UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

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BUREAU OF AIR REGULATION

4APT-ARB

Mr. A. A. Linero, P.E.
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

SUBJ: Preliminary Determination and Draft PSD Permit for Jacksonville Electric Authority - Reliant Energy Osceola, LLC (PSD-FL-273) located in Osceola County, Florida

Dear Mr. Linero:

Thank you for sending the preliminary determination and draft prevention of significant deterioration (PSD) permit dated November 8, 1999, for the above referenced facility. The preliminary determination is for the proposed construction and operation of a power project consisting of three simple cycle combustion turbines (CTs) with a nominal generating capacity of 170 MW each. The combustion turbines proposed for the facility are General Electric (GE), frame 7FA units. Additional equipment will include the following: one 3 million gallon fuel oil storage tank, one small diesel fire-water pump and a 9.8 mmBtu/hr natural gas pre-heater. The CTs will primarily combust pipeline quality natural gas with No. 2 fuel oil combusted as backup fuel. The fire-water pump will combust only diesel fuel. Each CT will be allowed to fire natural gas a maximum of 3,000 hours per year and will be allowed to fire No. 2 fuel oil a maximum of 750 hours per year. Total emissions from the proposed project are above the thresholds requiring PSD review for nitrogen oxides (NO_x), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter (PM/PM_{10}) and sulfuric acid mist (SAM).

Based on our review of the preliminary determination and draft permit, we have the following comments:

1. The NO_x BACT emission limit, when burning natural gas in the combustion turbines, is 10.5 ppmvd (15% oxygen). The Environmental Protection Agency (EPA) Region 4 has recently reviewed several GE 7FA dual-fuel simple cycle combustion turbine projects with a proposed BACT emissions limit of 9 ppmvd for NO_x, three of which are located in Florida (Oleander, FPC-Intercession City, IPS Vandolah). If the Reliant Osceola facility is significantly different from these other facilities, documentation of this difference should be included in the department's final determination.

2. In condition 19 of the draft permit, the emission rate for NO_x is set as 60.0 lb/hr on a 24-hour block average as measured by CEMS. Since the proposed CTs will run intermittently in

simple cycle mode and will seldom operate for 24 consecutive hours, the averaging period for this emission limit should be much shorter, consistent with the 3-hour averaging period proposed for fuel oil combustion.

3. We are pleased to see that FDEP re-performed the cost analysis for the SCR and CO Oxidation add-on control systems. FDEP concluded the cost effectiveness for the add-on controls were approximately $10,000/ton removed of NO_x and $4,000/ton removed of CO. The original application's cost analysis calculated the cost effectiveness of SCR as $28,000/ton removed of NO_x and $12,800/ton removed of CO and contained several items which should not have been included in the cost analysis or needed further clarification. For instance, an interest rate of 10% was used to calculate the cost recovery factor, a "lost power generation" penalty was included in the annual costs, a 15% contingency fee was included in the indirect capital costs, and an engineering cost of 10% seems to be double counted (included in both the direct and indirect capital cost section).

4. As indicated in conditions 25 and 26 of the draft permit, FDEP is proposing to allow excess emissions due to startup, shutdown or malfunction for up to 2 hours in any 24-hour period. This proposal is inconsistent with FDEP's preliminary determination for Kissimmee Utility's Cane Island Power Park (January 1999) which only allowed excess emissions from a simple cycle combustion turbine for 1 hour in any 24-hour period. Additionally, it is EPA's policy that BACT applies during all normal operations and that automatic exemptions should not be granted for excess emissions. Startup and shutdown of process equipment are part of the normal operation of a source and should be accounted for in the planning, design, and implementation of operating procedures for the process and control equipment. Accordingly, it is reasonable to expect that careful and prudent planning and design will eliminate violations of emission limitations during such periods.

Thank you for the opportunity to comment on the Reliant Energy Osceola facility preliminary determination and draft permit. If you have any questions regarding these comments, please direct them to either Katy Forney at (404) 562-9130 or Jim Little at (404) 562-9118.

Sincerely,

Douglas Neeley

R. Douglas Neeley
Chief
Air and Radiation Technology Branch
Air, Pesticides and Toxics
Management Division

cc: M. Halpin, BAR
CD
NPS

Reliant Energy

P.O. Box 4567
Houston, Texas 77210-4567
Phone: 713 207 3000

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BUREAU OF AIR REGULATION

December 6, 1999

Bureau of Air Regulation
Department of Environmental Protection
2600 Blair Stone Road – MS #5505
Tallahassee, Florida 32399-2400

Subject: Reliant Energy Osceola, L.L.C. – Comments on Draft Air Quality Permit
Reliant Energy Osceola Facility – Osceola County, Florida

Reliant Energy Osceola, L.L.C. (Reliant Energy) appreciates the opportunity to provide written comments to the Florida Department of Environmental Protection (FDEP) on the draft air construction permit for the Reliant Energy Osceola (Osceola) facility. These comments are in response to the draft air quality permit/Notice of Intent that was issued to Reliant Energy on November 8, 1999 and are being submitted for consideration by FDEP during the 30-day public notice and comment period. The comments have been apportioned to the various documents that were provided to Reliant Energy as part of the Notice of Intent package.

Technical Evaluation and Preliminary Determination

Item No. Comment

6.2 The table that provides a summary of annual emission limits for various pollutants appears to be incorrect. Specifically, it appears that emission calculations were based on unit heat input at an ambient temperature of 19°F instead of the 59°F ambient condition that is typically used as the basis for annual emission limit calculations. According to Reliant Energy's calculations, the table should be revised as follows:

Pollutant	Gas	Oil	Total
CO	113	72	185
NO_x	233	336	569
SO_2	4	119	123

Reliant Energy requests that the annual emission limit summary table be revised to reflect emission calculations that are based on ISO reference conditions at 59°F ambient temperature.

Air Construction Permit

Facility Description

As noted in correspondence submitted to FDEP on October 28, 1999, Reliant Energy elected to add a fuel gas pipeline heater to the proposed Osceola facility. In earlier submittals to FDEP, Reliant Energy also represented the construction of a diesel engine used to power pumps used for fire protection service. However, the draft construction permit for Osceola contains no discussion of these items in either

the facility description or in the summary of emission units. To eliminate any confusion about what sources are authorized under this construction permit, Reliant Energy requests that the permit be revised to reflect the authorization to construct the aforementioned fuel gas pipeline heater and diesel fire pump engine.

Specific Conditions

SC	Comment
10	Revise this specific condition to allow five (5) working days in which to submit a report to FDEP regarding emission limit exceedences caused by equipment failure or other causes. This additional time will provide an opportunity for facility staff to fully characterize the nature of the emission exceedence, develop an appropriate response to correct the situation and provide a comprehensive description of the event to FDEP.
19-B	Reliant Energy requests that this condition be removed. Reliant Energy has demonstrated through air dispersion modeling and a BACT analysis that a NO_x emission limitation of 10.5 ppm is justified and appropriate for the Osceola facility. Although the condition specifies that "reasonable" efforts are required to maintain NO_x emissions below 9 ppm, this term could lend itself to different interpretations under various circumstances. Furthermore, the second portion of this requirement also represents a significant additional burden to the Osceola facility. Tuning of the combustors may become necessary to optimize unit performance at some time after the initial compliance test as part of periodic inspection and maintenance activities, and the requirement to demonstrate that the unit can again meet the NO_x emission levels required at initial start-up represents a significant and possibly unachievable burden. This condition also could be viewed as a hindrance to performance improvement since any attempt to optimize unit performance through combustor adjustments could trigger this more stringent emission standard. Additionally, this post-modification emission requirement could become more difficult to achieve after several years of operation by the combustion turbine due to performance degradation of various components. This factor is a prime consideration in why the emission performance guarantee for the model 7FA combustion turbine applies only to a single demonstration in a "new and clean" condition. Given these concerns, Reliant Energy strongly suggests that this requirement be eliminated and that the demonstration of compliance with a 9 ppm emission limit for NO_x only be required at the initial demonstration of compliance.
19-D	Reliant Energy requests that this specific condition be deleted. As discussed above with respect to Specific Condition 19-B, it has been demonstrated through air dispersion modeling as well as a BACT analysis that a NO_x emission limitation of 42 ppm is justified and appropriate for the Osceola facility while firing fuel oil. Should FDEP decide to retain this specific condition, the associated provisions should be further clarified as they pertain to the development of a monitoring and testing protocol for emissions of NO_x during periods of fuel oil firing. Specifically, Reliant Energy requests that the condition be revised to require the aforementioned emissions and performance review after the combustion turbine units reach 750 hours of operation on fuel oil **individually**. Also, Reliant Energy suggests that the condition be revised to address the likely event that no new NO_x emission limit is justified while the units fire fuel oil.
20	Revise this specific condition to read: "...and neither 20 ppmvd and 70.0 lb/hr **while firing fuel oil**..."

SC	Comment
25	Revise this specific condition to limit each startup or shutdown event to no more than two (2) hours as applied to each startup or shutdown event. This extension of time will allow additional operational flexibility to the facility as well as minimize reliability impacts that may occur due to frequent cycling and abbreviated ramp up/ramp down periods that are associated with combustion turbine units that operate in peaking service, such as Osceola.
27	Consistent with the comment noted above for Specific Condition 10, this condition should be revised to require notifications for excess emissions within five (5) days of the event. This additional time will provide an opportunity for facility staff to fully characterize the nature of the emission exceedence, develop an appropriate response to correct the situation and provide a comprehensive description of the event to FDEP
29	Reliant Energy requests that FDEP delete the specific condition requiring annual NO_x compliance testing of the proposed generating units. The proposed units are subject to 40 CFR 75 and are thereby required to install, maintain and operate a continuous emissions monitoring system (CEMS) for emissions of NO_x from each of the three proposed generating units. Because the Part 75 monitoring requirements represent the "gold standard" for emissions monitoring QA/QC practices, Reliant Energy believes that the continuous monitoring of NO_x emissions in accordance with the requirements of Part 75 provides a reliable and comprehensive indicator of compliance with the applicable NO_x emission limits. Furthermore, continuous emission monitoring also is a more representative indicator of compliance that reflects unit operating performance at all operating loads and ambient conditions. In contrast, an annual compliance test represents a limited data set that provides emission data only at a single load point over a limited timeframe – usually no more than three hours – and presents an additional expense to the facility while providing limited additional benefit to the environment.
31	This specific condition should be clarified with respect to the use of a Custom Fuel Monitoring Schedule (CFMS), as it pertains to the fuel nitrogen and sulfur sampling requirements of 40 CFR 60.334, by including a reference to Specific Condition 45 that provides discussion of requirements associated with the CFMS.
42	As discussed previously under Specific Conditions 10 and 27, revise this condition to require written notification of emission exceedences within five (5) days.
45	Revise this specific condition to provide more detail on the requirements to obtain or comply with a CFMS. Specifically, this condition should either state clearly that a CFMS for nitrogen and sulfur sampling in natural gas fuel has been approved for the Osceola facility, or provide specific guidelines, requirements and information on how Osceola can apply for such a CFMS. Reliant Energy suggests that a CFMS for the Osceola facility should include the following provisions: - fuel nitrogen sampling should not be required; - fuel sulfur analysis should be required on a reduced schedule upon demonstration that sulfur content of the gas supply is below 2 gr/100 scf; and - fuel sulfur content may be demonstrated according to Gas Processors Association Standard 2377-86 ("length of stain tube" method).
45-B	Revise the specific condition to allow certification of a monitoring plan, as it pertains to any proposed or applicable CFMS, by the Alternate Designated Representative of the Osceola facility. Delegation of this authority is consistent with the intent and practice of the Acid Rain program and should be extended to the proposed permit.

BACT Determination

BACT Determination Requested by the Applicant

The reference to the sulfur content of pipeline-quality natural gas as noted in the summary table should be revised to 2.0 gr/100 scf. Also, the textual description of the annual emission limits should be based on the 59°F ambient temperature condition according to the following table.

Pollutant	Total
CO	185
NO_x	569
SO_2	123

Standards of Performance for New Stationary Sources

The final sentence in the first paragraph should be revised to read:

"...which allows NO_x emissions over 110 ppmvd..."

Review of Nitrogen Oxides Control Technologies

- NO_x Control Techniques

  First paragraph, third sentence, should be revised to read:

  "...which is operated as lean **as** stable combustion..."

Review of Sulfur Dioxide (SO_2) and Sulfuric Acid Mist

The annual emission limit for SO_2 emissions should be 123 tons/year.

Reliant Energy appreciates your consideration of the aforementioned issues. Please contact me at 713-945-7167 if there are any questions or if additional information is required.

Sincerely,

Jason M. Goodwin, P.E.
Senior Engineer, Air Resources Division
Environmental Department
Wholesale Group

JMG:\Power Projects\Osceola\Draft Permit Comments.doc

c: Mr. Michael Halpin, P.E. – Florida DEP – Tallahasse, FL
Mr. Joe Welborn – Seminole Electric Cooperative – Tampa, FL

CC: CD
EPA
NPS

Reliant Energy

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November 2, 1999

Mr. Michael P. Halpin, P.E.
New Source Review Section
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
Mail Stop 5505

Subject: Submittal of Professional Engineer Certification for Reliant Energy Osceola Revised Ambient Air Quality Analysis

Dear Mr. Halpin:

Reliant Energy Osceola, L.L.C. submitted a revised air quality impact analysis to your office for review on October 28, 1999 in support of a PSD air permit application for the Reliant Energy Osceola facility. As required by Florida DEP regulations, that submittal requires certification by a Florida registered professional engineer. Please find enclosed the required certification statement that pertains to the revised impact analysis.

Please contact me at 713-945-7167 if you have any questions concerning this permit application.

Sincerely,

Jason M. Goodwin, P.E.
Senior Engineer, Air Resources Division
Environmental Department
Wholesale Group

JMG:\Power Projects\Osceola\Model PE Cert.doc
Encl.

c: Al Linero – Florida DEP – Tallahassee, FL

4. Professional Engineer Statement :

I, the undersigned, hereby certify, except as particularly noted herein, that :*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollutant control equipment described in this Application for Air Permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

If the purpose of this application is to obtain a Title V source air operation permit (check here [ ] if so), I further certify that each emissions unit described in this Application for Air Permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance schedule is submitted with this application.

If the purpose of this application is to obtain an air construction permit for one or more proposed new or modified emissions units (check here [X] if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

If the purpose of this application is to obtain an initial air operation permit or operation permit revision for one or more newly constructed or modified emissions units (check here [ ] if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

D V Schultz
Signature
(seal)

October 29, 1999
Date