



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

**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



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BUREAU OF
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- 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  10/18

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

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OCT 10 1996
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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

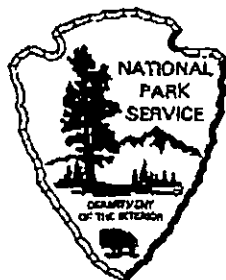
| | |
|-----------------------|----------------------------------|
| Mike Reffitt | Local 592 Plumbers & Pipefitters |
| George Tillman | Located 100 feet from property |
| Marie & Hugh Williams | |
| John Cooksey | |

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 reconductored 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
Purdom 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

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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

bcc:

FWS-REG. 4: AQC

SAMA: Refuge Manager

ARD-DEN: Ellen Porter

National Park Service - AIR

P.O. Box 25287

Denver, CO 80225

INTEROFFICE MEMORANDUM

al
Thanks John

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.

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)

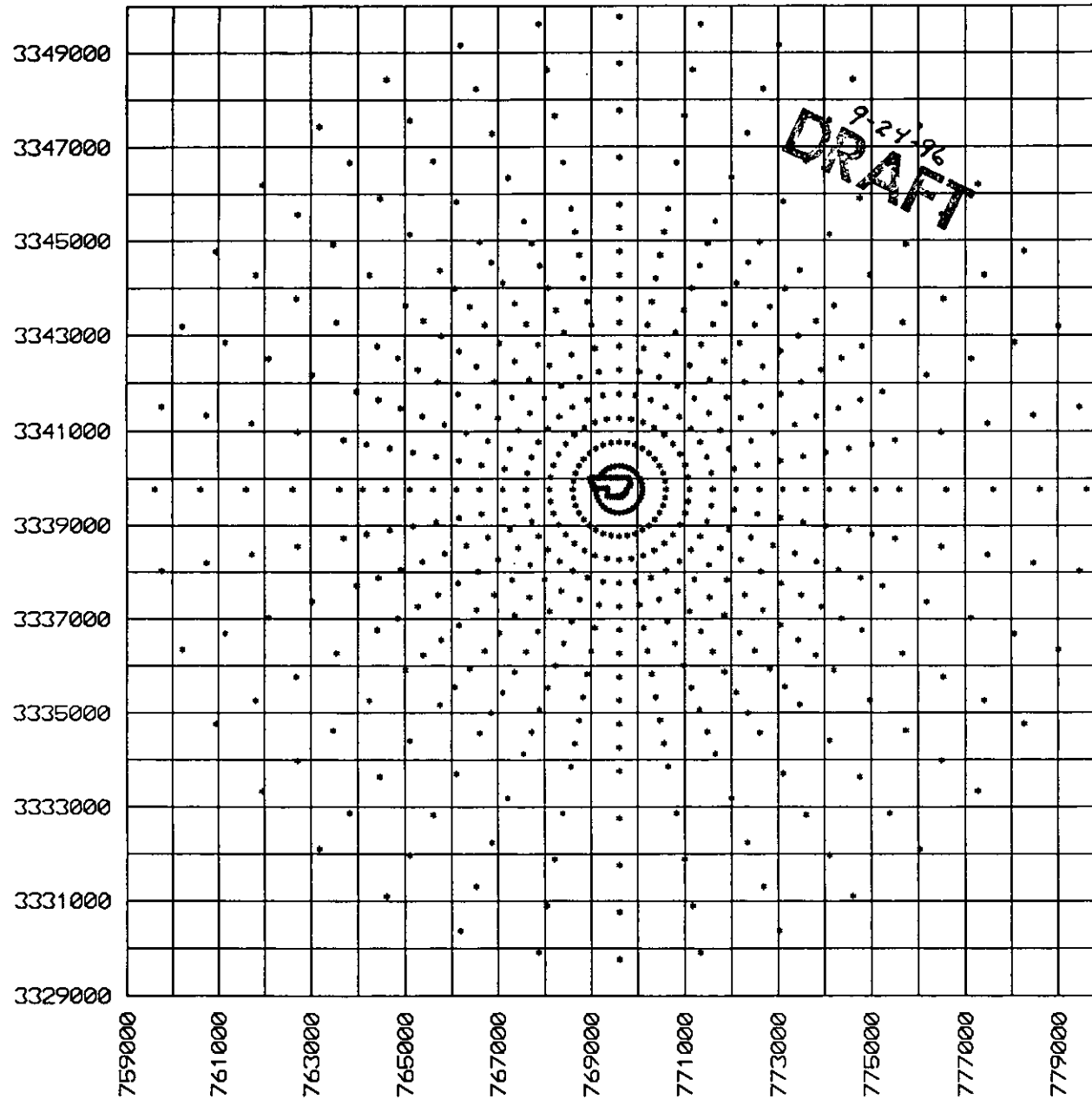
COT/DEP/USFS/USFWS MEETING
September 25, 1996

AGENDA

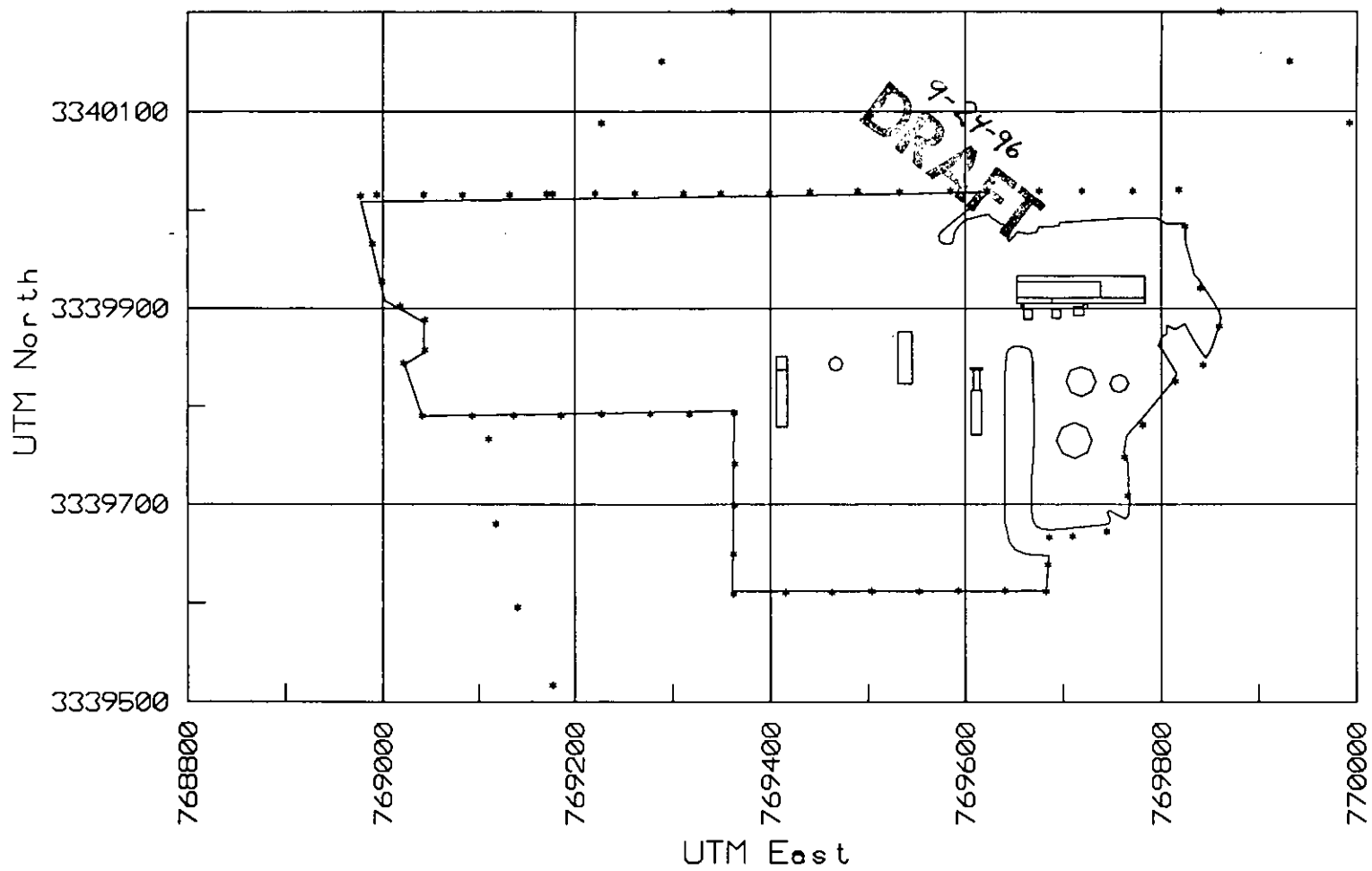
| | |
|---|----------------------|
| Introductions | J. Curtis |
| Purdom 8 Project Overview (Air Oriented) | R. McGarran |
| Plan of Study/Modelling Protocol Overview | D. Fulle |
| - Air Quality Issues | |
| - Air Quality Netting | |
| Facility-Wide Cap | A. Morrison |
| BACT Approach | D. Graziani |
| Modelling Approach | M. Bilello |
| Comments on Plan of Study/Protocol | DEP USFS USFWS |

• PSD

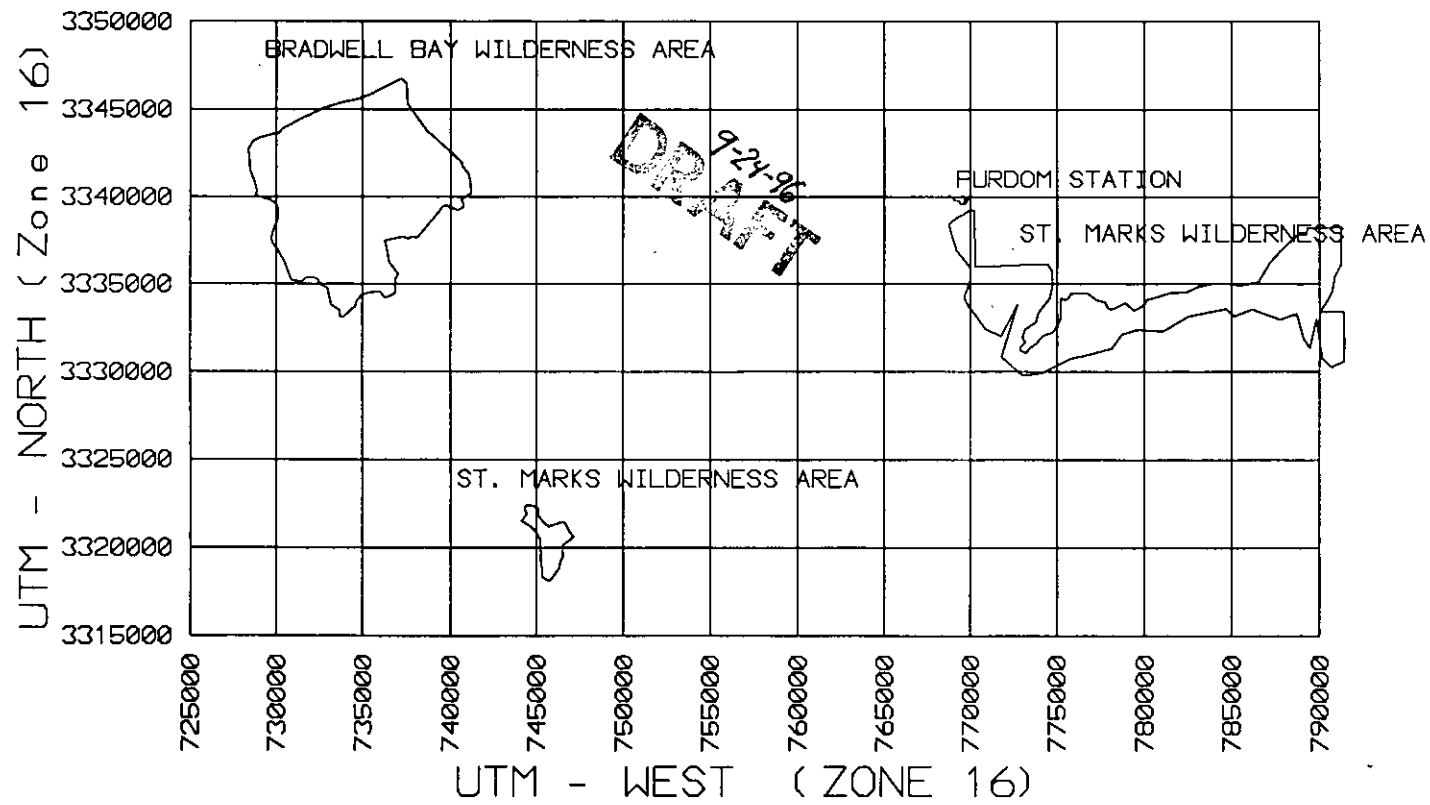
PURDOM UNIT 8 MODELLING RECEPTORS (COARSE GRID)



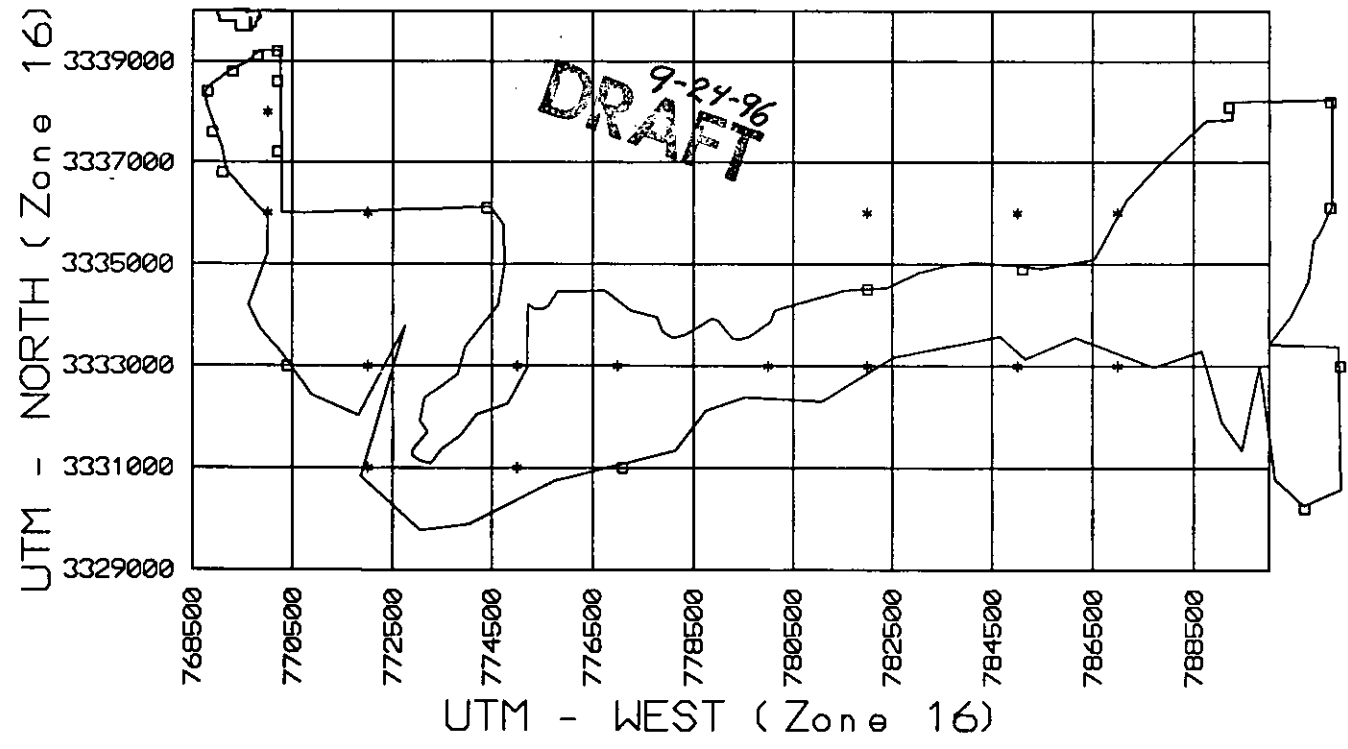
Purdom Station - BOUNDARY RECEPTORS



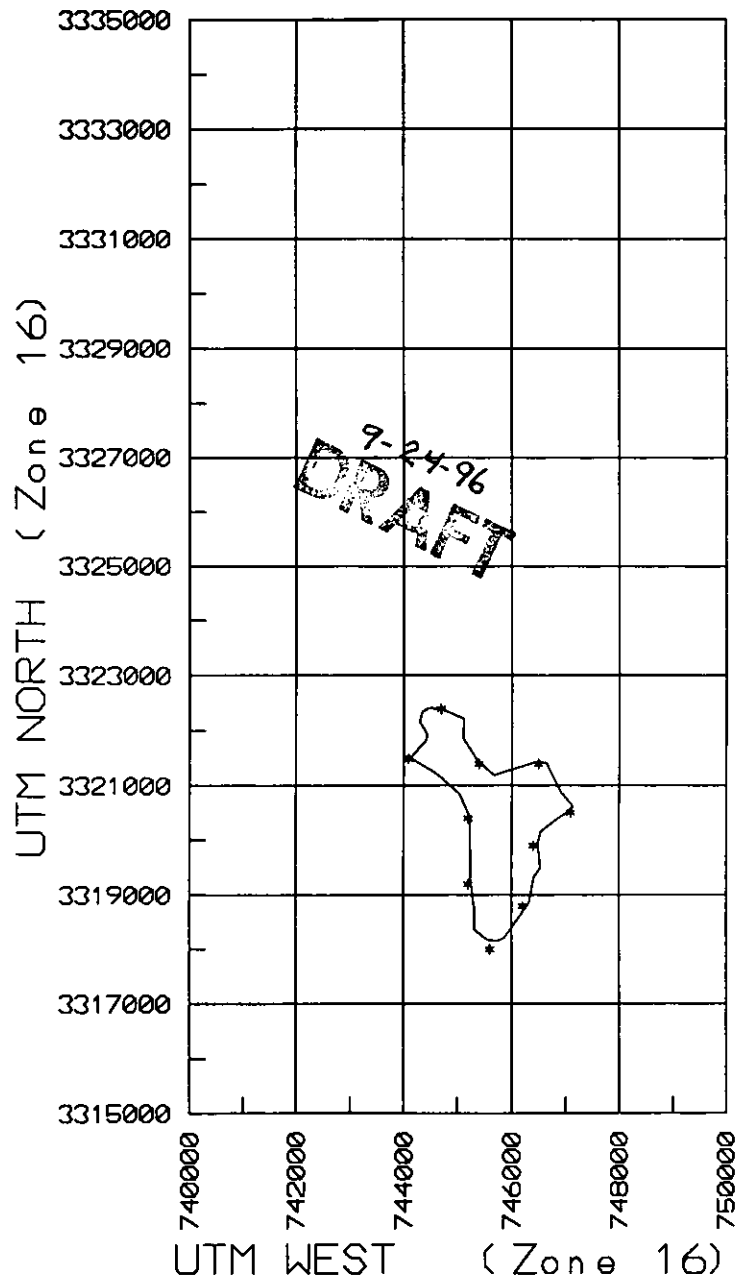
CLASS I AREAS



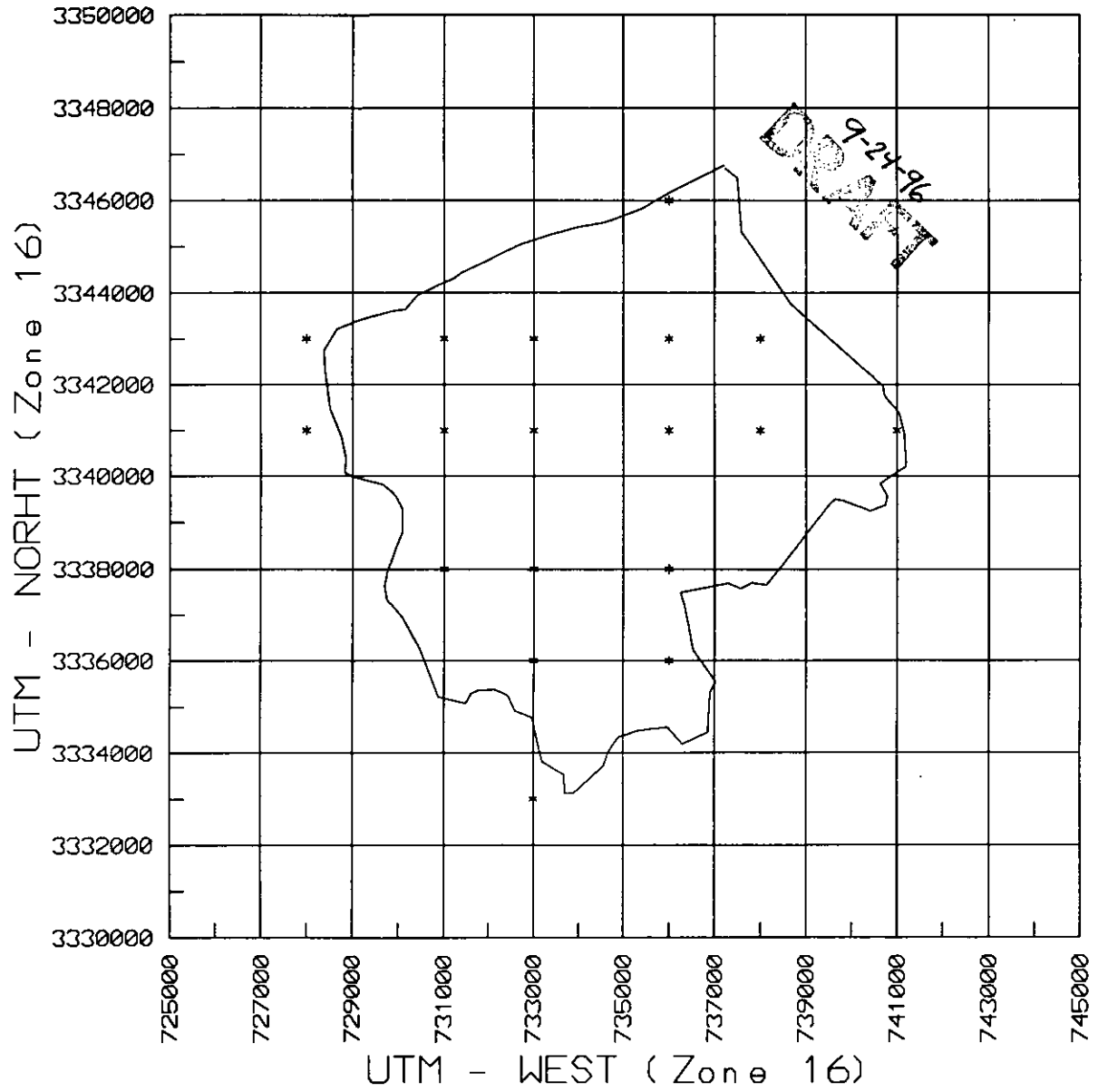
St. Marks Wilderness Area Receptor Locations



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

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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
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RON WEAVER
Mayor
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Mayor Pro Tem

JOHN PAUL BAILEY
Commissioner
DEBBIE LIGHTSEY
Commissioner
STEVE MEISBURG
Commissioner

STEVEN C. BURKETT
City Manager
ROBERT B. INZER
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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

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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\depos.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
Mayor Pro Tem

JOHN PAUL BAILEY
Commissioner
DEBBIE LIGHTSEY
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 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
Mantay

**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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RICARDO FERNANDEZ
City Auditor

ep

September 10, 1996

Mr. Dave Wergowske
National Forests in Alabama
U.S. Forest Service
2946 Chestnut Street
Montgomery, AL 36107-3010

RECEIVED
SEP 11 1996
BUREAU OF
AIR REGULATION

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 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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Joe White (USFWS), (w/o enclosure)
Rob McGarrah (COT), (w/o enclosure)

461 347-3059



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

RECEIVED

MAR 12 1993

RECEIVED

MAR 15 1993

RADIATION & TOXICS
OFFICE OF AIR AND RADIATION

MEMORANDUM

EPA REGION 111

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:

- 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 Kosia at 703-308-8733.

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 ^{0.02} | VENDOR QUOTE | - |
| INSULATION | N/A ^{0.01} | 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 - / CR) | N/A | \$225,612 |
| | | | \$461,215 |

TOTAL ANNUAL COSTS, \$/YR

\$1,518,676

TOTAL NET NOx 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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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