17
	24-hour	3.3	1.65	NO	31
NO ₂	Annual	6.2	0.16	NO	25

The results of the PSD Class I increment analysis presented in the tables below show that all of the maximum predicted impacts are less than the allowable increments.

PSD Class I Increment Analysis for St. Marks NWA and Bradwell Bay NWA

Pollutant	Averaging Time	Maximum Predicted Impact (ug/m ³)		Impacts Greater Than Allowable Increment?		Allowable Increment (ug/m ³)
		St. Marks	Bradwell Bay	St. Marks	Bradwell Bay	
SO ₂	Annual	0.0	0.0	NO	NO	2
	24-hour	2.7	4.9	NO	NO	5
	3-hour	10.7	16.9	NO	NO	25
	Annual	0.11	0.16	NO	NO	4

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

PM ₁₀	24-hour	0.73	0.0023	NO	NO	8
NO ₂	Annual	0.91	0.57	NO	NO	2.5

6.4.7 AAQS Analysis

For pollutants subject to an AAQS review, the total impact on ambient air quality is obtained by adding a "background" concentration to the maximum modeled concentration. This "background" concentration takes into account all sources of a particular pollutant that are not explicitly modeled. The results of the AAQS analysis are summarized in the table below. As shown in this table, emissions from the proposed facility are not expected to cause or significantly contribute to a violation of any AAQS.

Ambient Air Quality Impacts

Pollutant	Averaging Time	Major Sources Impact (ug/m ³)	Background Concentration (ug/m ³)	Total Impact (ug/m ³)	Total Impact Greater Than AAQS	Florida AAQS (ug/m ³)
SO ₂	Annual	26	9	36	NO	60
	24-hour	137	71	208	NO	260
	3-hour	402	183	585	NO	1300
PM ₁₀	Annual	19	22	41	NO	50
	24-hour	84	47	131	NO	150
NO ₂	Annual	21	14	35	NO	100
CO	8-hour	16	5290	5306	NO	10,000
	1-hour	103	8050	8153	NO	40,000

6.5 Additional Impacts Analysis

6.5.1 *Impacts On Soils, Vegetation, Wildlife, and Visibility*

The maximum ground-level concentrations predicted to occur for PM₁₀, NO_x, SO₂ and CO as a result of the proposed project, including background concentrations and all other nearby sources, will be below the associated AAQS. The AAQS are designed to protect both the public health and welfare. As such, this project is not expected to have a harmful impact on soils and vegetation in the PSD Class II area. An air quality related values (AQRV) analysis was done by the applicant for the Class I area. No significant impacts on this area are expected.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

6.5.2 Growth-Related Air Quality Impacts

There may be some temporary residential growth associated with this project, but there is little potential for new industrial development nearby as a result of it. Although it is not possible to reliably quantify the emissions and impacts resulting from this project, they are expected to be small and well-distributed throughout the area.

6.5.3 Air Toxics Air Quality Impacts

The maximum predicted impacts of regulated and non-regulated toxic air pollutants that are proposed to be emitted by the project are all less than the Department's draft annual Ambient Reference Concentrations (ARC).

7. CONCLUSION

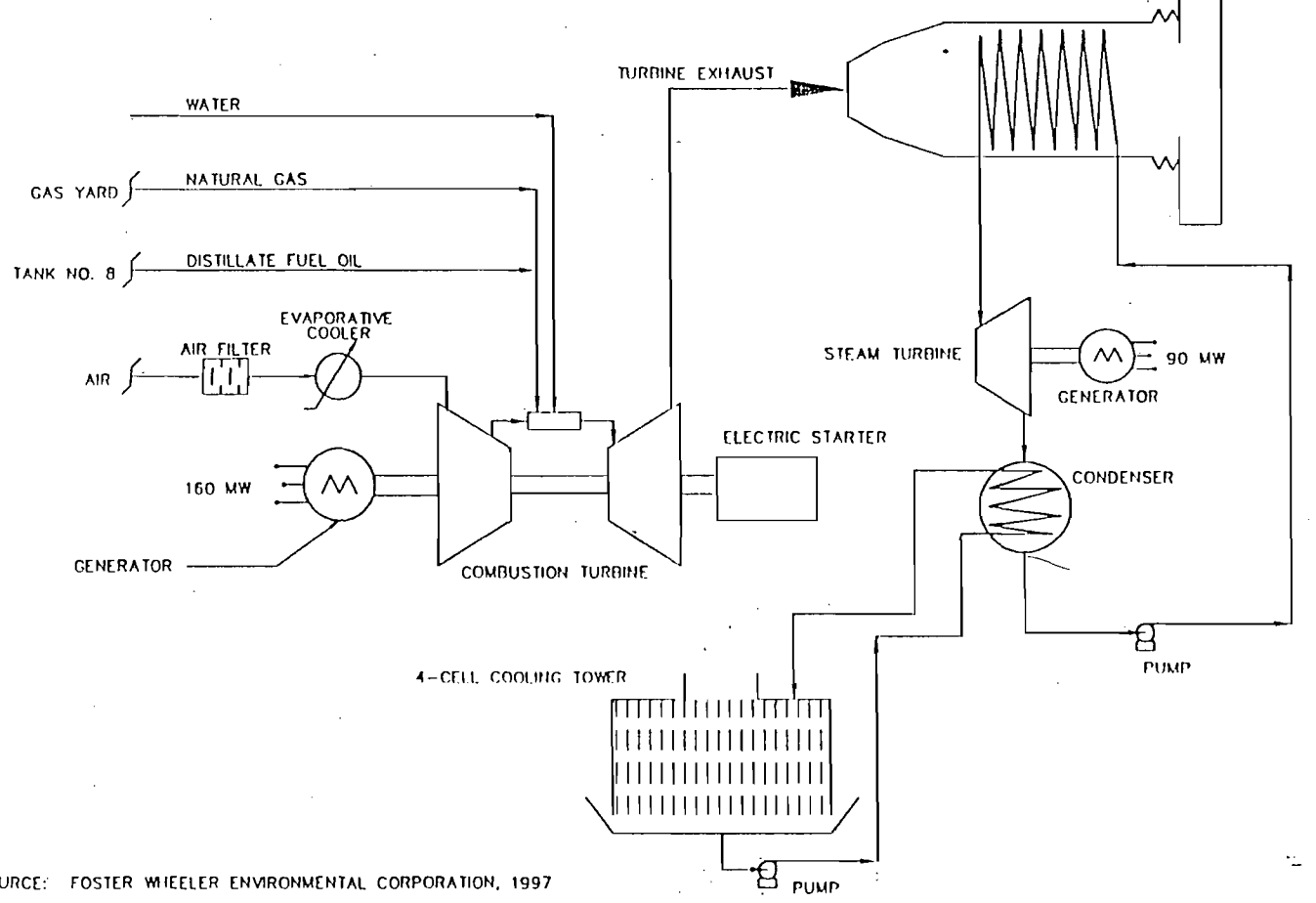
Based on the foregoing technical evaluation of the application and additional information submitted by the city, the Department has made a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations provided the Department's Best Available Control Technology Determination is implemented and certain conditions are met. The General and Specific Conditions are listed in the attached draft conditions of approval.

Permit Engineer: Martin Costello, P.E.
Meteorologist: Cleve Holladay

Reviewed and Approved by A. A. Linero, P.E.
Administrator, New Source Review Section

GE OPERATING DATA		
PARAMETER	NATURAL GAS	DISTILLATE FUEL OIL
HEAT INPUT (MMBTU/HR) - LHV	1682.2	1914.1
FEED RATE (MMCF/HR)	1.62	N/A
FEED RATE (KCAL/HR)	N/A	14.50
FULL LOAD AND 20 °F		

EU13 - EXHAUST PARAMETERS
EXHAUST TEMP. - 171 TO 203 °F
STACK HEIGHT - 200'
SO2 EMISSIONS - 80 TPY
NOx EMISSIONS - 467 TPY
OPACITY - 20% EXCEPT AS ALLOWED



SOURCE: FOSTER WHEELER ENVIRONMENTAL CORPORATION, 1997



SIMPLIFIED PROCESS FLOW DIAGRAM
PURDOM UNIT 8 PROJECT - ST MARKS, FLORIDA

Figure
2-1



Department of Environmental Protection

DRAFT

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

PERMITTEE:

City of Tallahassee
Purdum Generating Station
300 South Adams Street
Tallahassee, FL 32301

FID No.	1290001
PSD No.	PSD-FL-239
PPS No.	PA97-36
Expires:	N/A

Authorized Representative:
Jennette Curtis
Environmental Administrator

LOCATED AT:

City of Tallahassee
Purdum Generating Station
Project: Purdom Unit 8
Standard Industrial Classification Code (SIC): 4911
Wakulla County, Florida

- UTM: Zone 16 ; 769.611 km E ; 3339.767 km N
- Directions: *On the north end of the City of St. Marks on SR 363, Wakulla County*

STATEMENT OF BASIS:

This construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and the Florida Administrative Code (F.A.C.) Chapters 62-4, 62-204, 62-210, 62-212, 62-296, 62-297. The above named permittee is authorized to modify the facility in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

Attached appendices and Tables made a part of this permit:

Appendix BD	BACT Determination
Appendix GC	Construction Permit General Conditions

Howard L. Rhodes, Director
Division of Air Resources
Management

SECTION I. FACILITY INFORMATION

SUBSECTION A. FACILITY DESCRIPTION

The City of Tallahassee (COT) plans to install a new combined cycle combustion turbine system, Unit 8, at the existing Purdom facility consisting of a 160 MW (nominal rating) GE MS7251FA with DLN-2 dry low NO_x burners (Unit 8) and a nonfired heat recovery steam generator (HRSG) with a nominal 90 MW steam turbine. The compressor inlet air will be conditioned by an evaporative cooler when needed. The turbine will be started using an electric motor. A new 200 foot stack and a cooling tower will be added to the facility for Unit 8.

Unit 8 will be located at the cities' Sam O. Purdom Generating Station near St. Marks, in Wakulla county. Existing steam generating Units 5 and 6 will be permanently shut down once Unit 8 has completed the initial compliance test. Other existing units at the plant consist of Unit 7, pre-NSPS boiler with a nominal rating of 44 MW fired by natural gas, and cofired or fired alone with residual fuel oil or distillate fuel oil, two pre-NSPS distillate fuel oil or natural gas fired combustion turbines with a nominal rating of 12.5 MWs each (GT1 and GT2), and a Subpart Dc auxiliary steam boiler fired by natural gas.

SUBSECTION B. REGULATORY CLASSIFICATION

The Purdom Generating Station is classified as a major air pollutant emitting facility. Air pollutant emissions are over 100 TPY for nitrogen oxides (NO_x) and carbon monoxide (CO).

This facility is on the list of the 28 Major Facility Categories, Table 62-212.400-1. This facility is also classified as a Title V facility.

SUBSECTION C. PERMIT SCHEDULE:

- 03-17-97: Date of Receipt of Application
- 04-21-97: Department's Preliminary Incompleteness Letter
- 05-01-97: PPS Department's Incompleteness Letter sent
- 05-07-97: Company's Response to Department's letter
- 05-07-97: Application deemed complete
- 07-01-97: Intent Issued

SUBSECTION D. RELEVANT DOCUMENTS:

The documents listed below are the basis of the permit. They are specifically related to this permitting action. These documents are on file with the Department.

1. Application
2. Department's letters dated 4/21/97
3. Company letters dated 5/7/97
4. Department of Interior's letters dated 1/21/97
5. [EPA's letter dated ...]
6. [Third party's letters dated ...]

DRAFT**SECTION II. EMISSION UNIT(S) GENERAL REQUIREMENTS**

SUBSECTION A. ADMINISTRATIVE

- 1 Regulating Agencies: All documents related to applications for permits to operate, reports, tests, minor modifications and notifications or for permits to construct or modify an emission unit(s) *subject to the Prevention of Significant Deterioration (PSD) or to Nonattainment Areas (NA) Review requirements* should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (FDEP) located at 2600 Blairstone Road, Tallahassee, Florida 32399-2400 and phone number (850) 488-1344.
- 2 General Conditions: The owner and operator is subject to and shall operate under the attached General Permit Conditions G.1 through G.15 listed in *Appendix GC* of this permit. General Permit Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. [Rule 62-4.160, F.A.C.]
- 3 Terminology: The terms used in this permit have specific meanings as defined in the corresponding chapters of the Florida Administrative Code.
- 4 Forms and Application Procedures: The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. [Rule 62-210.900, F.A.C.]
- 5 Expiration: This air construction permit shall not expire.

SECTION III. SPECIFIC CONDITIONS

SUBSECTION A. SPECIFIC CONDITIONS:

A. General Operation Requirements

Applicable Regulations: Unless otherwise indicated in this permit, the construction and operation of the subject emission unit(s) shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of Chapter 403, F.S and Florida Administrative Code Chapters 62-4, 62-103, 62-204, 62-210, 62-212, 62-213, 62-214, 62-296, 62-297; and the applicable requirements of the Code of Federal Regulations Section 40, Part 60 including Subpart A and GG (1997 version), adopted by reference in the Florida Administrative Code regulation [Rule 62-204.800 F.A.C.]. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting requirements or regulations. [Rule 62-210.300, F.A.C.]

1. The maximum heat input rates, based on the lower heating value (LHV) of each fuel to Purdom Unit 8 at ambient conditions of 95°F temperature, 60% relative humidity, and 14.7 psi pressure shall not exceed 1,467.7 mmBtu/hr when firing natural gas, nor 1,659.5 mmBtu/hr when firing No. 2 fuel oil. These maximum heat input rates will vary depending upon ambient conditions and the combustion turbine characteristics. Manufacturer's curves or equations for correction to other ambient conditions shall be provided to the Department of Environmental Protection (DEP) at least 90 days prior to initial compliance testing. These curves or equations shall be used to establish the maximum allowable heat inputs at other ambient conditions for compliance determinations.
2. Purdom Unit 8 may operate continuously (i.e., 8760 hours per year).
3. Only natural gas or No. 2 fuel oil with a maximum sulfur content of 0.05% by weight shall be fired in the combined cycle combustion turbine.
4. The permittee shall install duct module(s) suitable for possible future installation of an oxidation catalyst and/or SCR equipment on the combined cycle generating unit.
5. Dry low NO_x combustors shall be used on Unit 8 when firing natural gas and water injection shall be used when firing No. 2 fuel oil for control of NO_x emissions.
6. During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary.
7. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the owner or operator shall notify the Permitting Authority as soon as possible, but at least within (1) working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; the steps being taken to correct the problem and prevent future recurrence; and where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit and the regulations. [Rule 62-4.130, F.A.C.]
8. Operating Procedures: Operating procedures shall include good operating practices and proper training of all operators and supervisors. The good operating practices shall meet the guidelines and procedures as established by the equipment manufacturers. All operators (including supervisors) of air pollution control devices shall be properly trained in plant specific equipment. [Rule 62-4.070(3), F.A.C.]
9. The dry low NO_x burner system shall be tuned upon initial operation to optimize emissions reductions and shall be maintained to minimize NO_x emissions and CO emissions. Operation of the unit when the dry low NO_x burner system is in the diffusion firing mode shall be minimized.

SECTION III. SPECIFIC CONDITIONS

10. Circumvention: The owner or operator shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rules 62-210.650, F.A.C.]

B. Emission Limits and Standards

The following shall apply upon completion of the initial compliance tests:

1. Best Available Control Technology. The following is a summary of the BACT determinations by DEP:

Table 1. Emission Limits

Pollutant	Fuel	BACT Standard
NO _x	Gas	12 ppmvd @ 15 % O ₂ (a) (d)
	Oil	42 ppmvd @ 15 % O ₂ (a) (b) (d)
SO ₂	Gas	Good combustion
	Oil	Good combustion of low (0.05%) sulfur fuel oil
PM/PM ₁₀	Gas	Good combustion
	Oil	Good combustion of low (0.05%) sulfur fuel oil
Visible Emissions	Gas	10 percent opacity
	Oil	10 percent opacity
CO	Gas	25 ppmvd (c)
	Oil	90 ppmvd (c)
(a) 30-day rolling average. (b) Plus an allowance for fuel bound nitrogen using the formula provided in Condition B4. (c) By testing concurrent to RATA testing or by 3 one hour runs of Method 10. (d) Not corrected to ISO conditions.		

2. Visible Emissions. Visible emissions shall not exceed 10 percent opacity when firing either natural gas or No. 2 fuel oil. Drift eliminators shall be installed on the cooling tower to reduce PM/PM₁₀ emissions.
3. Oxides of Nitrogen. Oxides of nitrogen emissions when firing natural gas shall not exceed 12 ppmvd at 15% O₂ on a 30-day rolling average basis (except during periods of startup, shutdown, malfunction or fuel switching), as measured by CEMS. When monitoring data is not available, substitution for missing data shall be handled as required by Title IV (40 CFR 75) to calculate of the 30 day rolling average.
4. Oxides of Nitrogen. Oxides of nitrogen emissions when firing No. 2 fuel oil shall not exceed 42 ppmvd at 15% O₂ on a 30-day rolling average basis (except during periods of startup, shutdown, malfunction or fuel switching), as measured by applicable compliance measures, when fuel bound nitrogen values are less than or equal to 0.015 percent. For higher fuel bound nitrogen values (up to 0.03 percent), oxides of nitrogen shall be limited by the following formula:

$$STD = 0.0042 + F \text{ where:}$$

SECTION III. SPECIFIC CONDITIONS

STD = allowable NO_x emissions (percent by volume at 15 percent O₂ and on a dry basis).

F = NO_x emission allowance for fuel-bound nitrogen defined by the following table:

Fuel-Bound Nitrogen (% by Weight)	F (NO _x % by Volume)
0 < N ≤ 0.015	0
0.015 < N ≤ 0.03	0.04 (N-0.015)

where: N = the nitrogen content of the fuel (% by weight).

- Oxides of Nitrogen. Annual emissions of NO_x shall not exceed 467 tons per year from the Purdom facility (Unit 8, Unit 7, GT1, GT2, and the auxiliary boiler) on a calendar year basis, as measured by applicable compliance methods. [Requested by the applicant]
- Sulfur Dioxide. Annual emissions of SO₂ shall not exceed 80 tons per year from the Purdom facility (Unit 8, Unit 7, GT1, GT2, and the auxiliary boiler) on a calendar year basis, as measured by applicable compliance methods. [Requested by the applicant]
- Carbon Monoxide. Carbon monoxide emissions when firing natural gas shall not exceed 25 ppmvd as measured by Method 10.
- Carbon Monoxide. Carbon monoxide emissions when firing No. 2 fuel oil shall not exceed 90 ppmvd as measured by Method 10.

C. Excess Emissions

- Excess emissions resulting from startup, shutdown, malfunction or fuel switching shall be permitted provided that best operational practices are adhered to and the duration of excess emissions shall be minimized but in no case exceed four hours in any 24-hour period for cold startup or two hours in any 24-hour period for other reasons unless specifically authorized by DEP for longer duration.
- Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown or malfunction shall be prohibited pursuant to Rule 62-210.700, F.A.C. In case of excess emissions resulting from malfunctions, the owner or operator shall notify Permitting Authority within one (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the problem; and the corrective actions being taken to prevent recurrence. [Rule 62-210.700(6), F.A.C.]
- Excess Emissions Report: If excess emissions occur due to malfunction, the owner or operator shall notify the Permitting Authority within (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Department may request a written summary report of the incident. Pursuant to the New Source Performance Standards, excess emissions shall also be reported in accordance with 40 CFR 60.7, Subpart A. [Rules 62-4.130 and 62-210.700(6), F.A.C.]

D. Compliance Determination

- Compliance with the allowable emission limiting standards shall be determined within 60 days after achieving the maximum production rate at which this unit will be operated, but not later than 180 days of initial operation of the

SECTION III. SPECIFIC CONDITIONS

unit and annually thereafter as indicated in this permit, by using the following reference methods as described in 40 CFR 60, Appendix A (1997 version), and adopted by reference in Chapter 62-297, F.A.C.

Initial (I) compliance tests shall be performed on Unit 8 while firing each fuel (gas, oil). Annual (A) compliance tests shall be performed during every federal fiscal year (October 1 - September 30) pursuant to Rule 62-297.340, F.A.C., on Unit 8 as indicated. The following reference methods shall be used:

- Method 9 Visual Determination of the Opacity of Emissions from Stationary Sources (I, A); annual on oil if greater than 400 hours of oil firing; however, testing on gas is required only once every five years.

- Method 10 Determination of Carbon Monoxide Emissions from Stationary

Sources (I, A). Testing may be conducted at less than capacity. Annual compliance testing may be conducted concurrent with the annual RATA testing required pursuant to 40 CFR 75.

- Method 20 Determination of Oxides of Nitrogen and diluent emissions from Stationary Gas Turbines (I only, for compliance with 40 CFR 60 Subpart GG)

- 40 CFR 75 Determination of Oxides of Nitrogen emissions will be by a Continuous Emissions Monitoring System (CEMs). Compliance with the NO_x emissions standards in Table 1 shall be demonstrated with this CEMS system based on a 30 day rolling average. Based on CEMS data a separate compliance test is conducted at the end of each operating day and a new 30 day average emission rate is calculated from the arithmetic average of all valid hourly emission rates during the previous 30 operating days.

Note: No other methods may be used for compliance testing unless prior DEP approval is received in writing. The DEP may request a special compliance test pursuant to Rule 62-297.340(2), F.A.C., when, after investigation (such as complaints, increased visible emissions, or questionable maintenance of control equipment), there is reason to believe that any applicable emission standard is being violated.

2. Notwithstanding the requirements of Rule 62-297.340, F.A.C., the exclusive use of fuel oil with a maximum sulfur content limit of 0.05% or less, by weight, is the method for determining compliance for SO₂ and PM₁₀. For the purposes of demonstrating compliance with 40 CFR 60.333 SO₂ emission limit and the 0.05% S limit, fuel oil analysis using ASTM D2880-71 or D4294 (or equivalent) for the sulfur content of liquid fuels and D1072-80, D3031-81, D4084-82 or D3246-81 (or equivalent) for sulfur content of gaseous fuel shall be utilized in accordance with an EPA approved custom fuel monitoring schedule. For the purposes of demonstrating compliance with the emissions caps (Conditions B5 and B6) and for acid rain compliance purposes, natural gas and fuel oil supplier data for sulfur content may be submitted or the natural gas sulfur content referenced in 40 CFR 75 Appendix D may be utilized. However, the applicant is responsible for ensuring that the procedures above are used for determination of fuel sulfur content. Analysis may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency pursuant to 40 CFR 60.335 (e) (1997 version).
3. An initial test for CO, concurrent with the initial NO_x test, is required. The initial NO_x and CO test results shall be the average of three valid one-hour runs. The DEP's Northwest District office shall be notified, in writing, at least 30 days prior to the initial compliance tests and at least 15 days before annual compliance test(s). Testing of emissions shall be conducted with the combustion turbine operating at permitted capacity. Permitted capacity is defined as 95-100 percent of the maximum heat input rate allowed by the permit, corrected for the average ambient air temperature during the test (with 100 percent represented by a curve depicting heat input vs. ambient temperature). If it is impracticable to test at permitted capacity, the source may be tested at less than permitted capacity. In this case, subsequent operation is limited by adjusting the entire heat input vs. ambient temperature curve downward by an increment equal to the difference between the maximum permitted heat input (corrected for ambient temperature) and

SECTION III. SPECIFIC CONDITIONS

105 percent of the value reached during the test until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purposes of additional compliance testing to regain the permitted capacity. Compliance test results shall be submitted to the DEP's Northwest District office no later than 45 days after completion of the last test run.

E. Notification, Reporting and Recordkeeping

1. All measurements, records, and other data required to be maintained by the City of Tallahassee shall be retained for at least five (5) years following the date on which such measurements, records, or data are recorded. These data shall be made available to the DEP representatives.
2. Emission Compliance Stack Test Reports: A test report indicating the results of the required compliance tests shall be filed with the Permitting Authority as soon as practical, but no later than 45 days after the last sampling run is completed. [Rule 62-297.310(8), F.A.C.]. The test report shall provide sufficient detail on the tested emission unit and the procedures used to allow the Department to determine if the test was properly conducted and if the test results were properly computed. At a minimum, the test report shall provide the applicable information listed in Rule 62-297.310(8), F.A.C.

F. Monitoring Requirements

1. The permittee shall install, calibrate, maintain, and operate a continuous emission monitor in the stack to measure and record the nitrogen oxides emissions from this source. Thirty day rolling average periods when NO_x emissions (ppmvd @ 15% oxygen) are above the BACT standards (12/42 ppmvd for gas/oil) shall be reported to the DEP Northwest District Office pursuant to General Condition #8. The continuous emission monitoring systems must comply with the certification and quality assurance, and other applicable requirements from 40 CFR 75. Periods of startup, shutdown, malfunction, and fuel switching shall be monitored, recorded, and reported as excess emissions following the format of 40 CFR 60.7 (1997 version). Subject to EPA approval, the NO_x CEMS will be used in lieu of the water/fuel monitoring system and fuel bound nitrogen (FBN) monitoring, which are required in accordance with 40 CFR 60, Subpart GG (1997 version). Subject to EPA approval, the calibration of the water/fuel monitoring device required in 40 CFR 60.335 (c)(2) (1997 version) will be replaced by the 40 CFR 75 certification tests of the NO_x CEMS.
2. The following custom monitoring schedule for No. 2 fuel oil is approved (pending EPA concurrence). For all bulk shipments of No. 2 fuel oil received at the Purdom Station, an analysis which reports the sulfur content and the fuel bound nitrogen content of the fuel shall be provided by the fuel vendor. The analysis shall also specify the methods by which the analyses were conducted and shall comply with the requirements of 40 CFR 60.335(d).
3. The following custom monitoring schedule for natural gas is approved (pending EPA concurrence) in lieu of the daily sampling requirements of 40 CFR 60.334 (b)(2).
 - a. Monitoring of natural gas nitrogen content shall not be required.
 - b. Analysis of the sulfur content of natural gas shall be conducted using one of the EPA-approved ASTM reference methods for the measurement of sulfur in gaseous fuels, or an approved alternative method. Once Unit 8 becomes operational, monitoring of the sulfur content of the natural gas shall be conducted semiannually.
 - c. Should any sulfur analysis indicate noncompliance with 40 CFR 60.333, the City shall notify DEP of such excess emissions and the customized fuel monitoring schedule shall be reexamined. The sulfur content of the natural gas will be monitored weekly during the interim period while the monitoring schedule is reexamined.

SECTION III. SPECIFIC CONDITIONS

- d. The City shall notify DEP of any change in natural gas supply for reexamination of this monitoring schedule. A substantial change in natural gas quality (i.e., sulfur content variation of greater than 1 grain per 100 cubic foot of natural gas) shall be considered as a change in the natural gas supply. Sulfur content of the natural gas will be monitored weekly by the natural gas supplier during the interim period when this monitoring schedule is being reexamined.
- e. Records of sampling analysis and natural gas supply pertinent to this monitoring schedule shall be retained by the City for a period of five years, and shall be made available for inspection by the appropriate regulatory personnel.
- f. The City shall obtain the sulfur content of the natural gas from the fuel supplier (Florida Gas Transmission Company) provided the test methods listed in Specific Condition D2 are used.
4. Determination of Process Variables:
- (a) The permittee shall operate and maintain equipment and/or instruments necessary to determine process variables, such as process weight input or heat input, when such data is needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.
- (b) Equipment and/or instruments used to directly or indirectly determine such process variables, including devices such as belt scales, weigh hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value. [Rule 62-297.310(5), F.A.C]
5. Compliance with the annual facility-wide NO_x cap shall be determined by adding the annual NO_x emissions in tons per year determined by the CEMS required by 40 CFR 75 for Unit 8 along with existing Unit 7 to annual NO_x emissions calculated for existing GT1, GT2 and the auxiliary boiler determined by the following formulas:
- GT 1 & GT 2 NO_x(natural gas)= (Fuel Usage)X (Heating Value of Natural Gas) X (0.44 lb/mmBtu) X conversion factors**
- Fuel usage shall be measured by fuel meter, recorded daily when unit is operated
Heating value of natural gas will be determined from fuel supplier data
0.44 lb/mmBtu = AP-42 emission factor
- GT 1 & GT 2 NO_x (fuel oil)= (Fuel Usage)X (Heating Value of Fuel Oil) X (0.698 lb/mmBtu)**
- Fuel usage shall be measured by fuel meter, recorded daily when unit is operated
Heating Value of fuel oil will be determined from fuel supplier data
0.698 lb/mmBtu = AP-42 emission factor
- Aux. Boiler NO_x(natural gas)= (Fuel Usage)X (140 lb/mmCF)**
- Fuel usage shall be measured by flow meter, recorded daily when unit is operated
140 lb/mmCF = AP-42 emission factor

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AIR CONSTRUCTION PERMIT: PSD-FL-23901-ASE-1

SECTION III. SPECIFIC CONDITIONS

6. Compliance with the annual facility-wide SO₂ cap shall be determined by adding the annual SO₂ emissions in tons per year determined by the CEMS required by 40 CFR 75 for Unit 8 along with existing Unit 7 to annual SO₂ emissions calculated for existing GT1, GT2 and the auxiliary boiler determined by the following formulas:

GT 1 & GT 2 SO₂ Emissions (natural gas) = (Fuel Usage) X (Heating Value of Natural Gas) X (0.0006 lb/mmBtu)

Fuel usage shall be measured by fuel meter, recorded daily when unit is operated

Heating Value of natural gas from fuel supplier data

Sulfur Content default of NADB = 0.0006 lb-SO₂/mmBtu

GT 1 & GT 2 SO₂ Emissions (fuel oil) = (Fuel Usage) X (% Sulfur Content of oil) X (Molecular weight SO₂ / Molecular weight of S) X (Conversion factor)

Fuel usage shall be measured by fuel meter, recorded daily when unit is operated

% Sulfur will be determined from fuel oil analysis each time fuel is delivered

Molecular weight of SO₂ = 64

Molecular weight of S = 32

Conversion factor of 95% = 0.95

Aux. Boiler SO₂ Emissions (natural gas) = (Fuel Usage) X (Heat Rate of Natural Gas) X (0.0006 lb/mmBtu)

Fuel usage shall be measured by Fuel Meter, Recorded Daily when unit is operated

Heating Value of Natural Gas from fuel supplier data

Sulfur Content default of NADB = 0.0006 lb/mmBtu

G. Rule Requirements

1. The emission unit shall be in compliance with all applicable provisions of Chapter 403, F.S., and Chapters 62-4, 210, 212, 275, 296 and 297, F.A.C., except as otherwise specified herein.
2. The emission unit shall be in compliance with all applicable requirements of 40 CFR 60, Subpart A, Appendix A and Appendix B (1997 version), Subpart GG - Standards of Performance for Stationary Gas Turbines (1997 version), and Rule 62-204.800 (7) (b) 38, F.A.C., except as otherwise specified herein. The Subpart GG requirement to correct test data to ISO conditions applies. However, such correction is not used for compliance determinations with the BACT standard(s). All notifications and reports required by this specific condition shall be submitted to the DEP's Northwest District office.
3. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting requirements and regulations (Rule 62-210.300(1), F.A.C.).
4. Except as otherwise specified herein, the emission unit shall be in compliance with all applicable provisions of Rule 62-210.650, F.A.C.: Circumvention; Rule 62-210.700, F.A.C.: Excess Emissions; Rule 62-204.800 (7) (b) 38, F.A.C.: Standards of Performance for New Stationary Sources (NSPS); Chapter 62-297, F.A.C.: Stationary Sources - Emissions Monitoring; and, Rule 62-4.130, F.A.C.: Plant Operation - Problems.

SECTION III. SPECIFIC CONDITIONS

5. If construction does not commence within 18 months of issuance of this permit, the permittee shall obtain from the DEP's Bureau of Air Regulation a review and, if necessary a modification of the BACT determination and allowable emissions (40 CFR 52.21(r)(2) (1997 version)).
6. Quarterly excess emission reports, in accordance with 4 CFR 60.7 (7) (c) (1997 version), shall be submitted to the DEP's Northwest District office.
7. Pursuant to Rule 62-210.370(2), F.A.C., Annual Operation Reports, the permittee is required to submit annual reports on the actual operating rates and emissions from this facility. Annual operating reports shall be sent to the DEP's Northwest District office by March 1st of each calendar year.
8. Stack sampling facilities shall be installed in accordance with Rule 62-297.310(6), F.A.C.
9. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (Rule 62-4.090, F.A.C.).

H. Modifications

1. The permittee shall give written notification to the Department when there is any modification to this facility. This notice shall be submitted sufficiently in advance of any critical date involved to allow sufficient time for review, discussion, and revision of plans, if necessary. Such notice shall include, but not be limited to, information describing the precise nature of the change; modifications to any emission control system; production capacity of the facility before and after the change; and the anticipated completion date of the change.

APPENDIX GC
GENERAL PERMIT CONDITIONS [F.A.C. 62-4.160]

- G.1 The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
- G.2 This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
- G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
- G.4 This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
- G.5 This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
- G.6 The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
- G.7 The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
- (a) Have access to and copy and records that must be kept under the conditions of the permit;
 - (b) Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
 - (c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

- G.8 If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
- (a) A description of and cause of non-compliance; and
 - (b) The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

APPENDIX GC
GENERAL PERMIT CONDITIONS [F.A.C. 62-4.160]

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

- G.9 In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.
- G.10 The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
- G.11 This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
- G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.
- G.13 This permit also constitutes:
- (a) Determination of Best Available Control Technology ()
 - (b) Determination of Prevention of Significant Deterioration (); and
 - (c) Compliance with New Source Performance Standards ().
- G.14 The permittee shall comply with the following:
- (a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
 - (b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
 - (c) Records of monitoring information shall include:
 - 1. The date, exact place, and time of sampling or measurements;
 - 2. The person responsible for performing the sampling or measurements;
 - 3. The dates analyses were performed;
 - 4. The person responsible for performing the analyses;
 - 5. The analytical techniques or methods used; and
 - 6. The results of such analyses.
- G.15 When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

APPENDIX BD BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

Purdom Generating Station/ Unit 8
City of Tallahassee

Facility ID No. :1290001
Unit No. 8
Tallahassee, FL
Wakulla County

Air Construction Permit No. PSD-FL-239
Power Plant Siting No. PA97-36

The applicant, the City of Tallahassee plans to construct Unit 8, a new combined cycle combustion turbine system at the existing Purdom facility consisting of a 160 MW (nominal rating) GE MS7231FA combustion turbine with DLN-2 dry low NO_x burners and a nonfired heat recovery steam generator (HRSG) with a nominal 90 MW steam turbine. The compressor inlet air will be conditioned by an evaporative cooler when needed. The turbine will be started using an electric motor. A new 200 foot stack and a cooling tower will be added to the facility for Unit 8.

Unit 8 will be located at the city's Sam O. Purdom Generating Station near St. Marks, in Wakulla county. Existing steam generating units 5 and 6 will be permanently shut down once Unit 8 is fully operational. Other existing units at the plant consist of Unit 7, a pre-NSPS boiler with a nominal rating of 44 MW fired by natural gas, and cofired or fired alone with residual fuel oil or distillate fuel oil, two pre-NSPS distillate fuel oil or natural gas fired combustion turbines with a nominal rating of 12.5 MWs each (GT1 and GT2), and a Subpart Dc auxiliary steam boiler fired by natural gas.

A process description is included in the Technical Evaluation and Preliminary Determination.

BACT DETERMINATION REQUESTED BY THE APPLICANT:

See the attached Table 4-8 (from the application) for the BACT requested by the applicant.

The Sam O. Purdom facility is among the major facilities listed in Florida Administrative Code (F.A.C.) Chapter 62-212, Prevention of Significant Deterioration (PSD), Table 62-212.400-1, "Major Facilities Categories." A BACT determination is required for each pollutant exceeding the significant emission rates in Table 62-212.400-2, "Regulated Air Pollutants Significant Emissions Rates," which in this case are particulate matter (PM/PM₁₀), sulfur dioxide (SO₂), carbon monoxide (CO), and nitrogen oxides (NO_x),

This facility is also subject to:

- o 40 CFR 60, Subpart GG
- o 40 CFR 75

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

DATE OF RECEIPT OF A BACT APPLICATION:

03-17-97

REVIEW GROUP MEMBERS:

Martin Costello, P.E., A. A. Linero, P.E., Administrator of the New Source Review Section:

BACT DETERMINATION PROCEDURE:

In accordance with Chapter 62-212, F.A.C., this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department of Environmental Protection (Department), on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that, in making the BACT determination, the Department shall give consideration to:

- (a) Any Environmental Protection Agency determination of BACT pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 - Standards of Performance for New Stationary Sources or 40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants.
- (b) All scientific, engineering, and technical material and other information available to the Department.
- (c) The emission limiting standards or BACT determination of any other state.
- (d) The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical emission unit or emission unit category. If it is shown that this level of control is technically or economically infeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

The air pollutant emissions from this facility can be grouped into categories based upon the control equipment and techniques that are available to control emissions from these emission units. Using this approach, the emissions can be classified as follows:

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o *Combustion Products* (e.g. NO_x and SO₂)

Nitrogen Oxides (NO_x)

Oxides of nitrogen (NO_x) are generated during fuel combustion by oxidation of chemically bound nitrogen in the fuel (fuel NO_x) and by thermal fixation of nitrogen in the combustion air (thermal NO_x). As flame temperature increases, the amount of thermally generated NO_x increases. Fuel type affects the quantity and type of NO_x generated. Natural gas is very low in fuel bound nitrogen and therefore the dominant mechanism for NO_x formation is thermal NO_x. On combustion turbines, controls for NO_x include Selective Catalytic Reduction (SCR) systems, wet injection or dry low NO_x burner systems. NO_x emissions represent a significant portion of the total emissions generated by this project, and must be minimized using BACT.

Sulfur Dioxide (SO₂)

In a combustion turbine (CT) sulfur dioxide emissions result from the oxidation of fuel bound sulfur. Natural gas has very low levels of sulfur and low sulfur distillate fuel oils have 0.05% sulfur by weight which is also low compared to heavy fuel oils or coal. Add on controls (e.g. wet scrubber or spray dryer absorber systems) are not feasible nor are they needed when low sulfur fuels are fired in combustion turbines. SO₂ emissions are minimized solely by firing low sulfur fuels. As discussed below, sulfur dioxide (and sulfuric acid mist) emissions will be controlled on unit 8 by firing low sulfur fuels.

o *Products of Incomplete Combustion* (e.g., PM₁₀, CO, VOC).

Particulate Matter less than 10 micrometers aerometric diameter (PM₁₀)

Particulate Matter is generated by various physical and chemical processes during combustion. The particulate matter emitted from this combustion turbine will predominately be less than 10 micrometers in diameter (PM₁₀). Common control devices for stack gases include settling chambers, inertial separators, impingement separators, wet scrubbers, fabric filters, and electrostatic precipitators. Fabric filters (baghouses) and electrostatic precipitator (ESPs) have not been used/needed on combustion turbines mainly due to the low particulate loadings and the increased back pressure. Filtering of the compressor inlet air and good combustion practices constitute the top control option for combustion turbines firing natural gas or low sulfur distillate fuel oil.

The cooling tower will emit PM/PM₁₀ as particulate laden water is emitted and evaporated from the tower. A single BACT determination for a cooling tower was identified in the technology review. The BACT in this case specified drift eliminators to control PM/PM₁₀ emissions from the cooling tower drift losses.

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

Carbon Monoxide (CO)

Carbon monoxide (CO) is a pollutant formed by the incomplete combustion (oxidation) of hydrocarbons in the turbine's combustors. The most stringent control technology for CO emissions is the use of an oxidation catalyst. This control option is not considered cost effective as discussed in the next section. The second most stringent control option, combustion controls and good combustion practices is considered BACT for this project.

Other Pollutants:

VOC is also a pollutant formed by the incomplete combustion of fuel. It will be controlled in the same manner as chosen for CO control. Other pollutants (sulfuric acid mist, heavy metals) will be minimized by the exclusive use of clean fuels and the same good combustion practices listed above.

Grouping the pollutants in this manner facilitates the BACT analysis because it enables the equipment available to control the type or group of pollutants emitted and the corresponding energy, economic, and environmental impacts to be examined on a common basis. Although all of the pollutants addressed in the BACT analysis may be subject to a specific emission limiting standard as a result of PSD review, the control of "non-regulated" air pollutants is considered in imposing a more stringent BACT limit on a "regulated" pollutant (i.e., PM₁₀, NO_x, SO₂, etc.), if a reduction in "non-regulated" air pollutants can be directly attributed to the control device selected as BACT for the abatement of the "regulated" pollutants.

BACT POLLUTANT ANALYSIS

NITROGEN OXIDES (NO_x)

A review of EPA BACT/LAER Clearinghouse (BACT Clearinghouse) information indicates that NO_x emissions for most new combustion turbines in attainment areas for ozone and nitrogen dioxides are controlled by either wet injection or dry low NO_x burner technology. The applicant has proposed dry low NO_x burner technology for gas firing and water injection for fuel oil firing. It is compared below with previous determinations documented by the BACT Clearinghouse.

BACT Clearinghouse Determinations

<i>BASIS:</i>	<i>Limit</i>	<i>Technology</i>	<i>Facility ID</i>
<i>LAER- gas fired</i>	<i>3.5 ppm</i>	<i>SCR</i>	<i>NY-0044</i>
<i>LAER- oil fired</i>	<i>10 ppm</i>	<i>SCR</i>	<i>NY-0044</i>
<i>BACT-gas</i>	<i>9ppm</i>	<i>DLNB</i>	<i>NY-0047</i>
<i>BACT-oil</i>	<i>42ppm</i>	<i>water injection</i>	<i>NY-0047</i>

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

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The most stringent or top control option for controlling NO_x emissions from a combustion turbine is the above listed facility (NY-0044) from EPA's RACT/BACT/LAER Clearinghouse Information System (RBLC). The Brooklin Navy Yard Cogeneration Partnership L.P. facility consists of two CTs which are gas/oil fired cogeneration units rated at 240 MW total (160 MW simple cycle) and is located in a nonattainment area for ozone. In addition to SCR add on controls for NO_x emissions, offsets (reductions in NO_x emissions at a nearby facility) were purchased when this unit was permitted.

The city analyzed the feasibility of installing a SCR system for Purdom unit 8. The initial capital cost based on a vendor quote was \$1,676,000 based on a design which would meet 3.5 ppm on gas and 10 ppm on fuel oil. The total levelized annual cost was estimated to be \$1.5 million per year for 20 years resulting in an incremental cost effectiveness of \$7,225 per ton of NO_x removed. This incremental cost effectiveness value is considerably higher than those determined to constitute BACT for other projects in Florida of similar nature. Therefore SCR is deemed too expensive in this application.

Dry low NO_x burner technology is the next most stringent control technology for combustion turbines. The applicant proposes to use GE's DLN-2 controls which is a second generation dry low NO_x burner technology that was first demonstrated in commercial operation in 1996. Emissions from this unit were less than 9 ppm. This application was a Frame 7FA unit with a firing temperature of 2350 F. The first application of a Frame 7FA with a 2400 F firing temperature is scheduled for operation this summer and has a contract for less than 15 ppm. Although not currently demonstrated on the higher firing temperature unit which the city of Tallahassee will purchase, GE has guaranteed an emission rate of less than 9 ppm for Purdom Unit 8. This guarantee is based on operation above the 50% load range since emissions will be higher at low loads. Because the city requested compliance to be demonstrated on a continuous basis (by CEMS), which would involve a limited amount of low load operation when emissions of NO_x will be more than the guaranteed 9 ppm, the Department considered a BACT limit above 9 ppm to compensate for low load operation. An additional consideration in determining BACT for NO_x was the fact that the technology for this dry low NO_x system is still under development, even though it has been demonstrated on a lower firing temperature unit.

The current level of dry low NO_x burner technology which can be reliably be achieved over a long time period appears to be approximately 15 ppm of NO_x at full load firing natural gas. This standard is shown on at least 10 units listed in EPA's RACT/BACT/LAER Clearinghouse. The actual emissions level achieved from dry low NO_x burner technology is dependent on firing temperature and size of the unit. In general the smaller aeroderivative designs have not been able to achieve 15 ppm without having problems with reliability. At least 4 units in Florida have been granted extensions for the time limit to attain 15 ppm. Some of the smaller industrial turbines (frame units) are able to achieve less than 15 ppm today. For instance, Unit 2 at the Kissimmee Utility Authority's Cane Island plant has actual emissions of 6 to 12 ppm at full load on this GE frame 7 EA unit. It is rated at 80 MW and has a firing temperature of about 2025 F.

The most stringent emission limit for a large industrial combustion turbine with dry low NO_x burners is listed in the table above (NY-0047). This unit is located in Holtsville New York at the PASNY Holtsville Combined Cycle Plant. This unit is a Siemens model V84.2 rated at 150 MW simple cycle. It was

APPENDIX BD BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

permitted in 1992 and has recently demonstrated emissions less than 9ppmvd except during startup (up to 3 hours) /shutdown/malfunction and is required to demonstrate compliance using the NO_x CEMS. The firing temperature and the reliability of this unit are not known as this time.

Dry low NO_x technology is a combustion staging technology which reduces the formation of thermal NO_x by keeping peak flame temperatures as low as possible. But higher firing temperatures enable higher thermal efficiencies because these hotter exhaust gases have more energy to turn the turbine blades. Because thermal NO_x can be higher for the higher firing temperature units (e.g. the unit proposed by the City of Tallahassee) it is more difficult to achieve low NO_x emissions on these units with firing temperatures of 2400 F. Compensating for this is the higher electrical power output, for a given heat input, therefore on a (lbs of NO_x emissions) / (KW-hr) basis, the more efficient units may not be at a disadvantage to the lower firing temperature units.

Nitrogen Oxides (NO_x) emissions will be controlled by using GE's DLN-2 which is a second generation dry low NO_x burner technology for the high firing temperature frame units. The firing temperature on the Frame 7FA combustion turbine is 2400 F. When firing natural gas, the combustor operates in a diffusion mode at low loads (less than 50% of capacity) and in a premixed mode at high loads. When firing fuel oil, the combustors are operated in a diffusion mode at all loads and diluent injection (water) is used to control NO_x formation. The DLN-2 control system regulates fuel distribution to the primary, secondary, tertiary and quaternary fuel systems for each of the five combustors. As the combustion turbine is started and operated through the full range, the diffusion, piloted premix, and premix flames are established by changing the distribution of fuel flow in the combustors. Fuel and air flow to the combustors are controlled by GE's Speedtronic control system. GE's Mark IV control system will be used to continuously maintain the NO_x concentration in the exhaust at the specified level throughout the range of loads and ambient conditions. This system receives inputs from a compressor inlet temperature and humidity sensor, load sensors, speed sensors, and ambient pressure sensors.

SULFUR DIOXIDE (SO₂)

SO₂ control processes can be classified into five categories: fuel/material sulfur content limitations, absorption by a solution, adsorption on a solid bed, direct conversion to sulfur, or direct conversion to sulfuric acid.

A review of the BACT determinations for combustion turbines as contained in the BACT Clearinghouse shows that the exclusive use of low sulfur fuels constitutes the top control option for SO₂. The applicant has proposed the exclusive use of natural gas or distillate fuel oil with sulfur content limited to 0.05% by weight. This is considered BACT for this project.

PARTICULATE MATTER (PM/PM₁₀)

A technology review indicated that the top control option for PM₁₀ is a combination of good combustion practices, fuel quality, and filtration of inlet air. The applicant has proposed this top control option. In

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

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addition, GE indicates that the PM₁₀ emissions will not exceed 9 lb/hr (0.0058 lb/mmBtu) for natural gas and 17 lb/hr (0.0096 lb/mmBtu) for low sulfur distillate fuel oil exclusive of background dust loadings. Because these low emission levels are difficult to reliably measure by EPA reference methods over a one hour test period, BACT is not an emission limit but is based on good combustion practices and the exclusive use of clean, low sulfur fuels. The emission control technology for PM₁₀ will be good combustion practices and the use of only low sulfur, and low ash content fuels including natural gas and distillate fuel oil containing no more than 0.05% sulfur by weight. The inlet air for the combustion turbine will be filtered to protect the internal components from wear. This filtration may also reduce PM₁₀ emissions. Good combustion practices shall be implemented by using computer monitored and controlled systems with appropriate alarms for improper operating parameters. Proper tuning and operation of the dry low NO_x burner system shall be employed to minimize products of incomplete combustion (PM₁₀, VOC, and CO) while meeting the NO_x emission limit.

BACT for the cooling tower is the use of drift eliminators to control PM/PM₁₀ emissions from the cooling tower drift losses.

CARBON MONOXIDE(CO)

The most stringent control technology for CO emissions is the use of an oxidation catalyst. The city evaluated the use of an oxidation catalyst designed for 90 percent reduction and having a two year catalyst life. The oxidation catalyst control system is estimated to increase the capital cost of the project by \$1.5 million and results in an incremental cost effectiveness of \$7,720 per ton of CO reduced. In addition, there will be a reduction in the unit's output by as much as 0.5% or 1.25 MW due to the increased pressure drop across the catalyst. The catalyst may also result in an increase in the oxidation of SO₂ to SO₃ which combines with moisture in the exhaust to form sulfuric acid mist. This impact is not considered significant. The catalyst life is limited and may result in an additional solid waste load to the local landfill if the catalyst can not be rejuvenated by the manufacturer. This control option is not considered cost effective. The second most stringent control option, combustion controls and good combustion practices is considered BACT for this project. Carbon monoxide (CO) will be controlled by proper tuning of the dry low NO_x burner system and good combustion practices. Operation of the dry low NO_x burner system shall be optimized in order to minimize CO emissions while keeping NO_x emissions below the emission limit. Low load operation will result in the highest levels of CO emissions (ppm and lb/hr). The BACT emission limit for CO, 25 ppm for gas and 90 ppm for fuel oil, was set at the level which could be achieved for worst case operation i.e., low load operation (50% load) so that the full range of operation of this unit could be employed. It may be cost effective to conduct annual CO emission tests concurrent with the annual relative accuracy test audits (RATA) which are conducted at 50 % load or higher. According to GE's data, operation at higher loads should result in CO emissions which are at or below 10 ppmvd when firing natural gas.

APPENDIX BD BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

BACT DETERMINATION RATIONALE:

The BACT emission level chosen for NO_x, 12 ppm and compliance by CEM, is equal to the basis for the 165 MW units (simple cycle rating) at for FPC's Hines Energy Center and is the lowest NO_x limit to date in Florida. In contrast to unit 8, the Hines Energy Center units are not required to demonstrate compliance on a continuous basis but EPA Method 20 is required once per year. Selective Catalytic Reduction (SCR) was not considered cost effective for the city of Tallahassee. SCR is an add on NO_x control technology which requires ammonia injection and the installation of a catalyst bed downstream of the combustion turbine. Because combustion turbines pump large volumes of exhaust gases, the pressure drop introduced by the catalyst causes significant energy losses on these large industrial combustion turbines. Water usage associated with an SCR system would increase by 136,000 gallons per year.

BACT for SO₂ emissions from the combustion turbine was based on the top control option which is the exclusive use of low sulfur distillate fuel oil and pipeline quality natural gas. These fuels are the lowest sulfur fuels available anywhere. This BACT will also insure that ambient SO₂ impacts on the nearby St. Marks Class I area are minimized to the greatest extent possible.

BACT for PM₁₀ was determined to be good combustion practices, inlet air filtering, and clean, low ash and low sulfur fuels which is the only feasible PM₁₀ control technology for combustion turbines. Particulate matter is generated by various physical and chemical processes during combustion and will be affected by the design and operation of the NO_x controls. The particulate matter emitted from this unit will all be less than 10 micrometers in diameter (PM₁₀). Common control devices for stack gases include settling chambers, inertial separators, impingement separators, wet scrubbers, fabric filters, and electrostatic precipitators. Fabric filters (baghouses) and electrostatic precipitator (ESPs) have not been used on combustion turbines mainly due to the low particulate loadings and the increased back pressure. Filtering of the compressor inlet air and good combustion practices constitute the top control option for combustion turbines firing natural gas or low sulfur distillate fuel oil. The applicant has proposed this top control option. This is considered BACT for this project.

The city evaluated the use of an oxidation catalyst designed for 90 percent reduction of CO and would have a two year guaranteed catalyst life. The oxidation catalyst control system is estimated to increase the capital cost of the project by \$1.5 million and results in an incremental cost effectiveness of \$7,720 per ton of CO reduced. In addition, there will be a reduction in the unit's output by as much as 0.5% or 1.25 MW due to the increased pressure drop across the catalyst. The catalyst may also result in an increase in the oxidation of SO₂ to SO₃ which combines with moisture in the exhaust to form sulfuric acid mist. This impact is not considered significant. The catalyst life is limited and may result in an additional solid waste load to the local landfill if the catalyst can not be rejuvenated by the manufacturer. This control option is not considered cost effective. The second most stringent control option, combustion controls and good combustion practices is considered BACT for this project. The BACT emission limit for CO, 25 ppm for gas and 90 ppm for fuel oil, was set at the level which could be achieved for worst case operation i.e., low load operation (50% load) so that the full range of operation of this unit could be employed. It may be cost effective to conduct annual CO emission tests concurrent with the annual relative accuracy test audits

**APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)**

(RATA) which are conducted at 50 % load or higher. According to GE's data, operation at higher loads should result in CO emissions which are at or below 10 ppmvd when firing natural gas.

BACT DETERMINATION BY DEP:

Based on the information provided by the applicant and the information searches conducted by the Department, lower emissions limits can be obtained employing the top-down BACT approach for SO₂, NO_x, PM₁₀, and CO.

PM₁₀ DETERMINATION

Filtering of the compressor inlet air and good combustion practices while firing low sulfur fuels (natural gas or distillate fuel oil with no more than 0.05% sulfur content).

BACT for the cooling tower is the use of drift eliminators to control PM/PM₁₀ emissions from the cooling tower drift.

SO₂ DETERMINATION

The exclusive use of pipeline quality natural gas or distillate fuel oil with sulfur content limited to 0.05% by weight is considered BACT for this project.

NO_x DETERMINATION

An emission limit of 12 ppmvd corrected to 15% oxygen is considered BACT. Compliance shall be demonstrated on a 30 day rolling average basis using the NO_x CEMS system. Emissions during startup (including fuel switching), shutdown and malfunction shall be excluded from the calculation of these 30 day rolling averages provided the operator minimizes the occurrence, magnitude, and duration of excess emissions pursuant to 62-210.700 Florida Administrative Code (version dated 10/15/96). Excess Emissions during these transient periods shall be reported semiannually to the Department pursuant to 40 CFR 60.7. Subject to EPA approval, excess emissions shall be reported based on the NO_x CEMS data in lieu of the water/fuel monitoring specified in 40 CFR 60.334. When monitoring data is not available, substitution for missing data shall be handled as required by Title IV (40 CFR 75) to calculate of the 30 day rolling average.

CO DETERMINATION

Carbon monoxide (CO) will be controlled by proper tuning of the dry low NO_x burner system and good combustion practices. Operation of the dry low NO_x burner system shall be optimized during the initial compliance test and as at other times as needed in order to minimize CO emissions while keeping NO_x emissions below the emission limit. The BACT emission limit for CO, 25 ppm for gas and 90 ppm for fuel oil, was set at the level which could be achieved for worst case operation i.e., low load operation (50%

APPENDIX BD BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

load) so that the full range of operation of this unit could be employed. It may be cost effective to conduct annual CO emission tests concurrent with the annual relative accuracy test audits (RATA) which are conducted at 50 % load or higher.

OTHER POLLUTANTS

Visible Emissions shall be limited to 10 % opacity as a secondary and ongoing indicator of PM₁₀ emissions.

The BACT emission levels established by the Department are as follows:

Table 1-1: Air Pollutant Standards and Terms

<u>POLLUTANT</u>	<u>EMISSION LIMIT</u>
	<i>Natural Gas / Fuel Oil</i>
Particulate Matter (PM ₁₀)	good combustion of clean, low sulfur fuels drift eliminators for the cooling tower
Visible Emissions	10% opacity / 10 % opacity
Carbon Monoxide	25ppm / 90 ppm
NO _x (30 day rolling average)	12 ppm @ 15 % O ₂ / 42 ppm @ 15% O ₂
SO ₂	natural gas / limit of 0.05% sulfur by weight

Table 1-2: Compliance Procedures

<u>POLLUTANT</u>	<u>COMPLIANCE DETERMINED BY</u>
Visible Emissions	Method 9
Carbon Monoxide	Method 10 (can conduct concurrent with RATA testing)
NO _x (30 day rolling average)	NO _x and O ₂ CEMS
SO ₂	ASTM D 3246 gas / ASTM D 4294 fuel oil or other gas and fuel oil test methods in 40 CFR 60

**APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)**

DETAILS OF THE ANALYSIS MAY BE OBTAINED BY CONTACTING:

Martin Costello, PE II or
A. A. Linero, Administrator, New Source Review Section
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended By:

Approved By:

C. H. Fancy, P.E., Chief
Bureau of Air Regulation

Howard L. Rhodes, Director
Division of Air Resources Management

Date:

Date:

Purdom Unit 8

BACT DETERMINATION REQUESTED BY THE CITY OF TALLAHASSEE

TABLE 4-8
SUMMARY OF PROPOSED BEST AVAILABLE CONTROL TECHNOLOGY

Pollutant	Proposed BACT
<i>Carbon Monoxide (CO)</i>	Good Combustion Practices
<i>Particulate Matter (TSP)</i>	Fuel Quality (Clean Pipeline Quality natural gas and No. 2 (0.05% S), diesel fuel oil, Good Combustion Practices, and Combustion Inlet Air Filtration
<i>PM₁₀</i>	Fuel Quality (Clean Pipeline Quality natural gas and No. 2 (0.05% S), diesel fuel oil, Good Combustion Practices, and Combustion Inlet Air Filtration
Sulfur Dioxide (SO ₂)	Fuel Quality (Clean Pipeline Quality natural gas and No. 2 (0.05% S), diesel fuel oil.
Sulfuric Acid Mist (H ₂ SO ₄)	Fuel Quality (Clean Pipeline Quality natural gas and No. 2 (0.05% S), diesel fuel oil.
Nitrogen Oxides (NO _x)	Fuel Quality (Clean Pipeline Quality natural gas and No. 2 (0.05% S), diesel fuel oil and Good Combustion Practices including Dry-Low Ox Combustors and Water Injection
Volatile Organic Compounds (Including Benzene)	Good Combustion Practices
Trace Metals Lead (Pb) Beryllium (Be) Mercury (Hg) Arsenic (As)	Fuel Quality (Clean Pipeline Quality natural gas and No. 2 (0.05% S), diesel fuel oil and Combustion Inlet Air Filtration
Total Fluorides (Fl)	Fuel Quality (Clean Pipeline Quality natural gas and No. 2 (0.05% S), diesel fuel oil.
<i>Cooling Tower (TSP & PM₁₀)</i>	Drift Eliminators (0.002 percent - Recirculation Water)
Source: Foster Wheeler Environmental, 1997	

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**SPEAKER CARD
DEP PUBLIC MEETING
OCTOBER 30, 1997**

(please print)

NAME: Mike Stewart - Co. Comm's.

ADDRESS:

**SPEAKER CARD
DEP PUBLIC MEETING
OCTOBER 30, 1997**

(please print)

NAME: ED MILLS

ADDRESS: 2246 SPRING CREEK
CRAWF FL 32327

Yellow shirt

Ron Mowery
Attorney for Wakulla County

Mr. Rob McGarrah ■ 2602 Jackson Bluff Road ■ Tallahassee, FL 32304
 by voice mail: 904-891-5585 ■ or by E-mail: purdom8@sc.ci.tlh.fl.us



Entrance to the Sam O. Purdom Generating Station

year to the General Fund to be used for a wide variety of City services, from parks and recreation to law enforcement. This revenue source is especially important to Tallahassee, as the state capital, because so much of the commercial (office) property in the City is government-owned and therefore tax exempt. So, by contributing revenues to help run the City, the electric utility helps to maintain the quality of life for Tallahassee citizens while keeping property taxes low.

Protecting the Environment

In the past, Tallahassee residents have made it clear that environmental protection is a primary value in planning for future electric generation needs. As a result, specifications for Purdom Unit 8 have included clean fuels (specifically, natural gas) and an environmentally sensitive design.

Protection of the environment is also an important value in Wakulla County, where the Purdom Station is located. Situated on the west bank of the St. Marks River and directly across the river from the St. Marks National Wildlife Refuge, the Purdom Station has the potential to affect water quality, habitat quality and the aesthetics of the area. The design of Purdom Unit 8 has incorporated specific features for the protection and enhancement of those natural resources. These design features include technology to limit air pollutant emissions and eliminate the need for a discharge of heated water from Unit 8 into the St. Marks River. The project includes a zero discharge plant that will recirculate and reuse cooling water and plant process waters, eliminating wastewater discharges. In addition, the design calls for reuse of existing sanitary wastewater from the local area, thus reducing discharges of this wastewater into the St. Marks River.



The Purdom Generating Station's Importance to the Local Economy

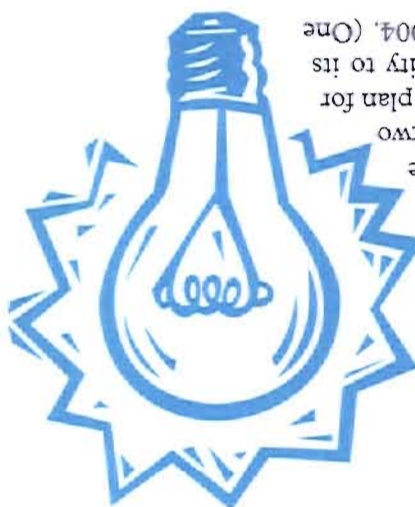
The Purdom Station contributes to employment in St. Marks, generates income for local businesses, and provides in-kind services such as fire fighting equipment and support to the oil spill response capability of the St. Marks Oil Spill Response Cooperative. The City of Tallahassee is committed to being a good neighbor to the City of St. Marks and Wakulla County and will be working closely with local government officials to make sure that their concerns and ideas are taken into account as the project moves forward in the permitting process.



What is Happening?

Need for Power

The City of Tallahassee is considering the installation of new, advanced power generating equipment (referred to as Unit 8) at its existing Purdom Generating Station in St. Marks, Florida. The need for additional power is due to increases in the demand for electricity and the anticipated expiration within the next six years of two contracts for purchased power. The City needs to plan for the addition of about 88 megawatts of electricity to its system by 2000 and about 160 megawatts by 2004. (One megawatt of electricity serves about 200 homes.)



In addition, some of the generating equipment within the City's electric system needs to be retired and replaced because of its age. And with increasing competition in the electric utility industry, the City needs to take advantage of the availability of new, highly efficient, clean technology to maintain competitive electric rates while protecting the environment.

Continuing the Commitment to Conservation and Load Management

Although the City continues to be committed to conservation and load management as a way to slow the growth in electricity demand and conserve energy resources, these programs are not sufficient to eliminate the need for additional generating capacity.

The Electric Department's Mission

The key components of the City of Tallahassee Electric Department's mission are to:

- Provide high quality, reliable, competitively priced electric services within our retail and wholesale market areas, and
- Improve the quality of life in Tallahassee by valuing our customers, workforce and community.

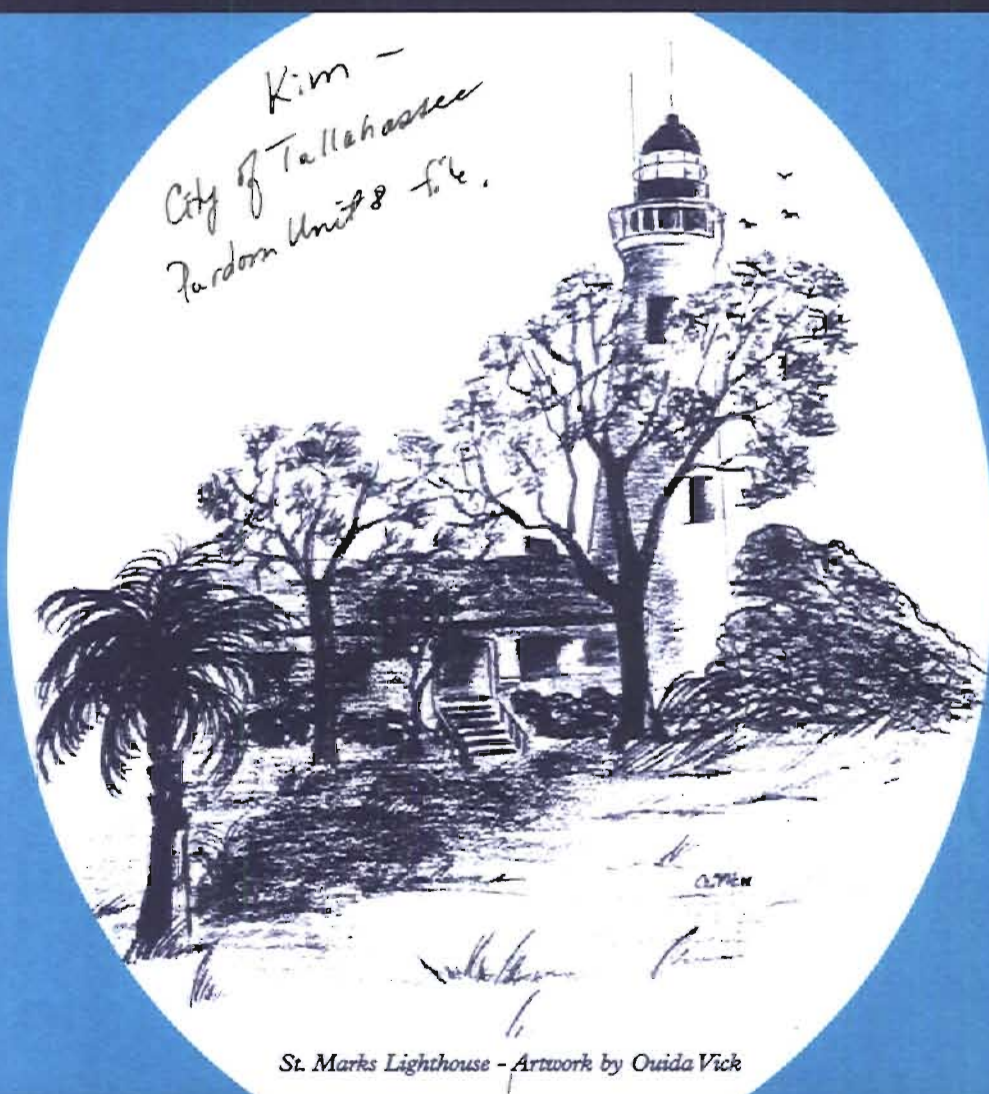
To achieve this mission, the City needs to plan for the future. Purdom Unit 8 will help ensure that a reliable supply of competitively priced electricity is available to Tallahassee customers well into the next century.

How Could This Affect You?

The City's electric utility currently provides about \$35 million each

Electric Department Revenues Support City Services

Sam O. Purdom
 Generating Station - Unit 8



St. Marks Lighthouse - Artwork by Ouida Vick

St. Marks, Florida



Aerial view of the St. Marks River from Purdom Generating Station

What Would Happen If the New Power Plant Were Not Built?

Meeting Customer Needs Efficiently and Cost-Effectively

Recent extreme winter temperatures caused the City of Tallahassee to reach its projected 2002 peak demand level six years earlier than expected. Because there is a variety of options available for meeting electricity demand, it is likely that some way would be found to meet the City's needs even if the new unit were not built at Purdom. However, in that case the City's needs would not be met with the most cost-effective option, and the benefits associated with the installation of the new unit at Purdom would not be realized.



Old Spanish fort at confluence of St. Marks and Wakulla Rivers

Maintaining Adequate Reserves

In addition, if there were some delay in implementing an alternative option, the utility could be forced to operate for a time without adequate reserve margins. That means that supplies could fall short if especially high peak demands or unexpected outages occur.

In the short term, if there were a shortage, the City would first try to meet customers' needs with power purchases from the statewide electric grid. If sufficient supplies were not available, rotating blackouts could occur. Rotating blackouts involve deliberately curtailing power to parts of the City for brief periods of time so that the system does not have to supply the full customer load all at once. In addition to the inconvenience of rotating blackouts, it is possible in these situations for overloaded equipment to fail, ultimately resulting in a full blackout.



Posey's - Home of the Topless Oyster

What Has Been Done So Far?

Integrated Resource Planning

In 1994, the Tallahassee Electric Department began a review of customer electricity requirements, fuel price forecasts and resulting resource needs. The City's system planning process utilized Integrated Resource Planning (IRP) modeling and procedures to ensure that the best choices in resources, considering both new generation and energy conservation, were blended to provide the least cost plan.

During the initial stages of the planning process, a citizens committee was utilized to identify the types of conservation programs and generation alternatives that should be considered and the criteria that should be used in framing the final recommendations for consideration by the City Commission. The results of the planning process showed that:



Shields Marina

- there was a need for additional power supplies beginning in 2000;
- recent advances in available electric generating technology provided an opportunity for the City of Tallahassee's customers to benefit by installing a new combined cycle unit and retiring older, less efficient units earlier than scheduled; and
- the appropriate size of the new unit for the City of Tallahassee's electric system would be up to 250 megawatts.

Competitive Bidding Process

Following the identification of the Year 2000 need, the City voluntarily embarked on a competitive solicitation process by issuing a Request for Proposals (RFP) to secure the additional power supply resources. This process allowed independent developers and other electric utilities to provide proposals for meeting the City of Tallahassee's need. In addition, the City of Tallahassee developed two "self-build" alternatives using a team of City Electric Department staff and outside consulting engineers with expertise in power plant design, permitting, construction and operation.



St. Marks Community Center

Advantages of the Purdom Proposal

The self-build team submitted their proposal on Purdom Unit 8 for comparison with the other outside proposals. Based on the following key advantages, the Purdom proposal was the clear winner in the competition:

- A 20-year net present value (NPV) cost that was approximately 16 percent lower than the next lowest cost proposal
- The ability to avoid payment of stockholder profit normally included in any proposal made by a taxable entity
- The project's eligibility for tax exempt financing
- The ability to optimize staffing and share common facilities because of the project's location at an existing power plant site
- The detail in the City of Tallahassee's alternative, which enabled a more definitive assessment of potential environmental impact and risk
- The availability of an existing site already owned by the City of Tallahassee and properly designated on the City of St. Marks' comprehensive plan and zoning maps
- The project's location at a site already connected to the City of Tallahassee's power grid so that no new transmission facilities would need to be constructed



Steps in the Power Plant Permitting Process

Power plants of the size of Purdom Unit 8 are permitted under the Florida Electrical Power Plant Siting Act. That process, slated to take about two years, is just beginning as this document is being printed. The following shows the steps in the process and the approximate time frame for completion of those steps.

Preparation of the Application	July 1996 through Feb. 1997
Application Filing	Feb. 1997
Application Sufficiency Review	Feb. 1997 through June 1997
Agency Review	June 1997 through Oct. 1997
Filing of Agency Reports	Sept. 1997
Filing of DEP's Report	Oct. 1997
Certification Hearing	Jan. 1998
Filing of Hearing Officer's Recommended Order	March 1998
Decision by Governor and Cabinet	May 1998

We Need Your Input

The Power Plant Siting Act provides for public notices of the application filing and the certification hearing in the form of large newspaper ads. Public comment will be taken during the certification hearing, and the public is allowed to speak briefly before the Governor and Cabinet take action on the final site certification.



In addition to the formal mechanisms for public notice and public participation provided for in the Power Plant Siting Act, the City of Tallahassee welcomes public input and has developed a program to meet with citizens, share information about the project and listen to citizens' views. This program includes public meetings, a Question and Answer column in "Insight" (the informational pamphlet included in customers' bills), a project newsletter, and other forums for the exchange of views. The City also welcomes the opportunity to make a brief presentation to interested civic, neighborhood, and business groups and will continue to meet with local government and agency representatives as requested or as needed to keep them informed.



A voice mailbox and E-mail address have been established for citizen inquiries about the project. For questions or comments, call or write to the following:



Mr. Rob McGarrah ■ 2602 Jackson Bluff Road ■ Tallahassee, FL 32304
by voice mail: 904-891-5585 ■ or by E-mail: purdom8@sc.ci.th.fl.us

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
TWIN TOWERS OFFICE BUILDING
2900 CLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

P 265 659 370



Commissioner Warren Crum, Chairman
P O Box 38
Panacea, FL 32346



1st Notice 6/8
2nd Notice 6/8
7-3

ed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

also wish to receive the following services (for an extra fee):

- 1. Addressee's Address
 - 2. Restricted Delivery
- Consult postmaster for fee.

3. Article Addressed to:

Commissioner Warren Crum, Chairman
P.O. Box 38
Panacea, FL 32346

4a. Article Number

P 265 654 370

4b. Service Type

- Registered Certified
- Express Mail Insured
- Return Receipt for Merchandise COD

7. Date of Delivery

5. Received By: (Print Name)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature: (Addressee or Agent)

X

Thank you for using Return Receipt Service.

to your RETURN ADDRESS

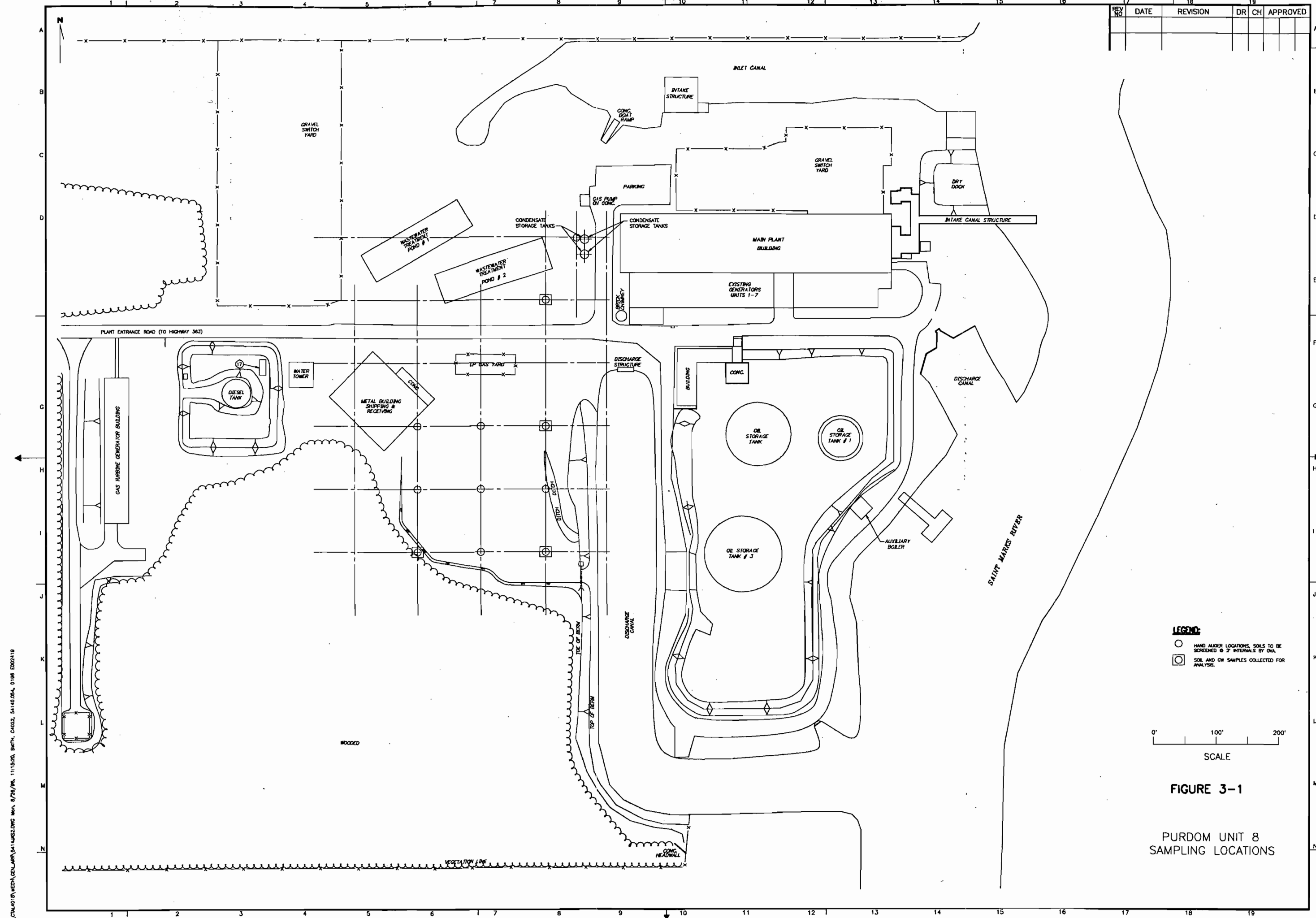
PS Form 3811, December 1994

102595-97-B-0179

Domestic Return Receipt



REV NO	DATE	REVISION	DR	CH	APPROVED



LEGEND:

- HAND AUGER LOCATIONS, SOILS TO BE SCREENED @ 2' INTERVALS BY OVA.
- SOIL AND OIL SAMPLES COLLECTED FOR ANALYSIS.

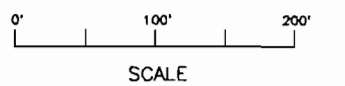


FIGURE 3-1

PURDOM UNIT 8
SAMPLING LOCATIONS

E:\CADD\01\BETA\GEN\APP\541\MISC\DWG.MXD 8/20/04 11:15:20 AM 11:15:20 AM 54110.DWG 0106 EDD2419