Department of
Environmental Protection

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March 10, 1998

Mr. R. Douglas Neeley, Chief
Air and Radiation Technology Branch
Air, Pesticides and Toxics Management Division
United States Environmental Protection Agency
Region 4
61 Forsyth Street, SW
Atlanta, GA 30303-8909

Re: Proposed Changes to FPL Proposed Title V Permits to Satisfy EPA Objections

Dear Mr. Neeley:

This letter is to document changes that the Department proposes to satisfy EPA Region 4 objections to Florida's Proposed Title V permits for the following Florida Power and Light plants: Lauderdale, Manatee, Martin, Port Everglades, Putnam, Riviera and Turkey Point Fossil. These objections were detailed in a letter from EPA Region 4 dated December 11, 1997 in which EPA indicated the primary basis for objection was that the permits do not meet the periodic monitoring requirements of 40 CFR 70.6(a)(3)(i). Also, the objection letter stated that some permits have deviations from applicable requirements, or have issues related to practical enforceability. The objection letter implied a program deficiency in the area of periodic monitoring as it relates to Florida's Title V permits. Our preference is to resolve this issue separately, so we do not have to encounter this situation on each Title V permit we issue. Obviously a case-by-case objection for periodic monitoring is neither efficient nor equitable. We have, however, proposed changes to these FPL permits to resolve EPA's objections on these permits, in advance of addressing the issue on a program-wide basis.

The changes proposed in this letter result primarily from our meeting with you and your staff and representatives of FPL on March 3rd at your office. That meeting enabled us to clarify many of the issues and identify changes that could be made to the permits that would allow Florida to issue Final Title V permits for these plants. Please review the following proposed changes to the referenced permits. If you concur with our changes, we will issue Final permits with these changes.

The following items and changes are presented generally in the order of our discussion of the issues at our March 3rd meeting.

Manatee, Martin, Port Everglades, Riviera and Turkey Point

FPL has been unable to correlate opacity to PM, ash or additive injection data, even given the large amount of data available for these facilities. FPL is also unaware of industry or government studies detailing such a correlation. Therefore, all parties agreed that correlating opacity to PM data would not be pursued. Instead, for the units with COMS, a permit condition will be added that requires the owner or operator to maintain and operate COMS and to make and maintain records of the readings for purposes of periodic monitoring. The following condition will be added:

Add a new condition to each permit in the sections for the fossil fuel steam generators titled Record Keeping and Reporting Requirements:

X.x. COMS for Periodic Monitoring. The owner or operator is required to install continuous opacity monitoring systems (COMS) pursuant to 40 CFR Part 75. The owner or operator shall maintain and operate COMS and shall make and maintain records of opacity measured by the COMS, for purposes of periodic monitoring.
[Rule 62-213.440, F.A.C., and applicant agreement with EPA on March 3, 1998]

Port Everglades and Lauderdale

Pursuant to our discussion, for simple-cycle and combined-cycle combustion turbine units without COMS, the permits will be revised to require that each unit shall have a Method 9 visible emissions test conducted upon exceeding 400 hours of operation on fuel oil, and every 150 hours of operation on fuel oil thereafter, in any given federal fiscal year. The statement of basis for these permits will be revised to include a demonstration supporting such a testing frequency, specifically referring to the low historical operational use of fuel oil and the difficulty of scheduling VE tests for remote-started units. The following specific changes will be made:

Add to the statement of basis for Lauderdale and Port Everglades:

The Department has determined that the appropriate VE testing frequency for the simple-cycle turbines is a VE test upon exceeding 400 hours of operation on fuel oil, and every 150 hours of operation on fuel oil thereafter, in any given federal fiscal year (October 1 through September 30). This frequency is justified by the low historical operational use of fuel oil for these units and the previous VE tests which documented compliance while firing fuel oil. The Lauderdale units have fired fuel oil a total of 34.5 hours in 1992, 17.4 hours in 1993, 8.4 hours in 1994, 2.4 hours in 1995, 282.4 hours in 1996, and 11.1 hours in 1997. The Port Everglades units have fired fuel oil a total of 50.5 hours in 1992, 30.7 hours in 1993, 7.9 hours in 1994, 2.5 hours in 1995, 4.1 hours in 1996, and 5.9 hours in 1997.

Also add to the statement of basis for Lauderdale

The Department has determined that the appropriate VE testing frequency for the combined-cycle turbines is a VE test upon exceeding 400 hours of operation on fuel oil, and every 150 hours of operation on fuel oil thereafter, in any given federal fiscal year (October 1 through September 30). This frequency is justified by the low historical operational use of fuel oil for these units and the previous VE tests which documented compliance while firing fuel oil. These units have fired fuel oil a total of 97.7 hours in 1993 (the year that PM testing was conducted on oil), 12.0 hours in 1994, 0.0 hours in 1995, 0.2 hours in 1996, and 0.0 hours in 1997. The combined-cycle turbines were not operational prior to 1993.

The permit for Lauderdale will be revised:

B.14. Visible Emissions Testing Required. The owner or operator shall conduct testing for visible emissions, using EPA Method 9, while the combustion turbine is operating at 90-100 percent of its capacity, according to the following schedule.

The owner or operator shall conduct testing for visible emissions while firing fuel oil for each simple-cycle turbine unit upon that turbine's exceeding 400 hours of operation on fuel oil, and every 150 hours of operation on fuel oil thereafter, in any given federal fiscal year (October 1 through September 30). Such

tests shall be performed within 15 days of exceeding such operating hours, to allow for prior notification of the tests.

Regardless of the number of hours of operation on fuel oil, at least one compliance test shall be conducted on all twenty-four combustion turbines every five years, coinciding with the term of the operation permit for these turbines. At least one quarter of such tests shall be conducted while burning fuel oil, and at least one quarter of such tests shall be conducted while burning natural gas.
[Rule 62-213.440, F.A.C., applicant agreement with EPA on March 3, 1998, and AC06-179848, Specific Condition No. 23]

The permit for Port Everglades will be revised:

C.6. Visible Emissions Testing Required. The owner or operator shall conduct testing for visible emissions, using EPA Method 9, while the combustion turbine is operating at 90-100 percent of its capacity, according to the following schedule.

The owner or operator shall conduct testing for visible emissions while firing fuel oil for each simple-cycle turbine unit upon that turbine's exceeding 400 hours of operation on fuel oil, and every 150 hours of operation on fuel oil thereafter, in any given federal fiscal year (October 1 through September 30). Such tests shall be performed within 15 days of exceeding such operating hours, to allow for prior notification of the tests.
[Rule 62-213.440, F.A.C., applicant agreement with EPA on March 3, 1998, and AO 06-230618]

The permit for Lauderdale will be revised:

A.19. Except as specified in this condition for visible emissions testing on fuel oil, annual compliance tests shall be performed on each combustion turbine unit with the fuel(s) used for more than 400 hours in the preceding 12-month period. Tests shall be conducted using EPA reference methods, or equivalent, in accordance with the July 1, 1996 version of 40 CFR 60 Appendix A. The stack test for each turbine shall be performed according to the requirements of specific condition A.20.

(The table and its footnote have been omitted in this letter for clarity. They will remain in the permit.)

The owner or operator shall conduct testing for visible emissions while firing fuel oil, using EPA Method 9, for each combustion turbine unit upon that turbine's exceeding 400 hours of operation on fuel oil, and every 150 hours of operation on fuel oil thereafter, in any given federal fiscal year (October 1 through September 30). Such tests shall be performed within 15 days of exceeding such operating hours, to allow for prior notification of the tests.
[Rule 62-213.440, F.A.C., applicant agreement with EPA on March 3, 1998, and PSD-FL-145, Specific Condition No. 10]

Manatee, Martin, Port Everglades, Riviera and Turkey Point

After reviewing historical particulate matter emissions data for these plants, the Department believes that a demonstration is appropriate, based on that data, to support each permit's annual PM testing frequency. As discussed in our meeting, these facilities are subject to a steady-state PM emission limit of 0.1 lb/mmBtu, which is effectively equivalent to 0.149 lb/mmBtu because of rounding, and 0.3 lb/mmBtu for soot blowing, which is equivalent to 0.349 lb/mmBtu. We proposed evaluating the required PM testing frequency based on the historical average test results, with sources with historical emissions less than half the standard required to test annually, sources with historical emissions less than three quarters of the standard required to test semi-

annually, and the remaining sources required to test quarterly. FPL has presented historical PM test results which show that the steady-state and soot blowing average results are less than half the applicable effective standards. The statement of basis for these permits will be revised to include a demonstration supporting an annual testing frequency, specifically referring to the low historical emission rate in relation to the effective standards for steady-state operation and soot-blowing operation. The following specific changes will be made:

Add to the statement of basis for each permit:

> The Department has determined that the appropriate particulate testing frequency for the fossil fuel steam generators is annually whenever fuel oil is used for more than 400 hours in the preceding year. This frequency is justified by the low emission rate documented in previous emissions tests while firing fuel oil. These units are subject to a steady-state PM emission limit of 0.1 lb/mmBtu, which is effectively equivalent to 0.149 lb/mmBtu because of rounding, and 0.3 lb/mmBtu for soot blowing, which is equivalent to 0.349 lb/mmBtu. FPL has presented historical PM test results which show that the steady-state and soot blowing average results are less than half the applicable effective standards. The Department has determined that sources with emissions less than half of the effective standard shall test annually. A summary of results of particulate emission testing in lb/mmBtu for the units at Martin* are 0.057 (steady-state) and 0.059 (soot-blowing).

* The revised statement of basis for the following facilities will reflect the appropriate emission test results: results for Manatee are 0.066 (steady-state) and 0.081 (soot-blowing); Port Everglades are 0.059 (steady-state) and 0.068 (soot-blowing); Riviera are 0.063 (steady-state) and 0.079 (soot-blowing); Turkey Point are 0.048 (steady-state) and 0.061 (soot-blowing).

Lauderdale

For the combined-cycle combustion turbine units, the Department believes that annual PM testing is appropriate, and can be justified through a demonstration in the statement of basis. The statement of basis for these permits will be revised to include a demonstration supporting such a testing frequency, specifically referring to the low historical operational use of fuel oil for these units and the low emission rate documented in previous emissions tests while firing fuel oil. The following specific changes will be made:

Add to the statement of basis:

> The Department has determined that the appropriate particulate testing frequency for the combined-cycle turbines is annually whenever fuel oil is used for more than 400 hours in the preceding 12-month period. This frequency is justified by the low historical operational use of fuel oil for these units and the low emission rate documented in previous emissions tests while firing fuel oil. These units have fired fuel oil a total of 97.7 hours in 1993 (the year that PM testing was conducted on oil), 12.0 hours in 1994, 0.0 hours in 1995, 0.2 hours in 1996, and 0.0 hours in 1997. The units were not operational prior to 1993. Results of particulate emission testing conducted on the combined cycle combustion turbines in 1993 while firing fuel oil show that all turbines had emissions well below the PM emission limit. Average particulate emissions for Unit 4A was 41.4 lb/hr, Unit 4B was 52.0 lb/hr, Unit 5A was 45.9 lb/hr, and Unit 5B was 48.0 lb/hr, versus an emission limit for each unit of 58 lb/hr.

Manatee, Port Everglades and Riviera (and Martin and Turkey Point)

A permit condition will be added for each of these plants requiring the owner or operator to conduct emission tests while injecting additives consistent with normal operating practices. The statement of basis will

also be revised to discuss the purpose of the additives. Note that the Turkey Point permit has language in condition A.3 regarding injection of additives. The following specific changes will be made:

Add to the statement of basis for each permit:

> FPL may inject additives such as magnesium oxide, magnesium hydroxide and related compounds into each boiler for the purposes of reducing build-up of particulate matter on the interior boiler surfaces, to facilitate proper heat transfer and other boiler operation, and to reduce the particulate matter required to be removed from boiler surfaces during soot blowing and other boiler cleaning operations. The rate of additive injection is not large, generally on the order of 1 gallon of additive per approximately 2,500 (± 500) gallons of fuel oil (this is approximately 0.04% by volume). The permit requires that emission tests be conducted while injecting additives consistent with normal operating practices.

Add a new condition to each permit in the sections for the fossil fuel steam generators titled Test Methods and Procedures for the Manatee, Port Everglades and Riviera and Martin plants:

> X.x. Testing While Injecting Additives. The owner or operator shall conduct emission tests while injecting additives consistent with normal operating practices.
> [Rule 62-213.440, F.A.C., applicant agreement with EPA on March 3, 1998]

Manatee, Port Everglades, Riviera and Turkey Point

No revisions of the permits are necessary to allow the 40 percent opacity limit. All parties in the meeting agreed that the previous Secretary orders are consistent with Florida's SIP and do not represent a variance from SIP requirements. The use of the word "variance" in these orders was not intended in the legal context but was instead intended to represent a difference or change. This issue is considered resolved, so no changes to the permits will be made.

The note in conditions A.14 and B.14 of the Port Everglades permit that refers to an informal agreement regarding visible emissions is not intended to be an enforceable part of the permit, so we agree it is not an enforceable condition. It is instead intended to identify the agreement for the information of the compliance inspector. No change to the permit is needed.

Manatee

The permit will be revised to limit the sulfur content of the fuel oils received at the plant to 1.0 percent by weight, and require fuel analysis by either the vendor or FPL to document compliance with the sulfur limit.

Add to the permit:

> A.9. Sulfur Dioxide. The sulfur content of fuel oils burned shall not exceed 1.0 percent by weight, as received at the plant. See specific conditions A.9, A.15, A.23 and A.24 of this permit.
> [Rules 62-213.440 and 62-296.405(1)(c)1.g., F.A.C., and applicant agreement with EPA on March 3, 1998]

> A.24. The following fuel sampling and analysis protocol shall be used as an alternate sampling procedure authorized by permit to demonstrate compliance with the sulfur dioxide standard:

> Compliance with the liquid fuel sulfur limit shall be verified by a fuel analysis provided by the vendor or performed by FPL upon each fuel delivery at the Port Manatee Fuel Oil Terminal with the following exception: in cases where No. 6 fuel oil is received with a sulfur content exceeding 1.0 percent by weight,

and blending at the terminal is required to obtain a fuel mix equal to the applicable percent sulfur limit, an analysis of a fuel sample representative of fuel from the fuel storage tanks shall be performed by FPL prior to transferring oil to the Manatee plant. Reports of percent sulfur content of these analyses shall be maintained at the power plant facility.

The owner or operator shall maintain records of the as-fired fuel oil heating value, density or specific gravity, and the percent sulfur content. Fuel sulfur content, percent by weight, for liquid fuels shall be determined by either ASTM D2622-94, ASTM D4294-90 (95), ASTM D1552-95, ASTM D1266-91, or both ASTM D4057-88 and ASTM D129-95 (or latest editions) to analyze a representative sample of the fuel oil.
[Rules 62-213.440, 62-296.405(1)(e)3., 62-296.405(1)(f)1.b. and 62-297.440, F.A.C., and applicant agreement with EPA on March 3, 1998]

Lauderdale, Manatee, Martin, Putnam and Turkey Point

The heat input limitations have been placed in each permit to identify the capacity of each unit for the purposes of confirming that emissions testing is conducted within 90 to 100 percent of the unit's rated capacity (or to limit future operation to 110 percent of the test load), to establish appropriate emission limits and to aid in determining future rule applicability. A note will be added to the permitted capacity condition for each permit clarifying this, and an explanation that regular record keeping is not required for heat input will be added to the statement of basis. The following specific changes will be made:

Add to the statement of basis for each permit:

The heat input limitations have been placed in each permit to identify the capacity of each unit for the purposes of confirming that emissions testing is conducted within 90 to 100 percent of the unit's rated capacity (or to limit future operation to 110 percent of the test load), to establish appropriate emission limits and to aid in determining future rule applicability. A note below the permitted capacity condition clarifies this. Regular record keeping is not required for heat input. Instead the owner or operator is expected to determine heat input whenever emission testing is required, to demonstrate at what percentage of the rated capacity that the unit was tested. Rule 62-297.310(5),F.A.C., included in the permit, is requires measurement of process variables for emission tests. Such heat input determination may be based on measurements of fuel consumption by various methods including but not limited to fuel flow metering or tank drop measurements, using the heat value of the fuel determined by the fuel vendor or the owner or operator, to calculate average hourly heat input during the test.

Add to each permit below the condition titled Permitted Capacity:

{Permitting note: The heat input limitations have been placed in each permit to identify the capacity of each unit for the purposes of confirming that emissions testing is conducted within 90 to 100 percent of the unit's rated capacity (or to limit future operation to 110 percent of the test load), to establish appropriate emission limits and to aid in determining future rule applicability.}

Manatee, Martin, Port Everglades, Riviera and Turkey Point

No revisions of the permits are necessary to address the comment related to records of soot blowing and load changes. All parties in the meeting agreed that the current permit requirements related to reporting of excess emissions are sufficient to satisfy this comment. FPL will continue to document and report excess emission events. This issue is considered resolved, so no changes to the permits will be made.

Lauderdale and Martin

The permits will be revised to specify that the 12-month average sulfur content be calculated as a weighted average based upon the sulfur content of the oil and the amount burned on a daily basis. The following specific changes will be made:

The permit for Lauderdale will be changed:

A.13. Sulfur Dioxide. The sulfur content of the light distillate fuel oil shall not exceed a maximum of 0.3 percent, by weight, and shall not exceed an average of 0.2 percent, by weight, during any consecutive 12-month period. The 12-month average sulfur content shall be calculated as a weighted average based upon the sulfur content of the oil and the amount burned on a daily basis. Compliance shall be demonstrated in accordance with the requirements of 40 CFR 60.335 by testing all oil shipments for sulfur content, nitrogen content, and heating value, using ASTM D 2800-96 or the latest edition.
[Rule 62-213.440, F.A.C., applicant agreement with EPA on March 3, 1998, and PSD-FL-145, Specific Conditions No. 5 and No. 11]

The permit for Martin will be changed:

B.28. The average sulfur content of the light distillate oil shall not exceed 0.3%, by weight, during any consecutive 12-month period. The maximum sulfur content of the light distillate fuel oil shall not exceed 0.5%, by weight. The 12-month average sulfur content shall be calculated as a weighted average based upon the sulfur content of the oil and the amount burned on a daily basis. Compliance shall be demonstrated in accordance with the requirements of 40 CFR 60.334 by testing for sulfur content, for nitrogen content, and for heating value of oil storage tanks once per day when firing oil using ASTM D 2880-96.
[Rule 62-213.440, F.A.C., applicant agreement with EPA on March 3, 1998, and PSD-FL-146, Specific Condition No. 11]

C.8. Sulfur Dioxide. Sulfur dioxide emissions limitations for the auxiliary steam boiler are established by firing natural gas or limiting the light distillate fuel oil's average sulfur content to 0.3%, by weight, during any consecutive 12-month period. The 12-month average sulfur content shall be calculated as a weighted average based upon the sulfur content of the oil and the amount burned on a daily basis.
[Rule 62-213.440, F.A.C., applicant agreement with EPA on March 3, 1998, and PSD-FL-146, revised 7/19/93]

D.3. Sulfur Dioxide. Sulfur dioxide emissions limitations for the diesel generator are established by limiting the light distillate fuel oil's average sulfur content to 0.3%, by weight, during any consecutive 12-month period. The 12-month average sulfur content shall be calculated as a weighted average based upon the sulfur content of the oil and the amount burned on a daily basis.
[Rule 62-213.440, F.A.C., applicant agreement with EPA on March 3, 1998, and PSD-FL-146, revised 7/19/93]

Port Everglades and Riviera (and Turkey Point)

No revisions of the permits are necessary to address the comment related to operation in the event the CEMS become temporarily inoperable. All parties in the meeting agreed that the current permit requirements related to firing fuel oil and gas in the event of temporary CEMS inoperability are sufficient to satisfy this comment. The Turkey Point permit was mentioned in the comment. As discussed briefly, the Department will

revise the Turkey Point permit to be consistent with the Port Everglades and Riviera permits. This issue is considered resolved, so no changes to the Port Everglades and Riviera permits will be made.

The permit for Turkey Point, however, will be revised to be similar to the Port Everglades and Riviera permits:

A.13. Sulfur Dioxide. The permittee shall demonstrate compliance with the sulfur dioxide limit of specific condition A.9 of this permit by the following:

a. Through the use of CEMS installed, operated, and maintained in accordance with the quality assurance requirements of 40 CFR 75, adopted and incorporated by reference in Rule 62-204.800 F.A.C. A relative accuracy test audit of the SO_2 CEMS shall be conducted at least annually. Compliance shall be demonstrated on a 3-hour rolling average.

b. In the event the CEMS becomes temporarily inoperable or interrupted, the fuel oil sulfur content and the maximum fuel oil to natural gas firing ratio is limited to that which was last used to demonstrate compliance prior to the loss of the CEMS. Alternatively, the boilers may fire 100 percent fuel oil with a maximum sulfur content of 1.0 percent by weight, or less, or 100 percent natural gas. See specific condition A.19.

[Rule 62-204.800, 62-213.440, 62-296.405(1)(c)3., F.A.C., AO13-238932, AO13-238939]

Port Everglades, Riviera and Turkey Point

The possible malfunctions related to sulfur dioxide emissions at these plants that were discussed at the meeting were unexpected loss of natural gas supply at the plant or failure of the fuel feed system. Another malfunction that could occur is burner failure. The Department agreed to remove the reference to malfunction in the sulfur dioxide emissions permit conditions. The excess emission provisions from Rule 62-210.700 are applicable, and are already included in the permit. A comment will be added to the statement of basis clarifying this issue. The following specific changes will be made:

Add to the statement of basis for each permit:

This facility is allowed to co-fire natural gas with fuel oil in any ratio that will cause emissions to not exceed the sulfur dioxide limitation of this permit. The permit specifies that compliance with the sulfur dioxide standard shall be based on the total heat input from all liquid and gaseous fuels burned. The permit also requires that the sulfur dioxide emission limitation shall apply at all times including startup, shutdown, and load change. However, excess emissions of sulfur dioxide are allowed during malfunctions in accordance with the excess emissions conditions of this permit, which are based on Rule 62-210.700, F.A.C. Malfunctions that could occur and affect sulfur dioxide emissions include unexpected loss of natural gas supply at the plant, failure of the fuel feed system or burner failure.

The permit for Port Everglades (conditions A.8 and B.8), Riviera (condition A.9) and Turkey Point (condition A.9) will be changed:

X.x. Sulfur Dioxide. Sulfur dioxide emissions shall not exceed 2.75* pounds per million Btu heat input, as measured by applicable compliance methods. Compliance shall be based on the total heat input from all liquid and gaseous fuels burned. The sulfur dioxide emission limitation shall apply at all times including startup, shutdown, and load change.

[Rules 62-213.440 and 62-296.405(1)(c)1.j., F.A.C.]

* The appropriate limit for the Turkey Point permit is 1.1 lb/mmBtu because of local ordinance, and the permit will have that limit.

Lauderdale, Manatee, Martin, Port Everglades, Putnam, Riviera and Turkey Point

Appendix E-1 will be replaced with Appendix I-1 that includes Florida's standard language that refers to Insignificant Emissions Units and/or Activities. The rule change requiring this became effective after these permits were posted. All permitting offices are making this administrative change subsequent to the rule change. We understand that EPA has already reviewed this appendix for similar sources, so the actual text will not be reproduced here.

All Permits

EPA's objection letter detailed several minor issues that required correction, such as marking conditions as not federally enforceable, making minor changes to permit condition language, or correcting typographical errors. Although not discussed at our March 3rd meeting, we will also address each of those issues in the Final permits.

As you know, the 90 day period ends March 11th. All parties involved have been expeditiously seeking resolution of these issues. We feel that EPA's concerns have been adequately addressed and we look forward to issuing final permits. Please advise as soon as possible if you concur with the specific changes detailed above. Please call me at 850/921-9503 if you have any questions. You may also contact Mr. Scott M. Sheplak, P.E., at 850/921-9532, or Mr. Joseph Kahn, P.E., at 850/921-9519, if you need any additional information.

Sincerely,

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

CF/jk

cc: Howard L. Rhodes
Scott Sheplak
Pat Comer
Rich Piper, FPL
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