

# Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary

January 7, 1991

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Jerry L. Williams  
Director, Environmental  
Tampa Electric Company  
P. O. Box 111  
Tampa, Florida 33601-0111

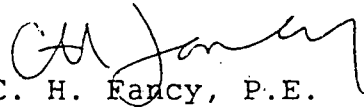
Dear Mr. Williams:

Re: TECO/Seminole Electric  
Hardee Power Station, PSD-FL-140

Please find enclosed the above referenced permit. You have the right to petition for an administrative hearing pursuant to Section 120.57, Florida Statutes, within 14 days of receipt of this permit or file a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, within 30 days from the date this permit is filed with the Clerk of the Department. Further, you may request a public hearing. Such request must be submitted within 30 days of receipt of this permit.

If you have any questions, please call Barry Andrews at 904-488-1344 or write to me at the above address.

Sincerely,

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

CHF/plm

Enclosure

c: Jewell A. Harper, EPA  
William C. Thomas, SW District  
Larry Curtin, Holland & Knight

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this notice of permit and all copies were mailed before the close of buisness on 1-7-91.

FILING AND ACKNOWLEDGEMENT  
FILED, on this date, pursuant to  
§120.52(9), Florida Statutes, with  
the designated Department Clerk,  
receipt of which is hereby  
acknowledged.

Kym Doker  
Clerk

1-7-91  
Date

Final Determination

TECO/Seminole Electric - Hardee Power Station  
Hardee/Polk County, Florida

Permit No. PSD-FL-140

Department of Environmental Regulation  
Division of Air Resources Management  
Bureau of Air Regulation

January 4, 1991

## Final Determination

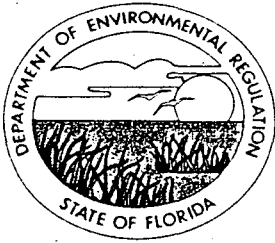
TECO Power Services Corporation's PSD permit application (part of the Power Plant Siting application), has been reviewed by the Division of Air Resources Management. Comments received from EPA Region IV dated December 21, 1990 (see attachment 2) are addressed below.

### Modeling/Monitoring

The EPA has questioned the use of Hillsborough County urban ozone data to represent background conditions in Hardee County. While it is true that, in many areas, the maximum ozone concentrations will occur downwind from an urban area in the range of 30 or more kilometers, it is unlikely that such high concentrations will occur at the Hardee County site (approximately 60 km from Tampa). High ozone values in Florida typically occur under conditions of a large-scale high pressure system and a weak surface pressure gradient. This allows the land-sea breeze to dominate the local wind flow pattern. The daytime onshore flow pattern and its nighttime return flow makes it very unlikely that high readings of ozone would be found in Hardee County. The Tampa monitoring site with the highest, second-highest value (Site No. 1800-081, 1989 second-highest value of 0.103 ppm) would be expected to provide a conservative estimate for the actual background concentration at the Hardee County site. Furthermore, during the period 1988 through 1990 there are no monitors in Hillsborough County or any other nearby county that indicate a violation of the ozone standard. Therefore, the Department has concluded that onsite preconstruction monitoring for ozone is not needed.

### BACT Analysis

Based on EPA's comments the Department has revised the BACT determination to exempt the gas/oil fired turbines from being equipped with selective catalytic reduction (SCR) emissions control technology for nitrogen oxides only if all of the turbines are collectively operated at a capacity factor of 25% or less, based on a twelve month rolling average. The permit has been modified such that if the 25 percent 12 month rolling average facility capacity factor be exceeded, the permittee shall within 30 months install SCR or another technology of equal or greater NOx reduction capability. Specific Conditions 1 and 2 of the Preliminary Determination will be amended to include these changes.



# Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary

PERMITTEE:  
TECO Power Services Corporation  
c/o Tampa Electric Company  
P.O. Box 111  
Tampa, FL 33601-0111

Permit Number: PSD-FL-140  
County: Hardee/Polk  
Latitude/Longitude: 22° 38' 02"N  
81° 38' 02"E  
Project: Hardee Power Station

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawings, plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

For the construction of a combined cycle power plant and directly associated facilities with an ultimate capacity of 660 MW (nominal net) to be constructed in 3 phases. Phase 1-A will consist of a nominal 220 MW combined cycle unit and a 75 MW stand-alone combustion turbine. Phase 1-B will add 145 MW of generating capacity through the addition of a combustion turbine, two HRSG's and one steam electric generator, resulting in two 220 MW combined cycle units. Phase 2 will consist of a third 220 MW unit to be added at an unspecified future date. The combustion turbines will be capable of both combined cycle and simple cycle operation. It is anticipated that the combustion turbines will use natural gas as the primary fuel and distillate oil as the backup fuel.

Nitrogen oxides will be controlled by water injection unless the combined capacity of all the turbines (both combined cycle and simple cycle) exceeds 25 percent of the facility's capacity. Should any quarterly report demonstrate that the combined capacity of all the turbines (both combined cycle and simple cycle) exceeds 25 percent of the facility's capacity at any time, the Permittee shall install SCR or another technology of equal or greater NOx reduction capability. The power plant site certification number for this project is PA 89-25.

Construction shall be in accordance with the attached permit application and additional information except as other wise noted in the Specific Conditions.

PERMITTEE:  
TECO Power Services

Permit Number: PSD-FL-140  
Project: Hardee Power Station

Attachments are as follows:

1. Power plant site certification package PA 89-25 and its associated attachments, dated June 14, 1990.
2. Letter from EPA dated December 21, 1990.
3. DER's Final Determination dated January 4, 1991.

**GENERAL CONDITIONS:**

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

PERMITTEE:  
TECO Power Services

Permit Number: PSD-FL-140  
Project: Hardee Power Station

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

- a. Have access to and copy any records that must be kept under the conditions of the permit;
- b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

- a. a description of and cause of non-compliance; and
- b. the period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information

PERMITTEE:  
TECO Power Services

Permit Number: PSD-FL-140  
Project: Hardee Power Station

relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.120 and 17-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

- (x) Determination of Best Available Control Technology (BACT)
- (x) Determination of Prevention of Significant Deterioration (PSD)
- (x) Compliance with New Source Performance Standards

14. The permittee shall comply with the following:

- a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
- b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.



PERMITTEE:  
TECO Power Services

Permit Number: PSD-FL-140  
Project: Hardee Power Station

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the dates analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

**SPECIFIC CONDITIONS:**

1. Beginning with the fifth quarter of operation, the Permittee shall submit to the Bureau of Air Regulation and the Air Section, Southwest District Office, a quarterly report for the previous quarter showing:

(a) The 12 month rolling average capacity factor for each individual generating unit; and

(b) The 12 month rolling average capacity factor for the Hardee Power Station.

The 12 month rolling average capacity factor shall be calculated by dividing each unit's megawatt hours output of generation by the product of the official megawatt rating of the unit and the number of hours in the 12 month period.

2. The Permittee shall install duct module(s) suitable for later installation of SCR equipment when constructing any combined cycle generating unit at the Hardee Power Station. Should any quarterly report demonstrate that the 12 month rolling average capacity factor for the Hardee Power Station exceeds 25 percent at any time, the Permittee shall install SCR or another technology of equal or greater NOx reduction capability. In no event shall any such SCR or equivalent NOx control technology installation and compliance testing occur later than 30 months from the date that the Permittee requested or the facility exceeded the 25 percent 12 month rolling average capacity factor.

PERMITTEE:  
TECO Power Services

Permit Number: PSD-FL-140  
Project: Hardee Power Station

3. Only natural gas or No. 2 fuel oil shall be fired in the turbine.

4. The maximum heat input to each CT shall neither exceed 1268.4 MMBtu/hr while firing natural gas, nor 1312.3 MMBtu/hr while firing fuel oil (@ 32°F). Each CT's fuel consumption shall be continuously measured and recorded.

5. The maximum allowable emissions from each CT in accordance with the BACT determination, shall not exceed the following:

Pollutant	Fuel	Emission Limitations	
		concentration	lb/hr/CT
NOx	Gas	42 ppmvd @ 15% O <sub>2</sub>	215.9
	Oil	65 ppmvd "	383.8
VOC	Gas	2 ppmvd	3.6
	Oil	5 ppmvd	10.3
CO	Gas	10 ppmvd	31.3
	Oil	26 ppmvd	93.4
PM/PM <sub>10</sub>	Gas	--	5.0
	Oil	--	10.0
SO <sub>2</sub>	Gas	--	35.8
	Oil	0.3% S oil	734.4

6. The following allowable emissions, most determined by BACT, are tabulated for PSD and allowable inventory purposes:

Pollutant	Fuel	Maximum Allowable Emission (@ 32°F)	
		concentration	lb/hr/CT
H <sub>2</sub> SO <sub>4</sub> Acid Mist	Gas	---	1.6
	Oil	---	22.0 (avg)/33.7 (max)
Mercury	Gas	---	0.0144
	Oil	---	0.0039
Fluoride	Oil	---	0.0427
Beryllium	Oil	---	0.0333

NOTE: Sulfur dioxide emissions assume a maximum of 0.5 percent sulfur in fuel oil for hourly emissions and an average sulfur content of 0.3 percent for annual emissions.

PERMITTEE:  
TECO Power Services

Permit Number: PSD-FL-140  
Project: Hardee Power Station

7. Visible emissions shall neither exceed 10% opacity while burning natural gas, nor 20% opacity while burning distillate oil.

8. Initial (I) compliance tests shall be performed on each Combustion Turbine using both fuels. The stack test for each turbine shall be performed within 10% of the maximum heat rate input for the tested operating temperature. Annual (A) compliance tests shall be performed on each Combustion Turbine with the fuel(s) used for more than 400 hours in the preceding 12-month period. Tests shall be conducted using EPA reference methods in accordance with the July 1, 1988 version of 40 CFR 60 Appendix A:

- a. 5 for PM (I,A)
- b. 8 for sulfuric acid mist (I, for oil only)
- c. 9 for VE (I,A)
- d. 10 for CO (I,A)
- e. 20 for NOx (I,A)
- f. 25A for VOC (I,A)
- g. 104 for Beryllium (I, for distillate oil only) A fuel analysis for Be using either Method 7090 or 7091, and sample extraction using Method 3040, as described in the EPA solid waste regulations SW 846, is also acceptable.
- h. ASTM D 2880-71 for sulfur content of distillate oil (I,A)
- i. ASTM D 1072-80, D 3031-81, D 4084-82 or D 3246-81 for sulfur content of natural gas (I, and A if deemed necessary by DER)

Other DER approved methods may be used for compliance testing after prior Departmental approval.

9. The average annual sulfur content of the No. 2 fuel oil shall not exceed 0.3% by weight. The maximum sulfur content of the No. 2 fuel oil shall not exceed 0.5%. Compliance shall be demonstrated in accordance with the requirements of 40 CFR 60.334 by testing all oil shipments for sulfur content using ASTM D 2880-71, and testing for nitrogen content.

10. For all generating units, water injection shall be utilized for NOx control. The water to fuel ratio at which compliance is achieved shall be incorporated into the permit and shall be continuously monitored for all units.

11. To determine compliance with the capacity factor condition, the Permittee shall maintain daily records of power generation for each turbine. All records shall be maintained for a minimum of three years after the date of each record and shall be made available to representatives of the Department upon request.

PERMITTEE:  
TECO Power Services

Permit Number: PSD-FL-140  
Project: Hardee Power Station

12. The project shall comply with all the applicable requirements of Chapter 17-2, Florida Administrative Code (F.A.C.) and the July 1, 1988, version of 40 CFR 60 Subpart GG, Gas Turbines.
13. Any change in the method of operation, fuels, equipment, or phase design, shall be submitted for approval to DER's Bureau of Air Regulation.
14. If start/black start capability for the CTs is provided by a combustion unit, the Department shall be notified of the type/model, output capacity, anticipated hours of operation, and air emissions of the unit.
15. The Permittee shall have required sampling tests of the emissions performed within 60 days after achieving the maximum turbine firing rate, but not later than 180 days from the start of operation. Thirty (30) days prior notice of the initial sampling test and fifteen (15) days notice before subsequent annual testing shall be provided to the Southwest District Office. Written reports of the tests shall be submitted to the Southwest District office within 45 days of test completion.
16. If construction does not commence on the first three units within 18 months of issuance of this certification/permit, then the Permittee shall obtain from DER a review and, if necessary, a modification of the control technology and allowable emissions for the unit(s) on which construction has not commenced (40 CFR 52.21(r)(2)). Units to be constructed in later phases of the project will be reviewed and limitations established under the supplementary review process of the Power Plant Siting Act.
17. Quarterly excess emission reports, in accordance with the July 1, 1988 version 40 CFR 60.7 and 60.334 shall be submitted to DER's Southwest District office. Annual reports shall be submitted to the District office in accordance with F.A.C. Rule 17-2.700(7).
18. Literature of equipment selected shall be submitted as it becomes available. A CT-specific graph of the relationship between NOx emissions and water injection, and also another of ambient temperature and heat inputs to the CT shall be submitted to DER's Southwest District office and the Bureau of Air Regulation.
19. Stack sampling facilities shall be provided for both the bypass stack (CT) and the main stack (HRSG).

PERMITTEE:  
TECO Power Services Corporation

Permit Number: PSD-FL-140  
Project: Hardee Power Station

SPECIFIC CONDITIONS:

modification of the control technology and allowable emissions for the unit(s) on which construction has not commenced (40 CFR 52.21(r)(2)). Units to be constructed in later phases of the project will be reviewed and limitations established under the supplementary review process of the Power Plant Siting Act.

17. Quarterly excess emission reports, in accordance with the July 1, 1988, version of 40 CFR 60.7 and 60.334 shall be submitted to DER's Southwest District office. Annual reports shall be submitted to the District office in accordance with F.A.C. Rule 17-2:700(7).

18. Literature of equipment selected shall be submitted as it becomes available. A CT-specific graph of the relationship between NO<sub>x</sub> emissions and water injection, and also another of ambient temperature and heat inputs to the CT shall be submitted to DER's Southwest District office and the Bureau of Air Regulation.

19. Stack sampling facilities shall be provided for both the bypass stack (CT) and the main stack (HRSG).

20. Construction period fugitive dust emissions shall be minimized by covering or watering dust generation areas.

Issued this 24th day  
of February, 1992

STATE OF FLORIDA DEPARTMENT  
OF ENVIRONMENTAL REGULATION

  
\_\_\_\_\_  
Carol M. Browner, Secretary

*wrong last page  
for this 1991 permit  
where is actual  
final page?*

ATTACHMENT 1

Available upon request

ATTACHMENT - 2



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.  
ATLANTA, GEORGIA 30365

RECEIVED

DEC 21 1990

DEC 24 1990

4APT-AEB

DER-BAQM

Mr. Steve Smallwood, P.E., Director  
Air Resources Management Division  
Florida Department of Environmental  
Regulation  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

RE: TECO Power Services Corp. Hardee Power Station (PSD-FL-140)

Dear Mr. Smallwood:

This is to acknowledge receipt of the revised preliminary determination for the above referenced facility by letter dated December 5, 1990. We have reviewed the package as submitted and have significant comments as outlined in the following paragraphs. The issues raised in this letter are sufficient to preclude the issuance of a construction permit to TECO Power Services Corp. In order to prevent additional action by EPA, we strongly advise that you not issue this construction permit until the following issues are resolved.

MODELING/MONITORING

As noted in our comments on the permit application dated August 11, 1989, and in our comments on the preliminary determination of August 2, 1990, we indicated that preconstruction monitoring based on regional monitors was acceptable if such monitors could be found to be representative. As you know, the requirement for preconstruction monitoring under PSD regulations is not discretionary. A source may be exempted from preconstruction monitoring only if its impacts are predicted to be de minimis as defined in PSD regulations. Once the predicted impacts are determined to be greater than de minimis, a reviewing agency may allow the use of representative data in place of on-site monitoring. Such decision is made on a case-by-case basis and is not discretionary; the basis for such decision must conform to the "Ambient Monitoring Guidelines for Prevention of Significant Deterioration."

For SO<sub>2</sub>, the monitors located north of the site fall into the representative category and we will accept one of those monitors as fulfilling the PSD requirement for SO<sub>2</sub>.



For ozone however, we believe the Tampa monitoring site is the most representative site based on the prevailing winds and distance to the Hardee County site. Also, since maximum ozone concentrations will occur downwind from an urban area in the range of 30 or more kilometers, it is possible that the background levels at the site are higher than at sites that are not downwind of the Tampa area. The purpose of PSD monitoring is to quantify the background levels in the impact area. Therefore, we do not concur that the identified monitoring sites are representative and we recommend actual preconstruction monitoring at the Hardee site or use of data from the Tampa monitoring site.

#### BACT ANALYSIS

In light of Region IV's previous comments on the application and preliminary determination for this source along with the permitting history for combustion turbines both in the Region and nationwide, Region IV cannot condone the BACT determination presented in the revised preliminary determination. The applicant has continually based the rejection of SCR as a NO<sub>x</sub> control on the fact that the projected use of the facility is 25% of capacity, thereby rendering the application of SCR to be technically infeasible (when firing in the simple cycle mode) and economically unreasonable (when firing in the combined cycle mode). This is consistent with recent BACT determinations in Florida and Region IV; however, the sources in previous cases (Key West, Panda Energy, and South Carolina Electric and Gas) each accepted permit limits on hours of operation to roughly 25% of capacity.

The NESCAUM Stationary Source Committee published a recommendation in June of 1990 concerning the permitting of simple cycle turbines. This recommendation stated: "Historically, simple cycle gas turbines used in peaking service have operated, on the average, less than fifteen hundred hours per year. However, actual hours of operation in any given year can vary substantially and could easily exceed fifteen hundred hours per year." 1500 hours per year is roughly 18% of full capacity (8760 hours per year). The recommendation suggested that regulatory agencies limit the hours of operation of "peaking units" and proposed emission guidelines for sources which included limiting the hours of operation to 2500 hours per year (28.5%).

Correspondence from the applicant indicates that in addition to the predicted capacity utilization of 25%, a maximum capacity utilization of 55% is expected. In other words, the applicant proposes to utilize the facility in a cycling manner, going from peak load to

mid-range to base load according to need. The August 2, 1990, preliminary determination is consistent with recent BACT determinations in that it proposed to limit the hours of operation of the source to 25% with the condition that if this capacity would be exceeded, the source would install SCR. However, the December 5, 1990, preliminary determination proposes to allow the source to operate at 60% lifetime capacity before having to install SCR. It is not acceptable to limit capacity on a 60% lifetime average such that the source could operate at 20% capacity one year and 100% capacity the next year and still not be required to apply SCR. In essence, the revised preliminary determination allows the source to operate as a base load unit without requiring add-on controls or even dry low-NO<sub>x</sub> combustors. Furthermore, a lifetime average is not an enforceable entity.

The August 2, 1990 BACT determination for TECO required the use of wet injection and limited the hours of operation of the combined cycle units to 2190 hours per year. This is equivalent to 25% of capacity which is typical of a "peaking" unit. The simple cycle turbine of Phase IA, however, was not limited on hours of operation. In addition, the combined cycle units have the capacity to use by-pass vents and thus function as simple cycle units. It would appear, then, that the combined cycle units could operate continuously provided the hours of operation in the combined phase did not exceed 2190.

If the units are "peaking" units as the applicant previously claimed, then the combined capacity of all the units (both combined cycle and simple cycle) should be limited to 25% of facility capacity. This is in keeping with the precedent set with Key West and facilities in North and South Carolina. Otherwise, the BACT analysis would indicate the need for add-on NO<sub>x</sub> controls.

In addition, the burner design should be evaluated for BACT. The applicant proposes to use General Electric Frame 7EA turbines. General Electric manufactures a "quiet combustor" which achieves NO<sub>x</sub> levels of 25 ppm using wet injection when firing natural gas. Other burner designs are available which are capable of achieving equal or better emission levels with and without wet injection. For example, the South Bay Power Plant in Chula Vista, CA, has recently proposed a 140 MW combined cycle turbine with emission limits of 9 ppm NO<sub>x</sub> and 8 ppm CO firing natural gas, using steam injection. The technology proposed is currently in practice at the Delmarva Power and Light, Hay Road Station, Delaware. NO<sub>x</sub> emissions at this facility have been tested at lower than 25 ppm.

In any case, it does not seem appropriate to allow a simple cycle "peaking" unit to operate 8760 hours per year without a lower emission rate. Also, clarification should be given as to whether the combined cycle units will be allowed to operate in simple cycle mode.

The applicant has continually pointed to the firing of fuel oil as another drawback to implementing the use of SCR; however, as seen in publications such as the "White Paper Selective Catalytic Reduction Controls to Abate NO<sub>x</sub> Emissions" by the Industrial Gas Cleaning Institute (November, 1989), SCR manufacturers are confident with performance on "high sulfur" fuels, and especially low sulfur distillate fuels such as proposed by the applicant.

As with the Key West permit, the permit for TECO should contain provisions to require the facility reevaluate BACT, with SCR as a minimum, in the event that the 25% capacity factor is exceeded or the source wishes to operate as other than a peaking unit. The determination made by DER staff in the August 2, 1990, document is justified and consistent with previous BACT determinations.

Thank you for the opportunity to review and comment on this package. If you have any questions on these comments, please do not hesitate to contact me at (404) 347-3043.

Sincerely yours,

*Richard A. Green, Deputy/for*

Winston A. Smith, Director  
Air, Pesticides, and Toxics  
Management Division

cc: TECO Hardee

*F. J. Miller*

*E. J. Green*

*S. Bryant*

*E. Smith, Assistant*

*D. Green*