

November 22, 1999

To: Al Linero

From: Jerry Kissel 

RECEIVED

DEC 01 1999

BUREAU OF AIR REGULATION

Re: FPL Manatee Plant Proposed Burner Change,
FPL letter 10/22/99 and DEP letter in response 11/1/99

In 1994-1995 and occasionally since then, we have had various contacts with Mr. Clarence Troxell and his neighbors regarding a black gritty substance being deposited on their white tile roofs, which they believed to come from the Manatee plant. They have stated that the problem seemed to get significantly better around the time that the mechanical atomization burners were replaced with steam-atomized burners.

I received a call on the subject of the proposed conversion back to mechanically atomized burners from Mr. Troxell on 10/29/99, in which he expressed his concern that the proposed mechanically-atomized burners could worsen the deposition situation described above.

Please consider the above comments in your evaluation of this application. In terms of questions:

- 1) What are the effects of a change in burners in all operating modes, e.g., during soot blowing, during load changes, etc? Is there any mode in which fallout would increase? (note that FPL's letter discussed opacity, which does not necessarily always correlate with PM and fallout at a particular receptor, and also was oriented to "high loads at steady state conditions")
- 2) If this change is a "physical and operational change" as in your letter of 11/1/99, then should the change to steam atomization in 1994-1995 be reevaluated at this point, since it may have been done at the time without DEP's knowledge?

Thanks for the opportunity to comment.

c: Mr. Troxell
3321 Lakeside Circle
Parrish, FL 34219
941-776-3047

Manatee County EMD

fpl1199.doc

INTEROFFICE MEMORANDUM

Sensitivity: COMPANY CONFIDENTIAL

Date: 23-Nov-1999 07:12am
From: Alvaro Linero TAL 850/921-9523
LINERO_A@a1.epic1.dep.state.fl.us
Dept:
Tel No:

Subject: Re: FPL Manatee Burner Change

Gerry. Thanks for your comments.

The present project is a complete changeout of burners including atomizers. The new burners are like the ones at FPL Martin where there are apparently less problems. The new "Martin Type" burners with mechanical atomization are bound to be better than the existing burners with ~~mechanical~~ ^{steam} atomization.

The 1994-95 project was apparently implementation of steam atomization with the old burners.

My guess is they will have situation that is better than the pre-1995 case. A change may be a physical or operational change, but that does not necessarily make it a modification with respect to NSPS or PSD. There needs to be an emissions increase. Even Clarence seems to say things got better.

Even if the new project increases one pollutant a little bit (which I don't necessarily believe it does), the decreases in NOX would probably qualify it as a pollution control project.

Your comments are appreciated. Just send them when you consider them final.

Thanks. Al.

Thanks, Al.
(I assume this is a typo)
(I didn't change the)
memo
JR
no not an error!
al



Jeb Bush
Governor

Department of INTEROFFICE MEMORANDUM Environmental Protection

Date: 09-Dec-1999 04:41pm
From: Mary Archer
Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000
mary.Archer@fpl.com
Dept.
Tel No:

David B. Struhs
Secretary

To: Alvaro.Linero (Alvaro.Linero@dep.state.fl.us)

Subject: Manatee Burner Change out response

Al

Attached is the response to your November 1, 1999 letter. A hard copy will be following in the mail shortly that includes drawings. Please do not hesitate to contact me with any questions at (561)691-7057. Thank you, Mary

(See attached file: PMT Brn Proj-FINAL 12-9-99.doc)

Mr. Al Linero
Bureau of Air Regulation
Department of Environmental Protection
2600 Blair Stone Rd. Tallahassee, Florida 32399-2400

Re: FPL –Manatee Plant
Proposed Burner Change-out
Response to Manatee Burner Replacement

Dear Mr. Linero:

I am writing in response to your letter of November 1, 1999 on the referenced subject. FPL continues to believe that replacement of the burners at Manatee Units No. 1 and 2 is not a physical or operational change under the definition of "modification" found at Rule 62-210.200(188), F.A.C. Rather, it should be viewed as routine replacement of component parts under subparagraph 1.a. of that definition, and thus specifically not considered a "modification". Agreement on this point is not critical to the Department's handling of this matter, however, as the burner replacement will not in any event result in an increase in the actual emissions of any air pollutant from the Manatee Plant (see information provided below). Moreover, the new source review requirements are also inapplicable because the burner replacement constitutes a "pollution control project" under Rule 62-212.400(2)(a)2., F.A.C.

For these reasons, no application for a construction permit is required for the proposed burner replacement. To the extent revision of the Manatee Plant's air operation permit is considered appropriate, we suggest any change would be descriptive only, and implemented as an administrative amendment.

In your email of 11/28/99 two issues were raised that I will attempt to address here. The primary purpose of the project is to improve our visible emission performance and increase the overall reliability of these burners. These two items would constitute the primary goal of the project to be pollution reduction. The change-out of the burners will reduce the emissions, however, the cost of generation will not improve in relationship to the rest of the fleet of plants, so, the unit will not change in it's dispatch order. The change to mechanical atomization will effect no change in the dispatch order of these units and consequently on their relative use. The combined changes will not change the use situation of the facility.

The following explanations are to address the questions in you letter of November 1, 1999.

1. Burner Type, Model, Diagram, Characteristics

Page of 3

FPL Manatee Plant Burner Replacement

December 9, 1999

The proposed burner is **CSL Low NOx Twin Register type**. This burner will be dual register design with separate sleeve type air dampers for the inner (primary) and outer (secondary) air passages (see Figure 1)

The principal of staging air and fuel in reducing NOx levels is well documented, and the associated design features are incorporated on the air side and fuel side of the burners. The air staging is accomplished by the dual register (two-zone) design, which partitions the air into two distinct regions with different flow and swirl characteristics. The fuel staging is accomplished by the design of the fuel oil atomizer tip, which develops fuel lean and fuel rich zones of atomized fuel oil into a number of flame regions, as shown in Figure 2.

2. Atomizer Characteristics

The atomizer will be a wide range mechanical atomizer, which uses a tip shut-off, constant differential pressure (spill) principle to achieve best combustion performance throughout the entire load range. The atomizer stages the fuel into several rich and lean zones, as described above. This design will be very similar to the configuration currently in use at the FPL's Martin Units 1 & 2. The fuel pressure design **range will be 1,100 Psig supply and 700 Psig return**. The burner gun assembly will be provided with a flow-reversing valve (see Figure 3) to control the oil supply to oil return differential pressure for firing or stand-by conditions, making the use of cooling and/or purge steam unnecessary. There will be no steam atomization capability with the proposed burners.

3. Manner of Emissions Reduction

NOx emissions from fuel oil firing arise mainly from two sources: the oxidation of nitrogen in the combustion air (thermal NOx) and the oxidation of the nitrogen contained in the fuel (fuel NOx). The formation of thermal NOx is strongly dependent on temperature, whereas fuel NOx is largely controlled by the air-fuel mixing process and associated residence time.

The proposed low NOx burner design recognizes these factors by incorporating staged combustion techniques. Instead of simple injection and rapid mixing of fuel and air, as achieved with the currently installed Forney burner, the air will be split into streams by the burner register, offering independent air staging. In addition, the fuel will be split into concentrated and weak flow streams to produce fuel rich and fuel lean flame regions, as previously discussed. Although the fuel will be staged into rich and lean zones for NOx reduction, the overall atomization quality (droplet size) will be reduced to achieve better burn-out. This design approach will not only reduce NOx emission (particularly at high loads) but also improve combustion performance from current conditions, which

Page of 3

FPL Manatee Plant Burner Replacement
December 9, 1999

will result in a net reduction of opacity and CO emissions, as indicated in our Notice of Intent on 18-Oct-99. Due to the improvement in opacity and CO emissions, it is expected that particulate emissions will improve slightly. No increase is anticipated in the acid smut or any SOx related emissions since the sulfur content in the fuel and excess air levels will remain the same.

4. Low Load Emission Impacts

There will be no increased emissions at low loads.

Martin Plant and Manatee Plant Proposed Burners, Fuel Capability, NOx Emissions, Relative Use

The burners presently used at the Martin Plant units are characterized as "Low NOx Burners (LNB's)"; this is a correct designation. "LNB's" is the proper designation for the proposed burners at the Manatee Plant.

The inherent design of the proposed burners, not a request for options from FPL, allows for natural gas compatibility as stated in our notice of intent. The present single fuel capability is retained, since there is no alternative fuel supply available and any fuel change would require permit modifications for this fuel type addition.

The lower Martin Plant NOx emissions are not the result of low NOx burners alone, but in conjunction with the dual-fuel capability.

The relative differences in heat input from Martin Plant 863 MW units and Manatee Plant 863 MW units are primarily due to differences in utilization based on dispatch requirements. The Martin and Manatee Plant four 863 MW units are dispatched based on fuel economics. Fuel market fluctuations between natural gas and fuel oil will dictate which units run first and longest. The change to mechanical atomization will effect no change in the dispatch order of these units and consequently on their relative use.

Thank you for your assistance in clarification of this issue for the Department. If you require any additional information, please do not hesitate to call me at 561-691-7057.

Sincerely,

Mary J. Archer, QEP
Principal Environmental Specialist

Page of 3
FPL Manatee Plant Burner Replacement
December 9, 1999

Florida Power & Light Company

cc: Florida Southwest District DEP – Jerry Kissel
cc: Manatee County – Air Quality Management Division

Cc: B.Yeager
L.French
K.Washington
M..Klein
J.Alcantara

(1)Attachment drawings

Draft Response Manatee Burner Replacement (1-Nov-99 ltr.)

Dear Mr. Linero:

I am writing in response to your letter of November 1, 1999 on the referenced subject. FPL continues to believe that replacement of the burners at Manatee Units No. 1 and 2 is not a physical or operational change under the definition of "modification" found at Rule 62-210.200(188), F.A.C. Rather, it should be viewed as routine replacement of component parts under subparagraph 1.a. of that definition, and thus specifically not considered a "modification". Agreement on this point is not critical to the Department's handling of this matter, however, as the burner replacement will not in any event result in an increase in the actual emissions of any air pollutant from the Manatee Plant (see information provided below). Moreover, the new source review requirements are also inapplicable because the burner replacement constitutes a "pollution control project" under Rule 62-212.400(2)(a) 2., F.A.C.

For these reasons, no application for a construction permit is required for the proposed burner replacement. To the extent revision of the Manatee Plant's air operation permit is considered appropriate, we suggest any change would be descriptive only, and implemented as an administrative amendment.

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The relative differences in annual heat input from Martin Plant 863 MW units and Manatee Plant 863 MW units are primarily due to differences in utilization based on dispatch requirements. The Martin and Manatee Plant four 863 MW units are dispatched based on fuel economics. Fuel market fluctuations between natural gas and fuel oil will dictate which units run first and longest. The change to mechanical atomization will effect no change in the dispatch order of these units and consequently on their relative use.



October 22, 1999

RECEIVED

OCT 25 1999

Mr. Clair Fancy, Chief
Bureau of Air Regulation
Department of Environmental Protection
2600 Blair Stone Rd. Tallahassee, Florida 32399-2400

BUREAU OF AIR REGULATION

Re: **FPL -Manatee Plant**
Proposed Burner Change-out
Notice of Intent

08/0010 -005-AC

Dear Mr.Fancy:

In response to the telephone conversations with Scott Sheplak on October 13, 1999 and Al Linero on October 14, 1999, this letter is provided as notice of Manatee Plant's intent to replace the existing burners. The replacement burners are planned for installation on Unit 2 in the spring of 2000 and on Unit 1 in the fall of 2000.

Background

The Manatee Plant's original burners were Forney Type "QPWRMA" with mechanical atomization and were "state of the art" in the late 1970's when they were installed. In late 1994 and early 1995 in an effort to increase the combustion efficiency of these burners, the plant changed from mechanical atomization to steam atomization. Due to the age of the burners, it has become somewhat difficult to acquire replacement parts. To improve our visible emission performance and increase the overall reliability of these burners, we would like to replace them with burners manufactured by ABB Combustion Services, Ltd (formerly International Combustion, Ltd). We have had very successful emission control and operating experience with this type of burner at our Martin Plant in Indiantown, Florida since 1985.

Benefits

The replacement burners will be better for the environment as addressed in the attached PE signed & sealed documents. We expect to achieve emission reductions in opacity, NOx, and CO. These emission reductions will be maximized during hours of high load operations typically associated with hot summer days. The replacement burners will be mechanically atomized. This will reduce the use of water by approximately 30-37 million gallons per year.

The replacement burners will be both more reliable and natural gas compatible to allow the option of fuel flexibility in the future. Proper permit modifications would be completed for any fuel type additions.

Page 2

Notice of Intent – Manatee Burner Change-out

Based upon the above facts, and as discussed in the telephone conversations of October 13 and 14, 1999, the only requirement for this matter is satisfied by this notice of intent. If you require any additional information, please do not hesitate to call me at 561-691-7057.

Sincerely,

A handwritten signature in cursive script, appearing to read "Mary J. Archer".

Mary J. Archer, QEP
Principal Environmental Specialist
Florida Power & Light Company

cc: Florida Southwest District DEP – Jerry Kissel
cc: Manatee County – Air Quality Management Division



Documentation of Emissions Reductions
Notice of Intent – Manatee Burner Change-out

Replacement Burner Emission Impact

There will be no increases in emissions. The following emission reductions are expected:

- **Opacity**
A reduction of 10-15 points in opacity at high loads during steady state conditions is anticipated. The permit limit for opacity is 40% at steady state conditions.
- **NOx**
A reduction between 20 to 30% in the average daily NOx emission rate is anticipated. This is achieved by lowering the NOx emission levels during the hours of high load operation. For example, on a typical hot summer day the total accumulative tons of NOx per unit will be reduced from 23 to 16, indicating a 30 % reduction as the maximum anticipated reduction of NOx. The permit limit for NOx is 0.30 lb/mmbtu based on a 30-day rolling average.
- **CO**
A reduction between 20 to 30% in the CO emission rate during the hours of high load operation is anticipated.

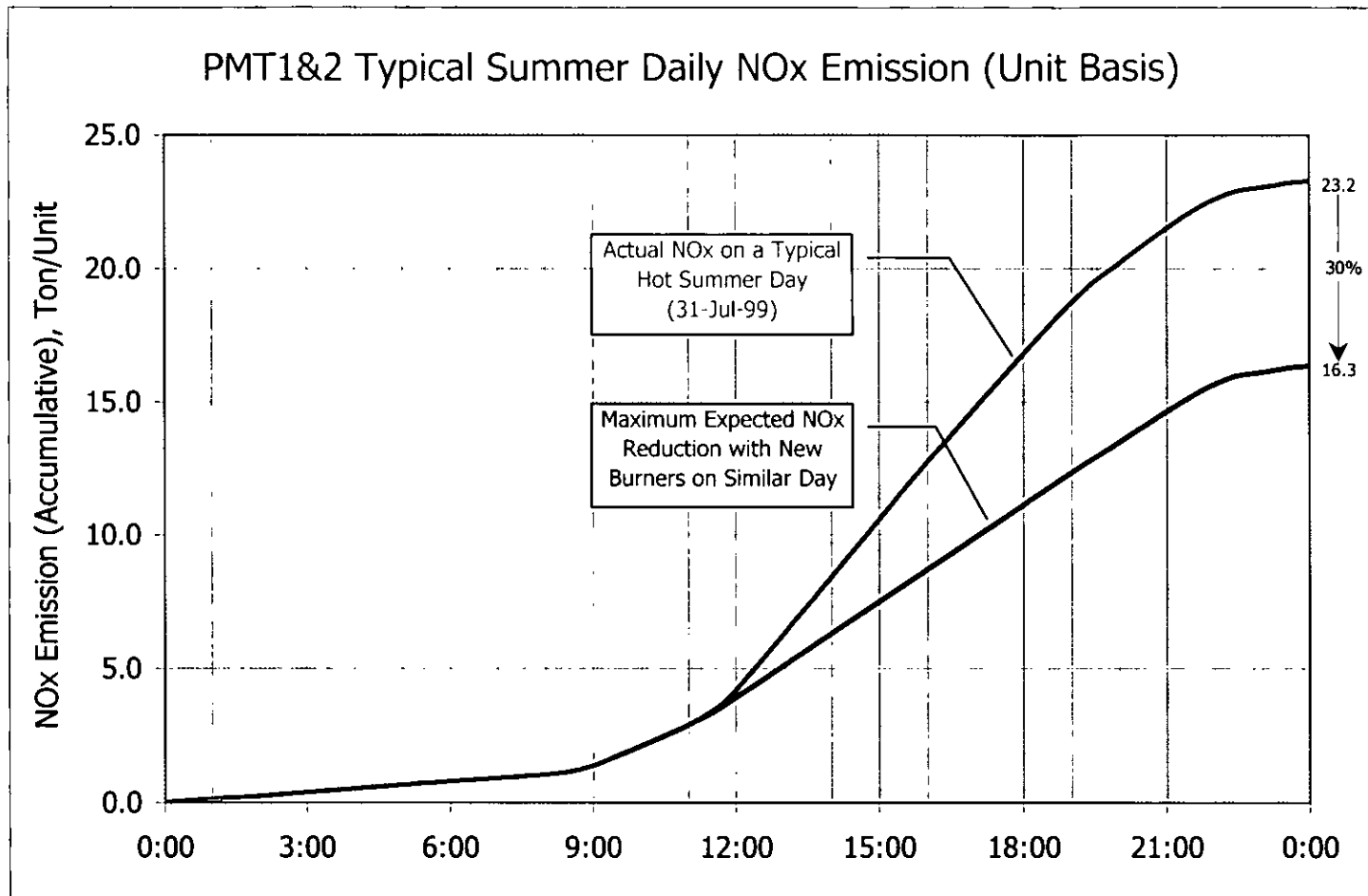
I, the undersigned, hereby certify, that: (1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions described in this notice will comply with all applicable standards for control of air pollutant emissions found in the current air operating permit including the Florida Statutes and rules of the Department of Environmental Protection; (2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are based upon reasonable techniques available for calculating emissions. (3) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions described in this notice will result in a reduction of emissions as identified in this notice.

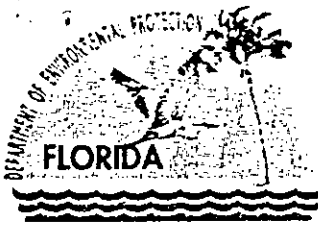
PE Signed and Sealed

Kathryn S. Salvador
Kathryn S. Salvador, Florida PE No. 54726

10/22/99
Date

PMT Emission Control Summary - Summer Daily NOx Emission (990731)





Jeb Bush
Governor

Department of Environmental Protection

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

David B. Struhs
Secretary

November 1, 1999

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Ms. Mary J. Archer, QEP
Principal Environmental Specialist
Florida Power & Light Company
Post Office Box 14000
Juno Beach, Florida 33408

Re: FPL Manatee Plant
Proposed Burner Change-out

Dear Ms. Archer:

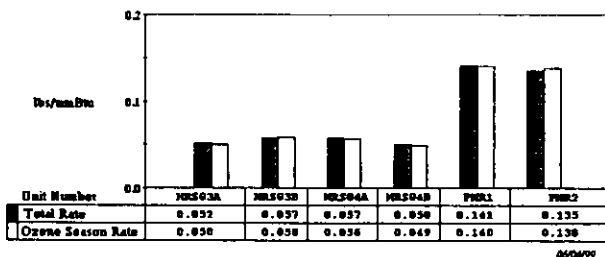
We have reviewed the Notice of Intent to replace the existing steam atomized oil burners with mechanically-atomized burners at the Manatee Power Plant. We have determined that the project is both a physical and operational change. More details regarding the project are required for reasonable assurance that emissions will not increase and that the project will not be a modification with respect to Department rules. Please provide the following information:

1. The type, model number, diagram, and characteristics of the proposed burners. This should describe how air and fuel are introduced and staged to minimize emissions.
2. Similar information regarding the actual mechanical atomizer. Include fuel pressure, operating ranges, and other typical characteristics. Advise if there will still be some steam-mechanical atomization at low load and low temperature.
3. An explanation of the manner by which emissions of carbon monoxide, particulate matter, nitrogen oxides, and visible emissions (including acid smut) are all simultaneously reduced.
4. Describe emissions impacts at low load.

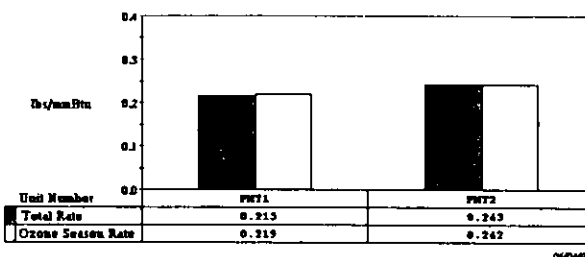
The attached figures from EPA provide some basic characteristics of the Manatee and Martin Plants. The burners presently used at the 863 MW Martin Plant units are characterized as "Low NO_x Burners (LNBs)." Please confirm this designation at Martin and advise if LNB is a proper designation for the proposed burners at the Manatee Plant. The figures also indicate dual-fuel capability at Martin and single fuel capability at Manatee. Please advise if this project will change the fuel burning capability at the Manatee Plant.

The following figures indicate that NO_x emissions are indeed substantially lower at the 863 MW Martin Plant units (PMR 1 and 2) than the Manatee units. Please advise if the lower emissions are actually believed to be the result of the LNBs alone or in conjunction with the dual-fuel capability.

**Martin FL Units HRSG3A, 3B, 4A, 4B, PMR1-PMR2
1997 NO_x Emission Rate**

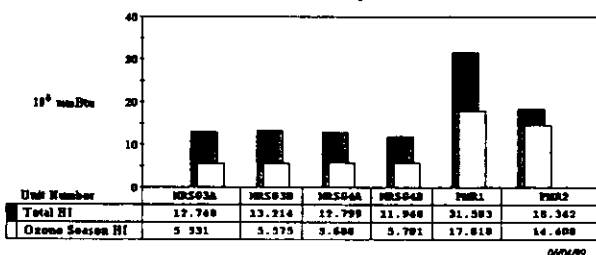


**Manatee FL Units PMT1-PMT2
1997 NO_x Emission Rate**

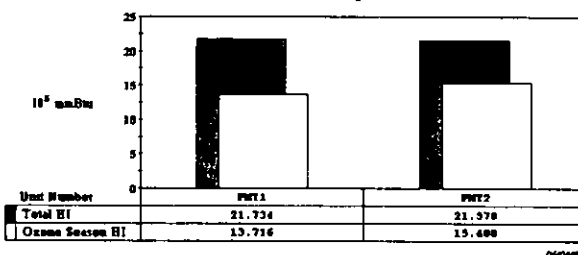


The following figures indicate that the total annual heat input is greater for the two 863 MW Martin Plant units than for the virtually-identical Manatee Plant units. Please provide a brief explanation and advise if the change to mechanical atomization will substantially affect the relative use of the Manatee units with respect to the 863 MW Martin units.

**Martin FL Units HRSG3A, 3B, 4A, 4B, PMR1-PMR2
1997 Heat Input**



**Manatee FL Units PMT1-PMT2
1997 Heat Input**



We are treating your Notice as an application. With the additional information, we will be able to issue or modify the appropriate permits to reflect the changes. If you have any questions, please contact me at 850/921-9523.

Sincerely,

A. A. Linero, P.E. Administrator
New Source Review Section

AAL/al

Cc: Bill Thomas, DEP SWD
Hamilton Owen, DEP PPSO
Karen Collins, Manatee County

US Environmental Protection Agency / Acid Rain Program

Plant Summary by Unit

Manatee Plant Florida

BOILER ID	BOILER TYPE	FUEL TYPE	NAMEPLATE CAPACITY	PEAKING?	CONTROLS		
					SO ₂	NO _x	NO _x INSTALL DATE
PMT1	DB	OIL	863	--	U	U	--
PMT2	DB	OIL	863	--	U	U	--

DB=Dry Bottom Wall-Fired (Front, Rear or Opposed) U=Uncontrolled

View Data for:

'1996 NO_x Data'1997 NO_x Data'SO₂ Data'CO₂ Data

'State Map'National Map'Help

[EPA](#) | [OAR](#) | [Acid Rain Program](#) | [Contact Us](#)http://www.epa.gov/acidrain/emission/fl/6042_sum.htm

Last updated May 28, 1999

US Environmental Protection Agency / Acid Rain Program

Plant Summary by Unit

Martin Plant Florida

BOILER ID	BOILER TYPE	FUEL TYPE	NAMEPLATE CAPACITY	PEAKING?	CONTROLS		
					SO ₂	NO _x	NO _x INSTALL DATE
PMR1	DB	OIL, G	863	--	U	LNB	--
PMR2	DB	OIL, G	863	--	U	LNB	--
HRSG3A	CC	G, D	250	--	U	O	--
HRSG3B	CC	G, D	250	--	U	O	--
HRSG4A	CC	G, D	250	--	U	O	--
HRSG4B	CC	G, D	250	--	U	O	--

DB=Dry Bottom Wall-Fired (Front, Rear or Opposed) CC=Combined Cycle U=Uncontrolled
 LNB=Low NOx Burner Technology O=Other

View Data for:

1996 NO_x Data 1997 NO_x Data SO₂ Data CO₂ Data

State Map National Map Help

[EPA](#) | [OAR](#) | [Acid Rain Program](#) | [Contact Us](#)

http://www.epa.gov/acidrain/emission/fl/6043_sum.htm

Last updated May 28, 1999

Fold at line over top of envelope to

IN 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):

- ☐ Addressee's Address
- ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Mary J. Archer, QEP
FPL
PO Box 14000
Gumbo Bch, FL 33408

4a. Article Number

2 031 391 993

4b. Service Type

- ☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery

5. Received By: (Print Name)

6. Signature: (Addressee or Agent)

X

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

Form 3811, December 1994

102595-98-B-0229

Domestic Return Receipt

Thank you for using Return Receipt Service.

2 031 391 993

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Service	
Mary Archer	
Street & Number	
FPL	
Post Office, State, & ZIP Code	
Gumbo Bch FL	
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	
FPL 11-2-99	
Manatee Plant	
Burner Change-out	

PS Form 3800, April 1995



Mr. Al Linero
Bureau of Air Regulation
Department of Environmental Protection
2600 Blair Stone Rd. Tallahassee, Florida 32399-2400

RECEIVED

DEC 13 1999

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The principal of staging air and fuel in reducing NOx levels is well documented, and the associated design features are incorporated on the air side and fuel side of the burners. The air staging is accomplished by the dual register (two-zone) design, which partitions the air into two distinct regions with different flow and swirl characteristics. The fuel staging is accomplished by the design of the fuel oil atomizer tip, which develops fuel lean and fuel rich zones of atomized fuel oil into a number of flame regions, as shown in Figure 2.

2. Atomizer Characteristics

The atomizer will be a wide range mechanical atomizer, which uses a tip shut-off, constant differential pressure (spill) principle to achieve best combustion performance throughout the entire load range. The atomizer stages the fuel into several rich and lean zones, as described above. This design will be very similar to the configuration currently in use at the FPL's Martin Units 1 & 2. The fuel pressure design **range will be 1,100 Psig supply and 700 Psig return.** The burner gun assembly will be provided with a flow-reversing valve (see Figure 3) to control the oil supply to oil return differential pressure for firing or stand-by conditions, making the use of cooling and/or purge steam unnecessary. There will be no steam atomization capability with the proposed burners.

3. Manner of Emissions Reduction

NOx emissions from fuel oil firing arise mainly from two sources: the oxidation of nitrogen in the combustion air (thermal NOx) and the oxidation of the nitrogen contained in the fuel (fuel NOx). The formation of thermal NOx is strongly dependent on temperature, whereas fuel NOx is largely controlled by the air-fuel mixing process and associated residence time.

The proposed low NOx burner design recognizes these factors by incorporating staged combustion techniques. Instead of simple injection and rapid mixing of fuel and air, as achieved with the currently installed Forney burner, the air will be split into streams by the burner register, offering independent air staging. In addition, the fuel will be split into concentrated and weak flow streams to produce fuel rich and fuel lean flame regions, as previously discussed. Although the fuel will be staged into rich and lean zones for NOx reduction, the overall atomization quality (droplet size) will be reduced to achieve better burn-out. This design approach will not only reduce NOx emission (particularly at high loads) but also improve combustion performance from current conditions, which will result in a net reduction of opacity and CO emissions, as indicated in our Notice of Intent on 18-Oct-99. Due to the improvement in opacity and CO emissions, it is expected that particulate emissions will improve slightly. No increase is anticipated in the acid smut or any SOx related emissions since the sulfur content in the fuel and excess air levels will remain the same.

4. Low Load Emission Impacts

There will be no increased emissions at low loads.

Martin Plant and Manatee Plant Proposed Burners, Fuel Capability, NOx Emissions, Relative Use

The burners presently used at the Martin Plant units are characterized as "Low NOx Burners (LNB's)"; this is a correct designation. "LNB's" is the proper designation for the proposed burners at the Manatee Plant.

The inherent design of the proposed burners, not a request for options from FPL, allows for natural gas compatibility as stated in our notice of intent. The present single fuel capability is retained, since there is no alternative fuel supply available and any fuel change would require permit modifications for this fuel type addition.

The lower Martin Plant NOx emissions are not the result of low NOx burners alone, but in conjunction with the dual-fuel capability.

The relative differences in heat input from Martin Plant 863 MW units and Manatee Plant 863 MW units are primarily due to differences in utilization based on dispatch requirements. The Martin and Manatee Plant four 863 MW units are dispatched based on fuel economics. Fuel market fluctuations between natural gas and fuel oil will dictate which units run first and longest. The change to mechanical atomization will effect no change in the dispatch order of these units and consequently on their relative use.

Thank you for your assistance in clarification of this issue for the Department. If you require any additional information, please do not hesitate to call me at 561-691-7057.

Sincerely,



Mary J. Archer, QEP
Principal Environmental Specialist
Florida Power & Light Company

cc: Florida Southwest District DEP - Jerry Kissel
cc: Manatee County - Air Quality Management Division

cc: Manatee Co.
SWD
C. Snayell

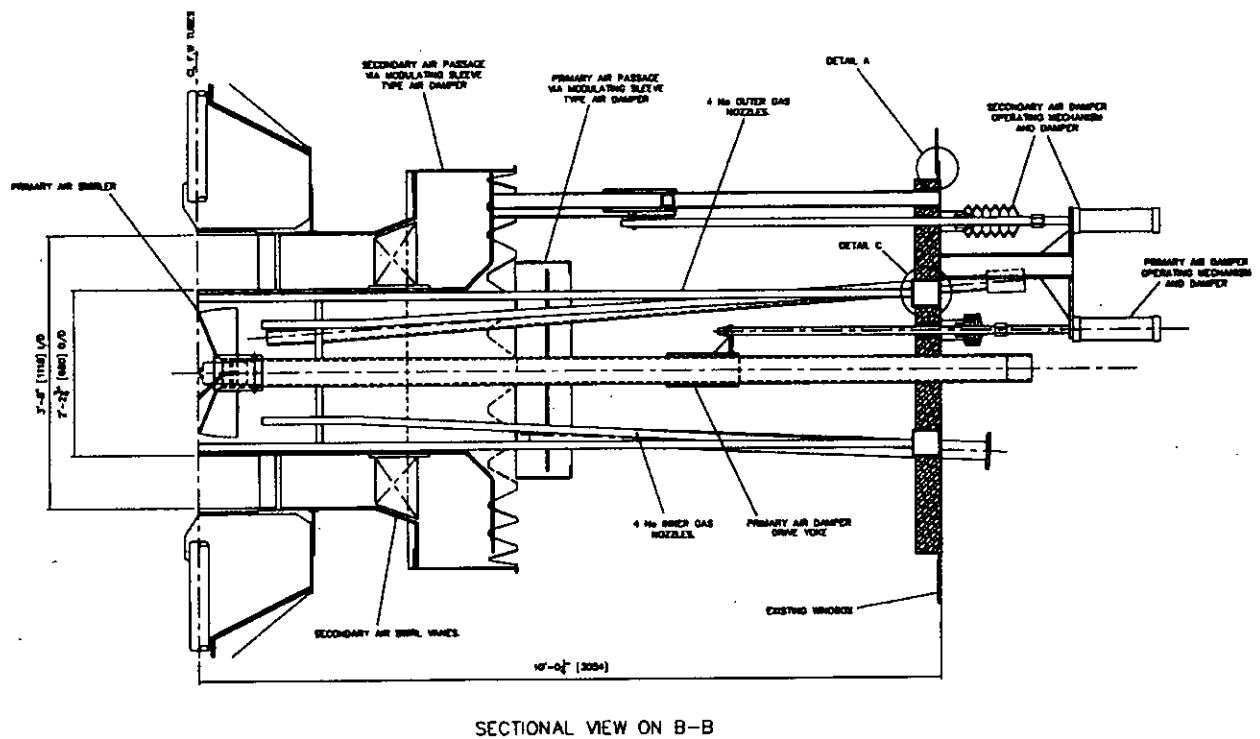
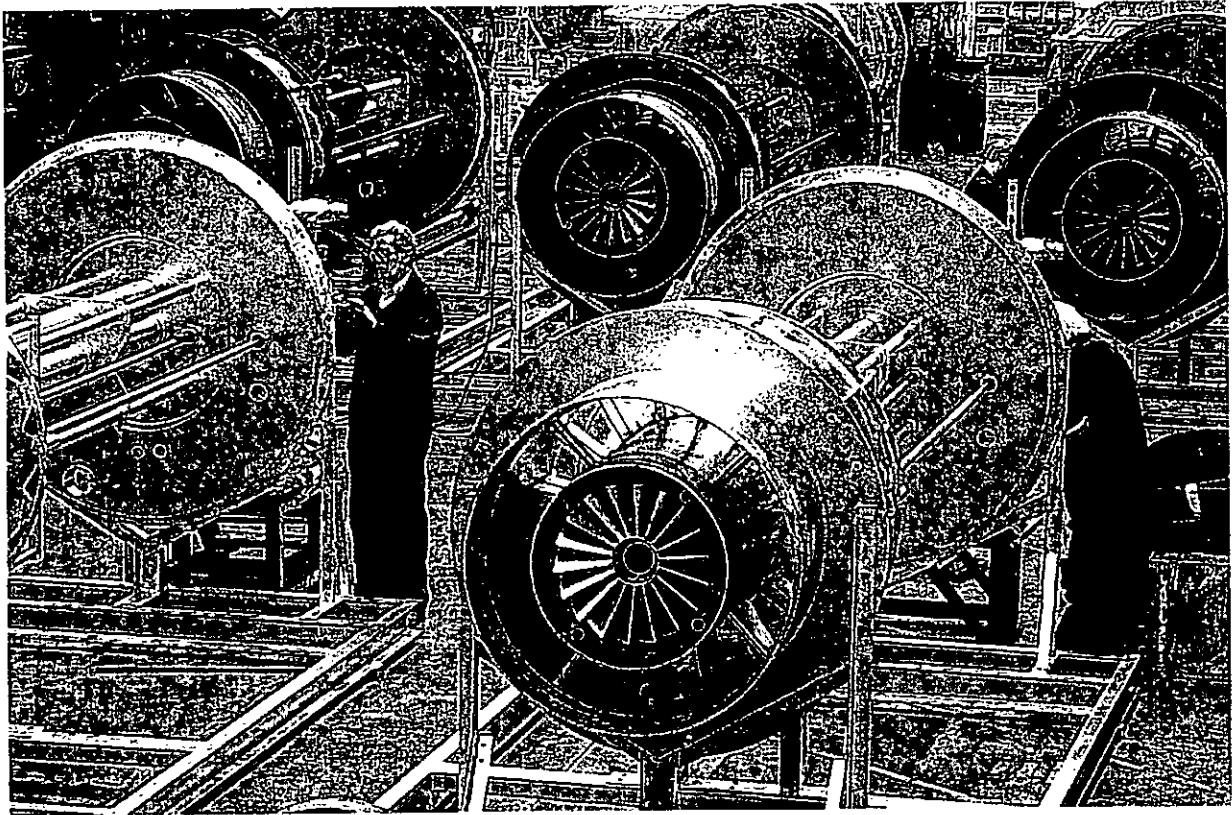


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Figure 1 – CSL Twin Register Low NOx Burner Details

Low NOx oil flame

Lobed (cruciform) atomiser

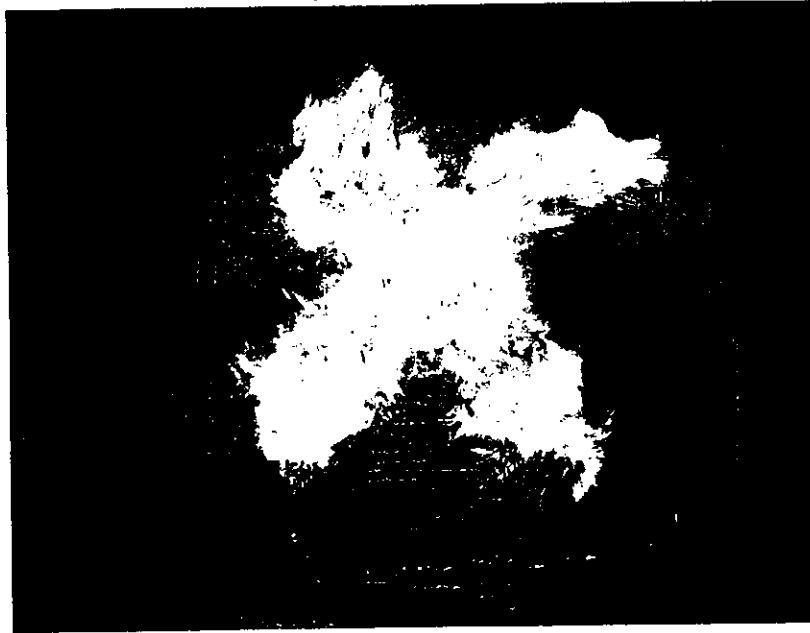


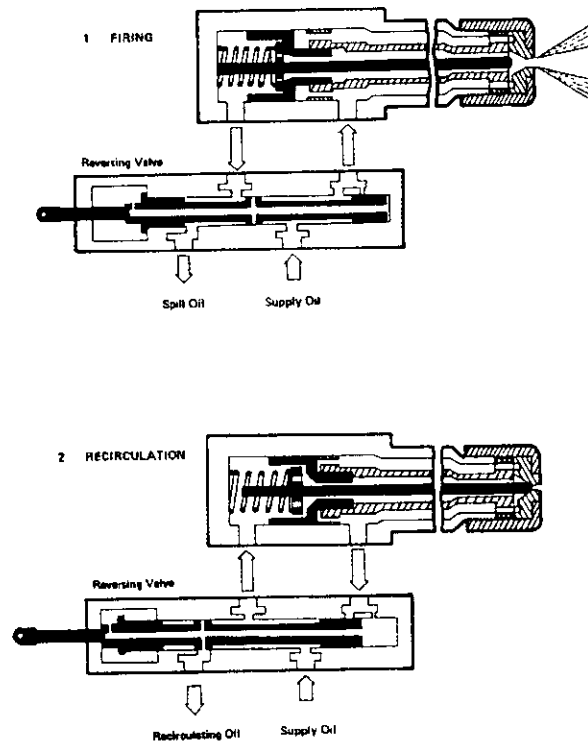
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Figure 2 – Low NOx Flame Pattern

Diagram of oil valve & gun

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Figure 3 – Gun & Reversing Valve Details