

Harvey, Mary

From: Mike Opalinski [MOpalinski@seminole-electric.com]
Sent: Friday, September 28, 2007 8:14 AM
To: Harvey, Mary
Subject: Re: Letter - Michael Opalinski - Seminole Electric Cooperative, Inc.

>>> "Harvey, Mary" <Mary.Harvey@dep.state.fl.us> 9/20/2007 3:02 PM >>>

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site:
<http://www.adobe.com/products/acrobat/readstep.html>.

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

Thank you,

DEP, Bureau of Air Regulation

**** NOTICE ****

This e-mail message, including any attachments, is for the sole use of the intended recipient(s) and may contain confidential, proprietary and privileged information. Any un-authorized review, copying, use, disclosure, or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply e-mail and destroy all copies of the original message.

9/28/2007

Harvey, Mary

From: Zhang-Torres
To: Harvey, Mary
Sent: Friday, September 21, 2007 9:32 AM
Subject: Read: Letter - Michael Opalinski - Seminole Electric Cooperative, Inc.

Your message

To: 'mopalinski@seminole-electric.com'; 'wmroddy@seminole-electric.com'; Halpin, Mike; Zhang-Torres
Cc: Koerner, Jeff; Adams, Patty; Gibson, Victoria
Subject: Letter - Michael Opalinski - Seminole Electric Cooperative, Inc.
Sent: 9/20/2007 3:03 PM

was read on 9/21/2007 9:32 AM.

Harvey, Mary

From: Harvey, Mary
Sent: Thursday, September 20, 2007 3:03 PM
To: 'mopalinski@seminole-electric.com'; 'wmroddy@seminole-electric.com'; Halpin, Mike; Zhang-Torres
Cc: Koerner, Jeff; Adams, Patty; Gibson, Victoria
Subject: Letter - Michael Opalinski - Seminole Electric Cooperative, Inc.
Attachments: Letter- Michael Opalinski - Seminole Electric Cooperative, Inc..pdf

Tracking:	Recipient	Read
	'mopalinski@seminole-electric.com'	
	'wmroddy@seminole-electric.com'	
	Halpin, Mike	Read: 9/20/2007 3:05 PM
	Zhang-Torres	
	Koerner, Jeff	
	Adams, Patty	Read: 9/20/2007 3:16 PM
	Gibson, Victoria	Read: 9/20/2007 3:04 PM

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site:
<http://www.adobe.com/products/acrobat/readstep.html>.

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

Thank you,

DEP, Bureau of Air Regulation

9/20/2007

Harvey, Mary

From: Mike Roddy [WMRoddy@seminole-electric.com]
Sent: Thursday, September 20, 2007 3:51 PM
To: Harvey, Mary
Subject: Re: Letter - Michael Opalinski - Seminole Electric Cooperative, Inc.

This email is to acknowledge receipt of the attached document. Thanks, Mike Roddy

>>> "Harvey, Mary" <Mary.Harvey@dep.state.fl.us> 9/20/2007 3:02 PM >>>

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site:
<http://www.adobe.com/products/acrobat/readstep.html>.

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

Thank you,

DEP, Bureau of Air Regulation

**** NOTICE ****

This e-mail message, including any attachments, is for the sole use of the intended recipient(s) and may contain confidential, proprietary and privileged information. Any un-authorized review, copying, use, disclosure, or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply e-mail and destroy all copies of the original message.

10/2/2007

Harvey, Mary

From: Halpin, Mike
To: Harvey, Mary
Sent: Thursday, September 20, 2007 3:06 PM
Subject: Read: Letter - Michael Opalinski - Seminole Electric Cooperative, Inc.

Your message

To: 'mopalinski@seminole-electric.com'; 'wmroddy@seminole-electric.com'; Halpin, Mike; Zhang-Torres
Cc: Koerner, Jeff; Adams, Patty; Gibson, Victoria
Subject: Letter - Michael Opalinski - Seminole Electric Cooperative, Inc.
Sent: 9/20/2007 3:03 PM

was read on 9/20/2007 3:05 PM.

Harvey, Mary

From: Gibson, Victoria
To: Harvey, Mary
Sent: Thursday, September 20, 2007 3:04 PM
Subject: Read: Letter - Michael Opalinski - Seminole Electric Cooperative, Inc.

Your message

To: 'mopalinski@seminole-electric.com'; 'wmroddy@seminole-electric.com'; Halpin, Mike; Zhang-Torres
Cc: Koerner, Jeff; Adams, Patty; Gibson, Victoria
Subject: Letter - Michael Opalinski - Seminole Electric Cooperative, Inc.
Sent: 9/20/2007 3:03 PM

was read on 9/20/2007 3:04 PM.

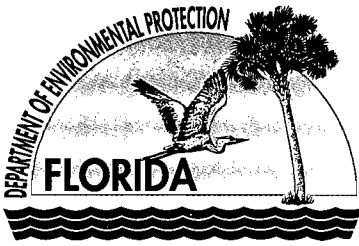
Harvey, Mary

From: Adams, Patty
To: Harvey, Mary
Sent: Thursday, September 20, 2007 3:16 PM
Subject: Read: Letter - Michael Opalinski - Seminole Electric Cooperative, Inc.

Your message

To: 'mopalinski@seminole-electric.com'; 'wmroddy@seminole-electric.com'; Halpin, Mike; Zhang-Torres
Cc: Koerner, Jeff; Adams, Patty; Gibson, Victoria
Subject: Letter - Michael Opalinski - Seminole Electric Cooperative, Inc.
Sent: 9/20/2007 3:03 PM

was read on 9/20/2007 3:16 PM.



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

September 20, 2007

(Sent by Electronic Mail – Received Receipt Requested)

Mr. Michael Opalinski, V.P. of Technical Services
Seminole Electric Cooperative, Inc.
P.O. Box 272000
Tampa, FL 33688-2000

Re: Midulla Generating Station (formerly Payne Creek Generating Station)
Combined Cycle Unit 1 – Rebuild of the Steam Turbine and Electrical Generator
Exemption from the Requirement to Obtain an Air Construction Permit for Proposed Work

Dear Mr. Opalinski:

On September 10, 2007, we received your letter requesting an exemption from the requirement to obtain an air construction permit to replace the recently damaged steam turbine on combined cycle Unit 1 at the Midulla Generating Station. This is an existing power plant located in Hardee County at 6695 County Road 663, Bowling Green, Florida. Unit 1 experienced a major failure of the steam turbine low-pressure blading on April 14th, which resulted in severe vibration of the steam turbine and generator shaft. The failure caused a fire and severed lubricating oil lines to the generator, which fed the fire. The damage was limited to the steam turbine and enclosure, the generator and enclosure, and nearby equipment and buildings.

Combined cycle Unit 1 began commercial operation in 2001. The damaged steam turbine will be repaired or replaced with an identical unit. The electrical generator will be replaced with an identical unit except for the cooling system. The original generator was a direct air induction cooled generator, but the replacement generator will be a totally enclosed water-to-air cooled (TEWAC) unit. The replacement unit will require additional water for the heat exchanger. Nevertheless, replacement of the steam turbine and electrical generator will not increase the capacity of the unit, utilization of the unit or actual emissions.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210, and 62-212 of the Florida Administrative Code (F.A.C.). The Department of Environmental Protection's Bureau of Air Regulation is the Permitting Authority responsible for making a determination for this project. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite #4, Tallahassee, Florida 32301. The Permitting Authority's mailing address is: 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/488-0114.

Determination: The Department approves your request as described in your letter dated September 5, 2007. Pursuant to Rule 62.4.040(1)(b), F.A.C., the Department exempts the proposed work from the requirement to obtain an air construction permit. This determination may be revoked if the proposed activity is substantially modified or the basis for the exemption is determined to be materially incorrect. A copy of this letter shall be maintained at the site of the proposed activity. This permitting decision is made pursuant to Chapter 403, Florida Statutes.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by the applicant or any other parties must be filed within 21 days of receipt of this Written Notice of Exemption. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of when and how each petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Written Notice of Exemption. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

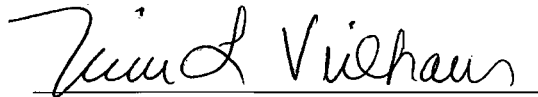
Mediation: Mediation is not available in this proceeding.

Effective Date: This permitting decision is final and effective on the date filed with the clerk of the Department unless a petition is filed in accordance with the above paragraphs or unless a request for extension of time in which to file a petition is filed within the time specified for filing a petition pursuant to Rule 62-110.106, F.A.C., and the petition conforms to the content requirements of Rules 28-106.201 and 28-106.301, F.A.C. Upon timely filing of a petition or a request for extension of time, this action will not be effective until further order of the Department.

Appeal: Any party to this permitting decision (order) has the right to seek judicial review of it under Section 120.68, F.S., by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel, Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

CASE-BY-CASE EXEMPTION

Executed in Tallahassee, Florida.



Trina Vielhauer, Chief
Bureau of Air Regulation

The undersigned duly designated deputy agency clerk hereby certifies that this case-by-case exemption was sent by electronic mail with received receipt requested before the close of business on

9/20/07 to the persons listed below.

Mr. Michael Opalinski, SECI (mopalinski@seminole-electric.com)

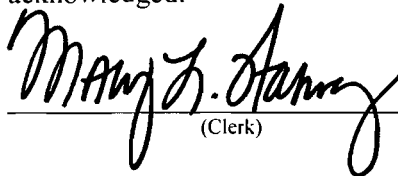
Mr. Mike Roddy, SECI (wmroddy@seminole-electric.com)

Mr. Mike Halpin, Siting Office (Halpin_M@dep.state.fl.us)

Ms. Cindy Zhang-Torres, SD Office (Cindy.Zhang-Torres@dep.state.fl.us)

Clerk Stamp

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


(Clerk)

9/20/07
(Date)



RECEIVED

9/05/07

SEP 10 2007

BUREAU OF AIR REGULATION

Jeffrey F. Koerner
FDEP-Division of Air Resources Management
2600 Blair Stone Road
MS # 5505
Tallahassee, FL 32399-2400

Dear Mr. Koerner:

This letter is written in response to our recent phone conversation concerning the rebuild of our steam turbine at the Midulla Generating Station (formerly known as Payne Creek Generating Station). The rebuild is due to a major failure and fire that occurred in April of 2007, and Seminole is requesting confirmation from the Department that no permit is required for this like-kind rebuild.

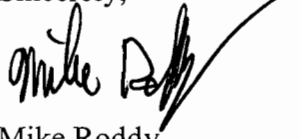
On April 14th at approximately 2034 eastern daylight savings time the steam turbine experienced a failure of the steam turbine low pressure blading that resulted in a severe vibration and movement of the steam turbine and generator shaft. A fire resulted that was exacerbated by the severing of the lubricating oil lines to the generator which allowed the oil to feed the fire. Damage was limited to the steam turbine, its enclosure, the generator and its enclosure, as well as damage to nearby equipment and buildings.

Clean up activities began the night of the incident within two hours after the fire was controlled. Oil contaminated soil and rock around the steam turbine generator pad were removed and disposed of through our Emergency Response Cleanup Contractor. Removal of damaged major equipment (steam turbine/generator) has been completed. Demolition of damaged concrete, steel etc will be performed in October 2007. Rebuild will commence in November 2007, with completion scheduled for May 2008.

The damaged steam turbine was a Siemens frame machine and will be repaired/replaced as required, with an identical machine. The electric generator will be replaced with an identical generator with the exception of the method of cooling. The original generator was a direct air induction cooled generator, whereas the replacement will be a Totally Enclosed Water to Air Cooled (TEWAC) unit. Additional cooling water will be required for the heat exchanger. Replacing the damaged steam turbine and generator will not result in an increase in the capacity or utilization of the unit, or increase actual emissions, as the steam turbine is not even an emission source (see attached Flow Diagram).

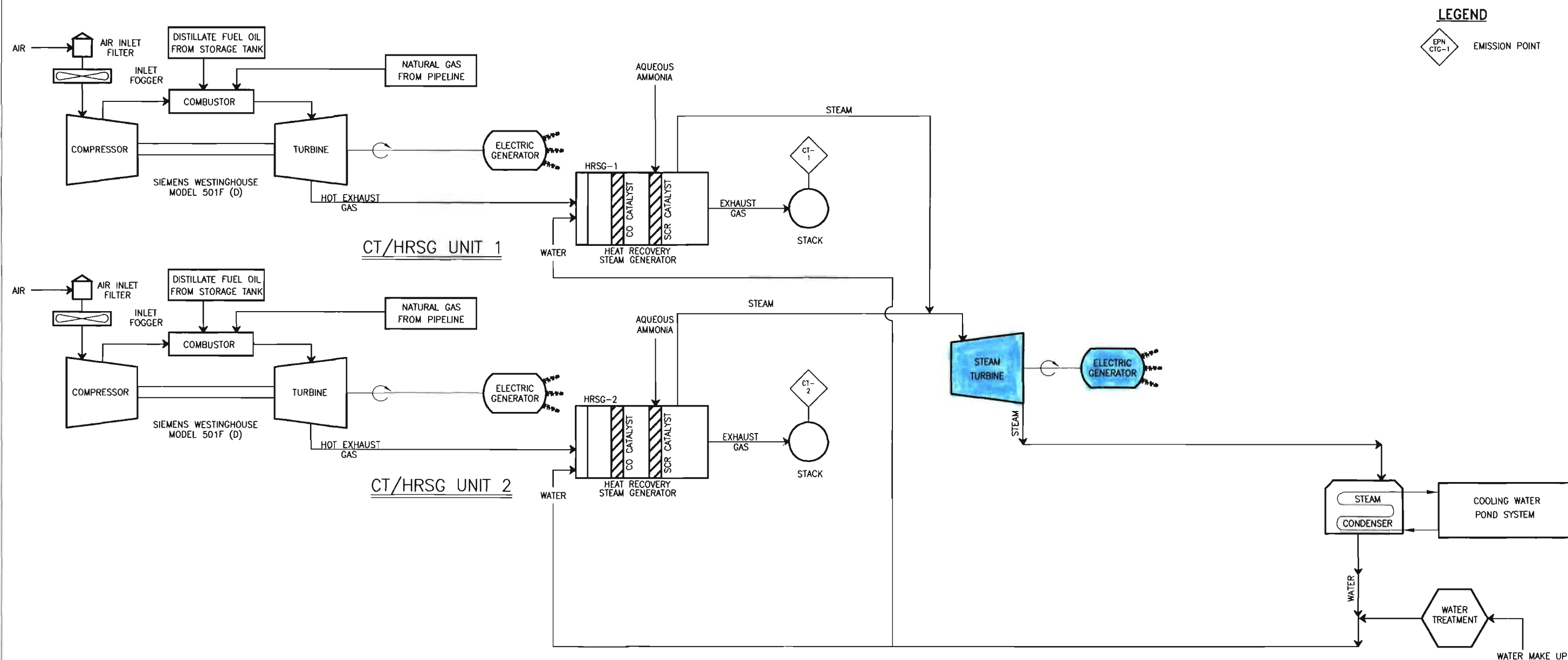
Thank you for your attention to this matter. As we discussed, Seminole understands, and requests confirmation from the Department that this rebuild project does not trigger any air permitting requirements. Please let me know if you have any further questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Mike Roddy", with a long, sweeping flourish extending from the end of the signature.

Mike Roddy

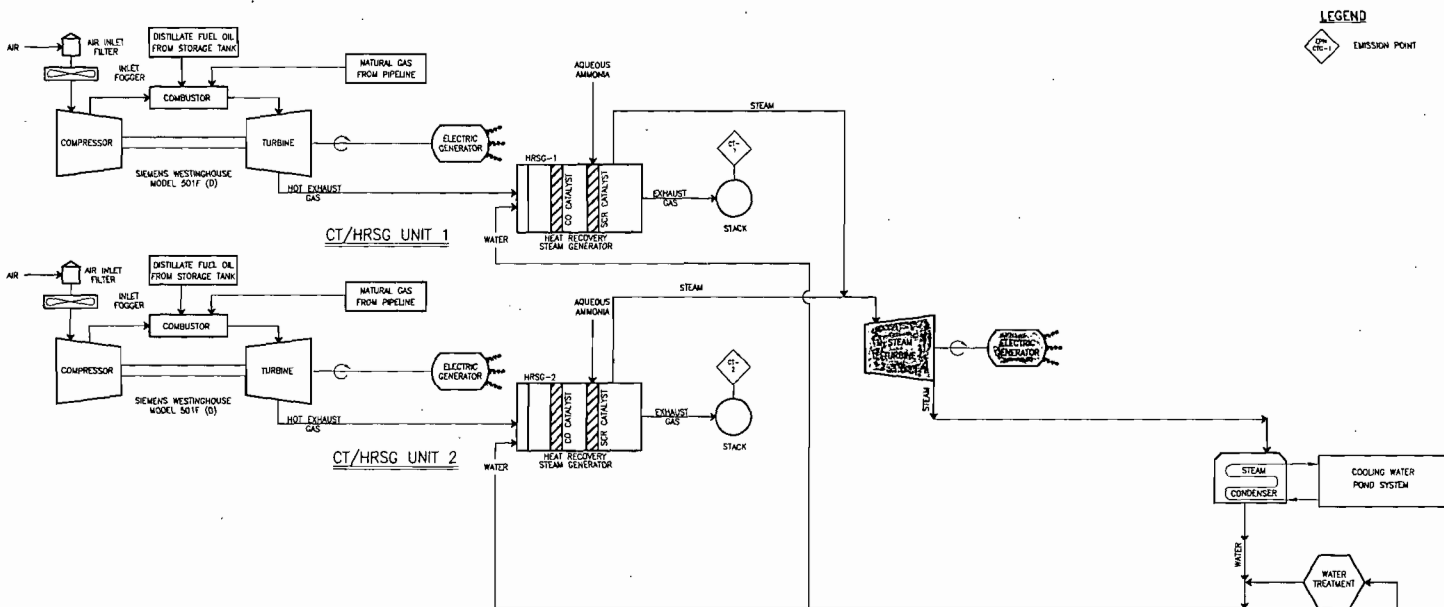
Manager of Environmental Affairs



ATTACHMENT 2-A.

PAYNE CREEK GENERATING STATION
PROCESS FLOW DIAGRAM - COMBINED CYCLE UNITS

Source: ECT, 2007.



ATTACHMENT 2-A.

PAYNE CREEK GENERATING STATION
PROCESS FLOW DIAGRAM - COMBINED CYCLE UNITS

Source: ECT, 2007.

Is your RETURN 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):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Mr. Michael Opalinski
Seminole Electric Coop
P O Box 272000
Tampa, FL

33688-2000

4a. Article Number

2 333 618 114

4b. Service Type

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

7. Date of Delivery

7-27-99

5. Received By: (Print Name)

William RSHY

6. Signature: (Addressee or Agent)

X William RSHY

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

PS Form 3811, December 1994

102595-98-B-0229

Domestic Return Receipt

Thank you for using Return Receipt Service.

Z 333 618 114

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to	
Michael Opalinski	
Street & Number	
Seminole Electric	
Post Office, State, & ZIP Code	
Tampa 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	
PSO-FI-214A 7-23-99	
PA 89-255A	

PS Form 3800, April 1995

PAYNE CREEK - ENGINEERING/CONSTRUCTION/PROCUREMENT

[illegible]

AFFIDAVIT OF PUBLICATION

The Herald-Advocate

Published Weekly at Wauchula, Florida

STATE OF FLORIDA,
COUNTY OF HARDEE

Before the undersigned authority personally appeared Jim Kelly
who on oath says he is the editor of The Herald-Advocate, a news
paper published at Wauchula, in Hardee County, Florida; that the attached copy of

advertisement, being a Public Notice

in the matter of intent to issue PSD Permit Modification

in the _____ Court, was published in said newspaper in

the issues of 5.20.1999

Affiant further says that the said Herald-Advocate is a newspaper published
at Wauchula, in said Hardee County, Florida, and that the said newspaper has hereto-
fore been continuously published in said Hardee County, Florida, each week and has
been entered as second class mail matter at the post office in Wauchula, in said Har-
dee County, Florida, for a period of one year next preceding the publication of the
attached copy of advertisement; and affiant further says that he has neither paid nor
promised any person, firm or corporation any discount, rebate, commission or refund
for the purpose of securing this advertisement for publication in the said newspaper.

Sworn to and subscribed before me this 21 day of May

A. D. 1999

Theresa V. Cimmino
Notary Public

My Commission Expires June 15 19 2002

RECEIVED

MAY 26 1999

BUREAU OF
AIR REGULATION

Pursuant to Condition of
Certification XXVIII.C of the separate
Power Plant Site (PPSA) Certification
Order. PA 89-25SA, for the Hardee
Power Station Unit 3, the PPSA cer-
tification will be automatically modified
to conform to amendments to the
facility's PSD permit. Upon issuance
of any amended PSD permit, the
Department will also modify the par-
allel PPSA conditions of certification-
to conform to the amended condi-
tions of the PSD permit.

A complete project file is available
for public inspection during normal
business hours, 8:00 a.m. to 5:00
p.m., Monday through Friday, except
legal holidays, at:

Dept. of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301
Telephone: 850/488-0114
Fax: 850/922-6979

Dept. of Environmental Protection
Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619-8218
Telephone: 813/744-6100
Fax: 813/744-6084

The complete project file includes
the Draft Permit Modification, the
application, and the information sub-
mitted by the applicant or responsi-
ble official, exclusive of confidential
records under Section 403.111, F.S.
Interested persons may contact the
Bureau of Air Regulation at 111 South
Magnolia Drive, Suite 4, Tallahassee,
Florida 32301, or call 850/488-0114
for additional information.

Theresa V. Cimmino
Commission # CC 739052
Expires June 15, 2002
BONDED THRU
ATLANTIC BONDING CO., INC.

PUBLIC NOTICE OF INTENT TO
ISSUE PSD PERMIT MODIFICATIONSTATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

DEP File PSD-FL-214A/PA-89-25SA

Hardee Power Station Unit 3
(Payne Creek Generating Station)
Hardee County

The Department of Environmental
Protection (Department) gives notice
of its intent to issue a PSD Permit
Modification to Seminole Electric
Cooperative Incorporated (Seminole)
to install a Selective Catalytic
Reduction (SCR) system and a car-
bon monoxide (CO) oxidation cata-
lyst control system at its Combined
Cycle Facility to be located near
Bowling Green, Hardee County. A
Best Available Control Technology
determination was not required pur-
suant to Rule 62-212.400, F.A.C. or
40CFR52.21, Prevention, of
Significant Deterioration (PSD). The
applicant's name and address are:
Seminole Electric Cooperative
Incorporated, Post Office Box
272000, Tampa, Florida 33688-2000.

The facility was originally permit-
ted in 1995 as a 440 megawatt power
plant consisting of two Westinghouse
Model 501F (or equivalent) gas or oil-
fired combustion turbines and a heat
recovery steam generator. The actual
equipment to be installed has a
power capability of 488 MW and is
powered by two
Siemens/Westinghouse 501F(D)
combustion turbines. The current
permit requires that nitrogen oxides
(NO_x) emissions be controlled
through Dry Low NO_x (DLN) combus-
tion technology. The DLN combustors
installed will not be able to achieve
the permit limit of 15 parts per million
volume dry (ppmvd) at 15 percent
oxygen (O₂) or 106 pounds per hour
per turbine. Siemens/Westinghouse
and Seminole have decided to install
Selective Catalytic Reduction (SCR)
in addition to
Siemens/Westinghouse's present
generation of DLN combustors in
order to comply with the revised per-
mitted limit for NO_x of 12 ppmvd @
15% O₂. The revised NO_x emission
limit of 12 ppmvd @ 15% O₂ will be
granted for a period of one year (12
months) from the start-up date. The
NO_x emission limit will be reduced to
9 ppmvd @ 15% O₂ based on the
operating experience of the combus-
tion turbines with SCR.

The applicant has consented to
equip the combustion turbines with
CO oxidation catalyst control system
to meet the established CO limits in
the existing PSD permit. Seminole
has also requested that the name for
Hardee Unit 3 be changed to "Payne
Creek Generating Station".

Adjustments to emission limits due
to the change in combustion turbines
have been less than PSD significant
amounts. These changes will not

the National Ambient Air Quality
Standards or Allowable Increments
under the requirements for
Prevention of Significant
Deterioration of Air Quality.

The Department will accept written
comments concerning the proposed
permit modification issuance action
for a period of 30 (thirty) days from
the date of publication on "Public
Notice of Intent to Issue PSD Permit
Modification." Written comments
should be provided to the
Department's Bureau of Air
Regulation at 2600 Blair Stone Road,
Mail Station 5505, Tallahassee, FL
32399-2400. Any written comments
filed shall be made available for pub-
lic inspection. If written comments
received result in a significant
change in the proposed agency
action, the Department shall revise
the proposed permit modification and
require, if applicable, another Public
Notice.

The Department will issue the per-
mit modification with the attached
conditions unless a timely petition for
an administrative hearing is filed pur-
suant to Sections 120.569 and 120.57
F.S., before the deadline for filing a
petition. The procedures for petition-
ing for a hearing are set forth below.
Mediation is not available in this pro-
ceeding.

A person whose substantial inter-
ests are affected by the proposed
permitting decision may petition for
an administrative proceeding (hear-
ing) under Sections 120.569 and
120.57 of the Florida Statutes. The
petition must contain the information
set forth below and must be filed
(received) in the Office of General
Counsel of the Department at 3900
Commonwealth Boulevard, Mail
Station 35, Tallahassee, Florida,
32399-3000. Petitions filed by the per-
mit applicant or any of the parties list-
ed below must be filed within four-
teen days of receipt of this notice of
intent. Petitions filed by any persons
other than those entitled to written
notice under Section 120.60(3) of the
Florida Statutes must be filed within
fourteen days of publication of the
public notice or within fourteen days
of receipt of this notice of intent,
whichever occurs first. Under Section
120.60(3), however, any person who
asked the Department for notice of
agency action may file a petition with-
in fourteen days of receipt of that
notice, regardless of the date of pub-
lication. A petitioner shall mail a copy
of the petition to the applicant at the
address indicated above at the time
of filing. The failure of any person to
file a petition within the appropriate
time period shall constitute a waiver
of that person's right to request an
administrative determination (hear-
ing) under Sections 120.569 and
120.57 F.S., or to intervene in this pro-
ceeding and participate as a party to
it. Any subsequent intervention will
be only at the approval of the presid-
ing officer upon the filing of a motion
in compliance with Rule 28-106.205
of the Florida Administrative Code.

A petition that disputes the materi-
al facts on which the Department's
action is based must contain the fol-
lowing information: (a) The name and
address of each agency affected and
each agency's file or identification
number, if known; (b) The name,
address, and telephone number of
the petitioner, the name, address, and
telephone number of the petitioner's
representative, if any, which shall be
the address for service purposes dur-
ing the course of the proceeding; and
an explanation of how the petitioner's
substantial interests will be affected
by the agency determination; (c) A
statement of how and when petitioner
received notice of the agency action
or proposed action; (d) A statement
of all disputed issues of material fact.
If there are none, the petition must so
indicate; (e) A concise statement of
the ultimate facts alleged, as well as
the rules and statutes which entitle
the petitioner to relief; and (f) A
demand for relief.

A petition that does not dispute the
material facts upon which the
Department's action is based shall
state that no such facts are in dispute
and otherwise shall contain the same
information as set forth above, as
required by Rule 28-106.301.

Because the administrative hearing
process is designed to formulate final
agency action, the filing of a petition
means that the Department's final
action may be different from the pos-
ition taken by it in this notice. Persons
whose substantial interests will be
affected by any such final decision of
the Department on the application
have the right to petition to become a
party to the proceeding, in accor-
dance with the requirements set forth
above.

Is your RETURN 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):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Michael Opalinski, DEA
Seminole Electric
PO Box 272000
Tampa, FL 33688-2000

4a. Article Number

2 333 618 105

4b. Service Type

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

7. Date of Delivery

5-16-99

5. Received By: (Print Name)

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

6. Signature: (Addressee or Agent)

X William R. Ste

PS Form 3811, December 1994

102595-97-B-0179

Domestic Return Receipt

Thank you for using Return Receipt Service.

2 333 618 105

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to: Michael Opalinski	
Street & Number: Seminole Electric	
Post Office, State, & ZIP Code: Tampa 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: PSD-F1-214A 5-6-99	

PS Form 3800, April 1995

Is your RETURN 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):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Mike Opalinski
Director of Env. affairs
Seminole Electric Corp
16313 N. Dale Mabry
Tampa, FL 33618

4a. Article Number

P 265 659 405

4b. Service Type

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

7. Date of Delivery

8-13-98

5. Received By: (Print Name)

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

6. Signature: (Addressee or Agent)

X *William R. [Signature]*

PS Form 3811, December 1994

102595-97-B-0179

Domestic Return Receipt

Thank you for using Return Receipt Service.

P 265 659 405

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to	Mike Opalinski
Street & Number	Seminole Electric
Post Office, State, & ZIP Code	Tampa 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	8-11-98

PS Form 3800, April 1995

Z 127 632 526



Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to <u>William Walbridge</u>	
Street and No. <u>Seminole Electric</u>	
P.O., State and ZIP Code <u>Tampa, FL</u>	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	<u>9-28-95</u>
<u>PSD-FI-214</u>	

PS Form 3800, March 1993

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- 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:
William C. Walbridge
Seminole Electric Corp.
P.O. Box 272000
Tampa, FL
33688-2000

4a. Article Number
Z 127 632 526

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
10-2-95

5. Signature (Addressee)

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

6. Signature (Agent)

PS Form 3811, December 1991

U.S. GPO: 1993-352-714

DOMESTIC RETURN RECEIPT

Thank you for using Return Receipt Service.

Z 751 860 033



Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

PS Form 3800, March 1993

Sent to <i>William C. Walbridge</i>	
Street and No. <i>Seminole Electric</i>	
P.O. State and ZIP Code <i>Tampa, FL</i>	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date <i>PSD-FL-214 2-21-95</i> <i>PA-89-253A</i> <i>Hardee + Polk Cities</i>	

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- 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:
William C. Walbridge
Executive V.P.
Seminole Electric Coop Inc
P.O. Box 272000
Tampa, FL 33688-2000

4a. Article Number
Z 751 860 033

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
2-24-95

5. Signature (Addressee)

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

6. Signature (Agent)

PS Form 3811, December 1993

*U.S. GPO: 1992-323-402

DOMESTIC RETURN RECEIPT

Thank you for using Return Receipt Service.

THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

In the Matter of an
Application for Permit by:

OGC CASE NO.: 99-_____

FDEP Construction Permit No.: PSD-FL-214A/
PA-89-25SA

Seminole Electric Cooperative, Inc.
Hardee Power Station Unit 3
Payne Creek Generating Station
Hardee County, Florida

WITHDRAWAL OF REQUEST FOR ENLARGEMENT OF TIME

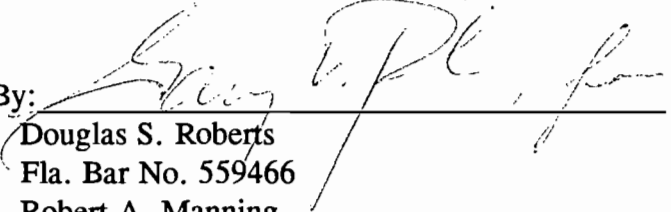
By and through undersigned counsel, Seminole Electric Cooperative, Inc. (Seminole) hereby withdraws its Request for An Enlargement of Time to file a petition for formal administrative proceedings concerning the subject permit, in accordance with Chapter 120, Florida Statutes. On May 24, 1999, Seminole filed its Request for Extension of Time until July 24, 1999, in response to the Department of Environmental Protection's (Department) "Intent to Issue PSD Permit Modification" for FDEP Construction Permit No.: PSD-FL-214(A)/PA-89-25SA for the Hardee Power Station Unit 3 (Payne Creek Generating Station) located in Hardee County, Florida. The request was filed to allow Seminole additional time in which to discuss and negotiate certain changes in the modified PSD permit with the Department. Seminole and the Department have now come to an agreement on the issues involved in the above-referenced modified PSD permit. This agreement is reflected in the draft FDEP Construction Permit No.: PSD-FL-214A/PA-89-25SA, a copy of which is provided and incorporated by reference herein as

Attachment A. The Department has agreed to issue a final modified PSD permit with the language reflected in Attachment A, which is acceptable to Seminole.

Therefore, Seminole hereby withdraws its Request for Extension of Time, conditioned upon the Department's issuance of a Final modified PSD Permit in accordance with the agreement reflected in Attachment A hereto.

Respectfully submitted this 20th day of July 1999.

HOPPING GREEN SAMS & SMITH, P.A.

By: 

Douglas S. Roberts
Fla. Bar No. 559466
Robert A. Manning
Fla. Bar No. 0035173
123 South Calhoun Street
Post Office Box 6526
Tallahassee, FL 32314
(850) 222-7500

Attorneys for SEMINOLE ELECTRIC
COOPERATIVE, INC.

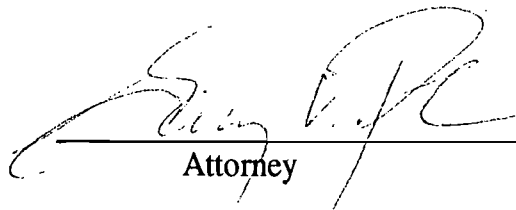
CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of the foregoing has been furnished to the following by

U.S. Mail on this 20th day of July 1999:

Al Linero
Bureau of Air Regulation
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Scott Goorland, Esq.
Department of Environmental Protection
Room 669
2600 Blair Stone Road
Tallahassee, FL 32399-2400


Attorney

RECEIVED

MAY 25 1999

BUREAU OF
AIR REGULATION

THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

In the Matter of an
Application for Permit by:

OGC CASE NO.: 99-_____

FDEP Construction Permit No.: PSD-FL-214(A)/
PA-89-25SA

Seminole Electric Cooperative, Inc.
Hardee Power Station Unit 3
Payne Creek Generating Station
Hardee County, Florida

REQUEST FOR ENLARGEMENT OF TIME

By and through undersigned counsel, Seminole Electric Cooperative, Inc. (Seminole) hereby requests, pursuant to Florida Administrative Code Rule 62-110.106(4), an enlargement of time, to and including July 24, 1999, in which to file a Petition for Administrative Proceedings in the above-styled matter. As good cause for granting this request, Seminole states the following:

1. On or about May 10, 1999, Seminole received from the Department of Environmental Protection (Department) an "Intent to Issue PSD Permit Modification" for FDEP Construction Permit No.: PSD-FL-214(A)/PA-89-25SA for the Hardee Power Station Unit 3 (Payne Creek Generating Station) located in Hardee County, Florida.
2. Based on Seminole's review, the PSD permit modification and associated documents contain several provisions that warrant clarification or correction.
3. This request is filed simply as a protective measure to avoid waiver of Seminole's right to challenge certain conditions contained in the PSD permit modification. Grant of this

request will not prejudice either party, but will further their mutual interest and hopefully avoid the need to file a petition and proceed to a formal administrative hearing.

WHEREFORE, Seminole respectfully requests that the time for filing of a Petition for Administrative Proceedings in regard to the Department's Intent to Issue PSD Permit Modification (FDEP Construction Permit No.: PSD-FL-214(A)/PA-89-25SA) be formally enlarged to and including July 24, 1999. If the Department denies this Request, Seminole requests the opportunity to file a Petition for Administrative Proceeding within 10 days of such denial.

Respectfully submitted this 24 day of May, 1999.

HOPPING GREEN SAMS & SMITH, P.A.

By: Robert Manning
Douglas S. Roberts
Fla. Bar No. 559466
Robert A. Manning
Fla. Bar No. 0035173
123 South Calhoun Street
Post Office Box 6526
Tallahassee, FL 32314
(850) 222-7500

Attorneys for SEMINOLE ELECTRIC
COOPERATIVE, INC.

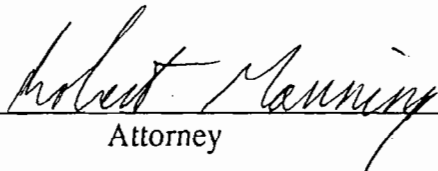
CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of the foregoing has been furnished to the following by

U.S. Mail on this 24 day of May, 1999:

Al Linero
Bureau of Air Regulation
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Scott Gorland, Esq.
Department of Environmental Protection
Room 669
2600 Blair Stone Road
Tallahassee, FL 32399-2400



Attorney



CELEBRATING
YEARS
1948-1998
SERVING OUR MEMBER SYSTEMS

C O V E R
S H E E T

FAX

To: Syed Arif
Company: FDEP
Fax #: (850) 922-6979
Subject: Hardee Unit 3
Date: December 9, 1998
Pages: 3, including this cover sheet.
From: Mike Roddy

If you do not receive all of the pages, please call the Copy Room x1282.

COMMENTS:

Syed: I just noticed that in the letter we sent you on Dec. 1, 1998 had part of a sentence missing on the last line of the 1st page where it carries over to the second page. Attached is a corrected version (with a complete sentence). Sorry about the typo. An original will follow. Thanks, Mike Roddy.

Seminole Electric Cooperative, Inc.

P.O. BOX 272000 ♦ Tampa, Florida 33688-2000 ♦ (813) 963-0994
♦ Fax (813) 264-7906 ♦



CELEBRATING
YEARS
1948-1998

SERVING OUR MEMBER SYSTEMS

December 9, 1998

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

RE: Seminole Electric Cooperative, Inc.
Hardee Unit 3
PSD-FL-214

Dear Mr. Linero:

Pursuant to our discussions on November 12, 1998 and to the provisions of the PSD permit for Hardee Unit 3, Seminole Electric Cooperative, Inc., hereby submits to the Department information on the combustion turbines and related equipment that are being installed as part of this project in Hardee County, Florida.

As you recall, Specific Condition E.3.a. of the facility's PSD Permit, PSD-FL-214, provides that:

The following information shall be submitted to the Department's Bureau of Air Regulation...

- a. Description of the final selection of the turbines for installation at the facility. The descriptions shall include the specific make and model numbers and any changes in the proposed method of operation, fuels, emissions or equipment.

Seminole has selected the Westinghouse 501F(D) Combustion Turbine for this project. Westinghouse (now known as Siemens/Westinghouse Power Corporation) is the same manufacturer and the selected CT is the same class of Westinghouse combustion turbine originally selected for the project. The Westinghouse 501F(D) Combustion Turbine is the specific make and model number of the selected CT. Seminole does not expect there to be any changes either in the proposed method of operation of the combustion turbines or in the project itself. Fuels burned in the facility will continue to be limited to natural gas and low-sulfur fuel oil (equivalent to a Jet A-quality or

better grade No. 2 fuel oil.). The selected combustion turbine will operate within all emission limits established under the PSD Permit.

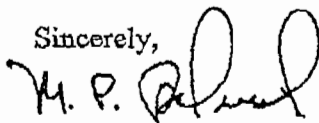
The combustion turbines will be "equipped with dry low NOx combustors or an equivalent system for natural gas firing and wet injection for fuel oil firing" as provided for in the permit. (See page 1 of 15, and page 8 of 15, Specific Condition B.3.) In addition to the dry low NOx combustors, the facility will also include an adequately sized selective catalytic reduction system which is an equivalent NOx control system to the combustors and which will achieve all of the NOx emission limits in the existing PSD permit. Pursuant to Specific Conditions B.4. and 5. of the permit, Seminole will collect twelve months of monitoring data from the facility from the operational date and will submit an engineering report to the Department, which will include our conclusions regarding the lowest NOx emission rate that can be consistently and reasonably achieved for the facility. Based upon this monitoring and report, the Department may amend the facility's permitted NOx emission limit to as low as 9ppm. Each combustion turbine will also be equipped with a carbon monoxide oxidation catalyst control system to meet the established CO limits in the existing PSD Permit.

The provision for heat recovery steam generator (HRSG) by-pass stacks has been eliminated and therefore, the Hardee Unit 3 combustion turbines will only operate in combined cycle mode. In addition, the HRSG stacks have been increased in height from 90 to 175 feet above ground level. Because allowable emission rates remain unchanged and stack heights have increased, maximum air quality impacts will be below the maximum impact levels originally projected for the Hardee Unit 3 Project.

The maximum heat input to each of the two CTs at an ambient temperature of 32° F will increase from 1,862 million Btu per hour to 1,964 million Btu per hour while firing natural gas and decrease from 1,965 million Btu per hour to 1,889 million Btu per hour while firing fuel oil. This slight increase in heat input, while firing gas, from that originally expected will not affect project emissions as all emissions will be at or below current permitted levels for both short-term and long-term periods. Similarly, the electrical output of the plant will be 488 megawatts (nominal) compared to the originally expected 440 megawatt electrical output from the combined cycle power plant. In all respects, the project will comply with all of the other established permit limits and conditions for the Hardee Unit 3 Project.

Seminole will submit the other required notices for the project as we proceed, including those under Specific Condition E.2. Should you have any questions concerning this matter, please do not hesitate to contact either Mike Roddy or myself at (813) 963-0994.

Sincerely,



Michael P. Opalinski
Director of Environmental Affairs

CC: Mr. H. S. Owen (FDEP)



Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

August 10, 1998

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Mike Opalinski
Director of Environmental Affairs
Seminole Electric Cooperative, Inc.
16313 North Dale Mabry Highway
Tampa, Florida 33618

Re: Permit Expiration - Commencement of Construction

Dear Mr. Opalinski:

Per our discussion, attached is a memorandum summarizing EPA's policy regarding extension of the 18-month commencement of construction deadline given in 40 CFR 52.21(r)(2). For reference, it has been approximately 36 months since the permit for the Hardee Unit 3 was issued. It will expire on January 1, 2000.

Both the Federal rules in 40 CFR 52.21 and the State rules in 62-212.400, F.A.C. apply to PSD permits issued to projects reviewed under the Florida Power Plant Siting Act.

If you have any questions regarding this matter, please call me at (850)921-9523.

Sincerely,

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

AAL/kt

cc: B. Oven, PPS

THE TEXT YOU ARE VIEWING IS A COMPUTER-GENERATED OR RETYPED VERSION OF A PAPER PHOTOCOPY OF THE ORIGINAL. ALTHOUGH CONSIDERABLE EFFORT HAS BEEN EXPENDED TO QUALITY ASSURE THE CONVERSION, IT MAY CONTAIN TYPOGRAPHICAL ERRORS. TO OBTAIN A LEGAL COPY OF THE ORIGINAL DOCUMENT, AS IT CURRENTLY EXISTS, THE READER SHOULD CONTACT THE OFFICE THAT ORIGINATED THE CORRESPONDENCE OR PROVIDED THE RESPONSE.

11.12

TRANSMITTAL NOTICE: 2-88

September 8, 1988

MEMORANDUM

SUBJECT: EPA Region IX Policy on PSD Permit Extensions

FROM: Wayne Blackard, Chief
New Source Section

TO: Region IX States and Districts
NSR/PSD Permitting Contacts

Attached for your information is a copy of a guidance document prepared by my staff addressing EPA Region IX's policy on PSD permit extensions. The purpose of this document is to clarify the criteria EPA examines prior to extending the 18-month commencement of construction deadline found in 40 CFR 52.21 (r)(2). At the heart of these requirements are assurances of current BACT determinations and continued public participation when permits are extended. Our hope is that this policy will enhance agreement among permitting agencies in implementing PSD regulations.

We hope you will find this document helpful. If you have any questions, please contact me at (415) 974-8249.

EPA Region IX
New Source Section
Guidance Document: 1-88
Date: 3/23/88 (PMF)
Revised: 7/6/88

EPA REGION IX POLICY

ON

PSD PERMIT EXTENSIONS

The following is EPA Region IX's policy regarding Prevention of Significant Deterioration (PSD) permit extensions. This policy clarifies the subject of extensions of the 18-month commencement of construction deadline found in 40 CFR 52.21 (r) (2).

The intent of this policy is to grant a permit extension of the 18-month deadline to any good faith application, provided the following requirements are met. If these requirements are not met or if the extension request is denied, the permit will become invalid after its expiration date. The applicant,

however, may choose to file a project application for consideration as a new permit. In general, the import of this policy is to ensure that the proposed permit meets the current EPA requirements, and that the public is kept apprised of the proposed action (i.e. through the 30-day public comment period).

I. ADMINISTRATIVE REQUIREMENTS

(1) Submittal

An extension request must be submitted and received by EPA- Region IX prior to the expiration date of the permit.

(2) Justification

The extension request must include an acceptable justification why the commencement of construction did not commence as scheduled. The request must also include a revised construction schedule which assures that construction will be initiated during the extension period and that construction will be continuous.

(3) Certification

The extension request must be signed by a responsible representative of the company proposing the project.

II. TECHNICAL REQUIREMENTS

(1) BACT Analysis

A BACT reanalysis is required in all permit extension requests, as in an application for a new PSD

permit. It should also be noted that, according to a recent EPA policy, any new BACT determination being prescribed for any regulated pollutant must also consider the impact of the proposed BACT on the emissions of unregulated or toxic pollutants.

(2) Additional PSD Review Requirement

A reanalysis of the PSD increment consumption and air quality impacts is required. Interim source growth in the area may have occurred and caused significant degradation of air quality. Therefore, the review agency is responsible for ensuring that the source requesting an extension would not cause or contribute to a PSD increment or NAAQS exceedances.

(3) New PSD Regulations or Requirements

It is not the intent of this policy to exempt projects from meeting new requirements. Therefore, all new or interim PSD requirements will be applied as in an application for a new PSD permit

III. PROCEDURAL ISSUES

(1) Duration of Extensions

Due to concerns of growth rights and public participation, EPA may limit an extension to 12 months, or less, from the initial date the permit was to expire. This allows for an extension, if necessary, while ensuring that impacted States, Districts and the public have control of their own air resources and growth rights and that state-of-the-art BACT will be employed.

(2) Public Comment

EPA will require the same public comment procedure for extension requests as for permit modifications including a 30-day public comment period. Requests for public hearings and petitions for permit appeals shall follow the applicable procedures of 40 CFR Part 124.

(3) Extensions of Later Units of Phased Multi-Unit Projects

Determinations for phased multi-unit projects are very complex involving the independence or dependence of a project and often different construction dates. Therefore, please consult with EPA regarding any questions addressing phased construction projects.

EPA Staff Contact:

Peter Fickenscher (415) 974-8226 (FTS 454-8226)

Section Chief:

Wayne Blackard (415) 974-8249 (FTS 454-8249)

Memorandum

Florida Department of Environmental Protection

TO: Clair Fancy

FROM: A. A. Linero, P.E. *AAL* 7/30

DATE: July 30, 1998

SUBJECT: Seminole Electric Hardee Unit 3
PSD-FL-214

The subject permit issued in 1995 will expire on January 1, 2000. According to the ten year Site Plan filed by Seminole Electric with the Public Service Commission, field construction will begin on January 2000 with a planned in-service date of January 2002.

The permit NO_x conditions require achievement of a lb/hr limit based on 15 ppm by Dry Low NO_x technology. There is a provision requiring that the BACT be reset to a level as low as 9 ppm based on the result of initial testing of the Dry Low NO combustors.

Seminole originally planned to purchase the unit from Westinghouse and is still negotiating with them on various technical issues. I originally sealed the technical evaluation on this permit. I no longer have reasonable assurance that the facility as designed will comply with our permit conditions, rules and regulations based on Westinghouse projects in Florida, Georgia and Missouri. I am concerned that if the facility resorts to SCR, they will specify a system capable of achieving a NO_x rate of 15 ppm at full capacity and a limit as high as 30 ppm at low load. This would not represent the limits I would have required had SCR been considered feasible when the unit was permitted.

Because construction was discontinued for at least 18 months, the approval to construct has become invalid according to the EPA Rules for delegated PSD programs at 40CFR52.21(r)(1), Source Obligation. This period can be extended by the "Administrator" upon a satisfactory showing that an extension is justified.

I believe there is good reason to require (by a permit modification) the facility to achieve a lower NO_x limit through SCR if it cannot achieve 15 ppm by Dry Low NO_x. Our most recent evaluation of NO_x removal costs by SCR are approximately \$2,500 per ton when installed following Westinghouse's commercially demonstrated Dry Low NO_x combustors capable of reducing NO_x to about 40 ppm.

A project with a completion date of 2002 would have typically been permitted in 1998 or 1999. At this time SCR technology for such projects should be 7.5 ppm as specified for the Lakeland project upon conversion to combined cycle.

I plan to call Seminole and advise them of the matter so that Westinghouse can design a proper SCR system should they be awarded the final contract for the project.

AAL/aal

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-258A)

SPECIFIC CONDITIONS:

B. Emission Limits

1. Pursuant to Rule 62-212.410, F.A.C., BACT, the maximum allowable emission limitations from two CTs, when firing natural gas or No. 2 fuel oil, shall not exceed the following:

MAXIMUM ALLOWABLE EMISSION LIMITATIONS

<u>POLLUTANT</u>	<u>FUEL</u>	<u>CONCENTRATION</u>	<u>lbs/hr (a)</u>	<u>TPY (b)</u>	<u>TPY (TOTAL) c</u>
NO _x	Gas	15 ppmvd (d)	106	931	1212
	Oil	42 ppmvd (e)	336	504	
CO	Gas	20 ppmvd	71	622	618
	Oil	25 ppmvd	91	136	
PM/PM ₁₀	Gas		7	65	147
	Oil		67	100	
SO ₂	Gas		5	47	182
	Oil		101	152	
VOC	Gas	5 ppmvd	10	88	99
	Oil	10 ppmvd	21	31	
Sulfuric Acid Mist	Gas		1	6	39
	Oil		22	34	
Beryllium	Oil		0.0049	0.007	0.007
Arsenic	Oil		0.0097	0.014	0.014
Visible Emissions	Gas		≤ 10 percent opacity		
	Oil		≤ 10 percent opacity		

- (a) The emission limitations in lbs/hr/CT are a 1-hour average as determined pursuant to the Performance Testing conducted pursuant to Condition C.1 below.
- (b) The annual emission limitations (TPY) for natural gas are based on two CTs operating at full load for 8,760 hours per year. The annual emission limitations (TPY) for fuel oil are based on the equivalent of full-load operation for a maximum of 1500 hours per year for each of the two CTs (not to exceed 3,000 hrs/yr between the two CTs). The emission calculations are also based at a worst case ambient temperature of 32°F.
- (c) Maximum allowable emissions from two CTs if any fuel oil is burned at the facility during the year. The emission calculations are also based at an ambient temperature of 59°F.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

for the Department's review an engineering report regarding the collection and the analysis of the data gathered from the monitor. In addition, this report shall include a conclusion regarding the lowest NO_x emission rate that can be consistently achieved with a reasonable operating margin, taking into account long-term performance expectations and assuming good operating and maintenance practices. The report shall also include results of the testing requirements of 40 CFR 60, Appendix F's quality assurance procedures and the actual CEMS data for the period of the study in an acceptable format.

5. The Department will make a determination as to whether to seek to revise the permitted NO_x emission limitation and will base it on the engineering data report submitted by the permittee. If the data demonstrate that a NO_x emission rate of less than 15 ppmvd at 15 percent O₂ is consistently achievable, the NO_x emission limit may be adjusted accordingly, but not lower than 9 ppmvd at 15 percent O₂.

6. Excess emissions from a turbine resulting from start up, shutdown, malfunction, fuel switch or load change shall be reported in accordance with 40 CFR 60.334(c) and accepted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24-hour period unless specifically authorized by the Department for a longer duration. The permittee shall provide a general description of the procedures to be followed during periods of start up, shutdown, malfunction, fuel switch or load change to ensure that the best operational practices to minimize emissions will be adhered to and the duration of any excess emissions will be minimized. The description should be submitted to the Department along with the initial compliance test data. The description may be updated as needed by submitting such update to the Department within thirty (30) days of implementation.

7. Excess emissions from fuel switching shall not exceed 15 minutes.

8. Excess emissions due to fuel bound nitrogen levels above 0.015 percent are allowed pursuant to Condition B.1 foot note (e) of the emission limitation table.

C. Performance Testing

1. Initial (I) compliance tests shall be performed on each CT using both fuels. Testing of emissions shall be conducted at

Best Available Copy

DEPARTMENT OF
ENVIRONMENTAL PROTECTION

MAY 15 1998

SITING COORDINATION

SEMINOLE ELECTRIC COOPERATIVE, INC.

1998 TEN YEAR SITE PLAN

APRIL 1998

Schedule 9
Status Report and Specifications of Proposed Generating Facilities

- (1) Plant Name & Unit Number: Hardee Power Station Unit 3
- (2) Capacity
a. Summer: 451 MW
b. Winter: 527 MW
- (3) Technology Type: Advanced Combined Cycle
- (4) Anticipated Construction Timing
a. Field construction start-date: Jan. 2000
b. Commercial in-service date: Jan. 2002
- (5) Fuel
a. Primary fuel: Natural Gas
b. Alternate fuel: Distillate Oil
- (6) Air Pollution Control Strategy: Dry Low NOx Combustors, Natural Gas, Low Sulfur #2 Oil
- (7) Cooling Method: Cooling Reservoir
- (8) Total Site Area: 1,280 Acres
- (9) Construction Status: N/A
- (10) Certification Status: Certification received 08/15/1995
- (11) Status With Federal Agencies
EPA: Approval received 9/11/1995
RUS: Record of Decision received 9/14/1995
- (12) Projected Unit Performance Data
Planned Outage Factor (POF): 5.75%
Forced Outage Factor (FOF): 6.50%
Equivalent Availability Factor (EAF): 87.75%
Resulting Capacity Factor (%): 31% - 54%
Average Net Operating Heat Rate (ANOHR): 7,430
- (13) Projected Unit Financial Data
Book Life (Years): 30
Total Installed Cost (In-Service Year \$/kW): 723.71
Direct Construction Cost (\$/kW): 518.81
AFUDC Amount (\$/kW): 74.43
Escalation (\$/kW): 57.43
Fixed O&M (\$/kW-Yr): 13.20
Variable O&M (\$/MWH): 1.23
K Factor: N/A



40 CFR Ch. I (7-1-97 Edition)

ification may demonstrate to the Federal Land Manager that the emissions from such source or modification would have no adverse impact on the air quality related values of any such lands (including visibility), notwithstanding that the change in air quality resulting from emissions from such source or modification would cause or contribute to concentrations which would exceed the maximum allowable increases for a Class I area. If the Federal land manager concurs with such demonstration and he so certifies, the State may authorize the Administrator: *Provided*, That the applicable requirements of this section are otherwise met, to issue the permit with such emission limitations as may be necessary to assure that emissions of sulfur dioxide, particulate matter, and nitrogen oxides would not exceed the following maximum allowable increases over minor source baseline concentration for such pollutants:

Pollutant	Maximum allowable increase (micrograms per cubic meter)
Particulate matter:	
PM-10, annual arithmetic mean	17
PM-10, 24-hr maximum	30
Sulfur dioxide:	
Annual arithmetic mean	20
24-hr maximum	91
3-hr maximum	325
Nitrogen dioxide:	
Annual arithmetic mean	25

(6) *Sulfur dioxide variance by Governor with Federal Land Manager's concurrence.* The owner or operator of a proposed source or modification which cannot be approved under paragraph (q)(4) of this section may demonstrate to the Governor that the source cannot be constructed by reason of any maximum allowable increase for sulfur dioxide for a period of twenty-four hours or less applicable to any Class I area and, in the case of Federal mandatory Class I areas, that a variance under this clause would not adversely affect the air quality related values of the area (including visibility). The Governor, after consideration of the Federal Land Manager's recommendation (if any) and subject to his concurrence, may, after notice and public hearing, grant a variance from such maximum

Best Available Copy

Environmental Protection Agency

allowable increase. If such variance is granted, the Administrator shall issue a permit to such source or modification pursuant to the requirements of paragraph (q)(7) of this section: *Provided*, That the applicable requirements of this section are otherwise met.

(7) *Variance by the Governor with the President's concurrence.* In any case where the Governor recommends a variance in which the Federal Land Manager does not concur, the recommendations of the Governor and the Federal Land Manager shall be transmitted to the President. The President may approve the Governor's recommendation if he finds that the variance is in the national interest. If the variance is approved, the Administrator shall issue a permit pursuant to the requirements of paragraph (q)(7) of this section: *Provided*, That the applicable requirements of this section are otherwise met.

(8) *Emission limitations for Presidential or gubernatorial variance.* In the case of a permit issued pursuant to paragraph (q) (5) or (6) of this section the source or modification shall comply with such emission limitations as may be necessary to assure that emissions of sulfur dioxide from the source or modification would not (during any day on which the otherwise applicable maximum allowable increases are exceeded) cause or contribute to concentrations which would exceed the following maximum allowable increases over the baseline concentration and to assure that such emissions would not cause or contribute to concentrations which exceed the otherwise applicable maximum allowable increases for periods of exposure of 24 hours or less for more than 18 days, not necessarily consecutive, during any annual period:

MAXIMUM ALLOWABLE INCREASE
(Micrograms per cubic meter)

Period of exposure	Terrain areas	
	Low	High
24-hr maximum	36	62
3-hr maximum	130	221

(q) *Public participation.* The Administrator shall follow the applicable procedures of 40 CFR part 124 in processing applications under this section. The

→ On point and applicable for delegated programs.

§52.21

Administrator shall follow the procedures at 40 CFR 52.21(r) as in effect on June 19, 1979, to the extent that the procedures of 40 CFR part 124 do not apply.

(r) Source obligation. (1) Any owner or operator who constructs or operates a source or modification not in accordance with the application submitted pursuant to this section or with the terms of any approval to construct, or any owner or operator of a source or modification subject to this section who commences construction after the effective date of these regulations without applying for and receiving approval hereunder, shall be subject to appropriate enforcement action.

(2) Approval to construct shall become invalid if construction is not commenced within 18 months after receipt of such approval, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. The Administrator may extend the 18-month period upon a satisfactory showing that an extension is justified. This provision does not apply to the time period between construction of the approved phases of a phased construction project; each phase must commence construction within 18 months of the projected and approved commencement date.

(3) Approval to construct shall not relieve any owner or operator of the responsibility to comply fully with applicable provisions of the State implementation plan and any other requirements under local, State, or Federal law.

(4) At such time that a particular source or modification becomes a major stationary source or major modification solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements or paragraphs (j) through (s) of this section shall apply to the source or modification as though construction had not yet commenced on the source or modification.

Best Available Copy

Related but not precisely
applicable

Environmental Protection Agency

§52.21

40 CFR Ch. I (7-1-97 Edition)

52.21 as in effect on June 19, 1978, if the owner or operator of the source or modification submits an application for a permit under this section on or before June 8, 1981, and the Administrator subsequently determines that the application as submitted before that date was complete with respect to the requirements of this section other than those in paragraphs (m)(1) (i) through (iv) of this section, and with respect to the requirements for such analyses at 40 CFR 52.21(m)(2) as in effect on June 19, 1978. Instead, the latter requirements shall apply to any such source or modification.

(ii) The requirements for air quality monitoring in paragraphs (m)(1) (i) through (iv) of this section shall not apply to a particular source or modification that was not subject to 40 CFR 52.21 as in effect on June 19, 1978, if the owner or operator of the source or modification submits an application for a permit under this section on or before June 8, 1981, and the Administrator subsequently determines that the application as submitted before that date was complete, except with respect to the requirements in paragraphs (m)(1) (i) through (iv).

(1)(i) At the discretion of the Administrator, the requirements for air quality monitoring of PM₁₀ in paragraphs (m)(1) (i) through (iv) of this section may not apply to a particular source or modification when the owner or operator of the source or modification submits an application for a permit under this section on or before June 1, 1988 and the Administrator subsequently determines that the application as submitted before that date was complete, except with respect to the requirements for monitoring particulate matter in paragraphs (m)(1) (i) through (iv).

(ii) The requirements for air quality monitoring of PM₁₀ in paragraphs (m)(1), (ii) and (iv) and (m)(3) of this section shall apply to a particular source or modification if the owner or operator of the source or modification submits an application for a permit under this section after June 1, 1988 and no later than December 1, 1988. The data shall have been gathered over at least the period from February 1, 1988 to the date the application becomes otherwise complete in accordance with

the provisions set forth under paragraph (m)(1)(viii) of this section, except that if the Administrator determines that a complete and adequate analysis can be accomplished with monitoring data over a shorter period (not to be less than 4 months), the data that paragraph (m)(1)(iii) requires shall have been gathered over a shorter period.

(12) The requirements of paragraph (k)(2) of this section shall not apply to a stationary source or modification with respect to any maximum allowable increase for nitrogen oxides if the owner or operator of the source or modification submitted an application for a permit under this section before the provisions embodying the maximum allowable increase took effect as part of the applicable implementation plan and the Administrator subsequently determined that the application as submitted before that date was complete.

(13) The requirements in paragraph (k)(2) of this section shall not apply to a stationary source or modification with respect to any maximum allowable increase for PM-10 if (i) the owner or operator of the source or modification submitted an application for a permit under this section before the provisions embodying the maximum allowable increases for PM-10 took effect in an implementation plan to which this section applies, and (ii) the Administrator subsequently determined that the application as submitted before that date was otherwise complete. Instead, the requirements in paragraph (k)(2) shall apply with respect to the maximum allowable increases for TSP as in effect on the date the application was submitted.

~~(14) Control technology review.~~ (1) A major stationary source or major modification shall meet each applicable emissions limitation under the State Implementation Plan and each applicable emissions standard and standard of performance under 40 CFR parts 60 and 61.

(2) A new major stationary source shall apply best available control technology for each pollutant subject to regulation under the Act that it would have the potential to emit in significant amounts.

(3) A major modification shall apply best available control technology for each pollutant subject to regulation under the Act for which it would result in a significant net emissions increase at the source. This requirement applies to each proposed emissions unit at which a net emissions increase in the pollutant would occur as a result of a physical change or change in the method of operation in the unit.

(4) For phased construction projects, the determination of best available control technology shall be reviewed and modified as appropriate at the latest reasonable time which occurs no later than 18 months prior to commencement of construction of each independent phase of the project. At such time, the owner or operator of the applicable stationary source may be required to demonstrate the adequacy of any previous determination of best available control technology for the source.

~~(k) Source impact analysis.~~ The owner or operator of the proposed source or modification shall demonstrate that allowable emission increases from the proposed source or modification, in conjunction with all other applicable emissions increases or reductions (including secondary emissions), would not cause or contribute to air pollution in violation of:

(1) Any national ambient air quality standard in any air quality control region; or

(2) Any applicable maximum allowable increase over the baseline concentration in any area.

(1) *Air quality models.* (i) All estimates of ambient concentrations required under this paragraph shall be based on applicable air quality models, data bases, and other requirements specified in appendix W of part 51 of this chapter (Guideline on Air Quality Models).

(2) Where an air quality model specified in appendix W of part 51 of this chapter (Guideline on Air Quality Models) is inappropriate, the model may be modified or another model substituted. Such a modification or substitution of a model may be made on a case-by-case basis or, where appropriate, on a generic basis for a specific state program. Written approval of the Administrator must be obtained for any modification

RECEIVED

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEC 22 1999

BUREAU OF AIR REGULATION

In Re: Seminole Electric Cooperative)
Hardee Power Station Unit 3)
(Payne Creek Generating Station))
Modification of Conditions)
of Certification)
Hardee County, Florida)
_____)

DEP File No. PA89-25SA-A
OGC Case No. 99-0354

**FINAL ORDER MODIFYING
CONDITIONS OF CERTIFICATION**

On August 15, 1995, the Governor and Cabinet, sitting as the Siting Board, issued a final order approving certification for the Hardee Power Station Unit 3. That certification order approved the construction and operation of a 440 megawatt (MW), natural gas-fired, combined cycle power plant and associated facilities located in Hardee County, Florida.

On February 12, 1999, Seminole Electric Cooperative, Inc. (SECI) filed a request to amend their application to reflect purchase of combustion turbines and associated heat recovery steam generators that are 48 megawatts larger than the 440 MW originally proposed, which also increases the site's ultimate megawatt size to 928 MW. SECI also requested that the conditions be modified to allow conformance of the conditions with the proposed amendment to the PSD permit for the facility (PSD-FL-214A), that conditions pertaining to certain deadlines for post certification submittals and reporting be revised to reflect a later start of construction, and that the plant be renamed the Payne Creek Generating Station.

Copies of SECI's proposed modifications were made available for public review on February 12, 1999. On May 20, 1999, all parties to the original proceeding were sent a Notice of Receipt of Proposed Modification of Power Plant Certification. Also on May 20, 1999, a public

notice of the proposed PSD amendment was published. On September 3, 1999, a Notice of Intent to Issue a Proposed Modification of Power Plant Certification was published in the Florida Administrative Weekly. On September 10, 1999, all parties to the original proceeding were furnished copies of the notice of intent to modify and a copy of this proposed order. The notice specified that parties to the original certification hearing have 45 days from the issuance of the notice by mail to such party's last address of record to object to the requested modification. Any other person whose interests would be substantially affected has 30 days from the date of publication of the public notice to object in writing. No written objections to the proposed modifications have been received by the Department. Accordingly, in the absence of any timely objection,

IT IS ORDERED:

The proposed changes to the Seminole Electric Cooperative's Payne Creek Generating Station as described in its February 12, 1999, request for modification are APPROVED. Pursuant to Section 403.516(1)(b), F.S., the conditions of certification for the Payne Creek Generating Station are **MODIFIED** as follows, including replacement of the name "Hardee Power Station Unit 3" with the term "Payne Creek Generating Station":

I.A.1. "Application" shall mean the Site Certification Application for the ~~Hardee Power Station Unit 3~~ Payne Creek Generating Station (PCGS), as supplemented.

2. - 6. No change.

7. ~~"GFWFC" shall mean the Florida Game and Freshwater Fish Commission.~~

"FWCC" shall mean the Florida Fish and Wildlife Conservation Commission.

8. No change.

9. ~~"HPS"~~ ~~"PCGS"~~ shall mean the ~~Hardee Power Station Site~~ Payne Creek Generating Station site within which the project will be located. ~~HPS is also the site of~~ Also located contiguous to the site are existing generating units operated by Hardee Power Partners Limited.

10. - 12. No change.

13. "Project" shall mean the ~~Hardee Power Station Unit 3~~ Payne Creek Generating Station and all associated facilities, including: The power plant and related facilities; the cooling reservoir and related facilities.

14. - 18. No change.

B. Identification of Permittee Responsible for Compliance

These conditions are intended to apply to Seminole Electric Cooperative Incorporated (SECI) as the owner and operator of ~~Hardee Power Station Unit 3~~ Payne Creek Generating Station. However, these conditions do not relieve SECI of obligations imposed by Conditions of Certification for certification PA 89-25 unless these conditions are specific to Phase 3 (Payne Creek Generating Station) construction and operation.

C. Applicable Rules

The construction and operation of the ~~Hardee Unit 3~~ Payne Creek Generating Station shall be in accordance with all applicable provisions of at least the following regulations of the Department: Chapters 62-3, 62-4, 62-6, 62-12, 62-21, 62-22, 62-25, 62-210 through 62-297, 62-302, 62-650, and 62-660, Florida Administrative Code (F.A.C.) or their successors as they are renumbered.

II. AIR

The construction and operation of the project shall be in accordance with all applicable provisions of Chapters 62-210 through 62-297 and 62-4, Florida Administrative Code (F.A.C.), and 40 CFR 60, Subpart GG, Appendix A, Appendix B, and Appendix F-(1994 version). The following emission limitations and conditions reflect the BACT determinations for the ~~300~~ 315 megawatts (nominal) (MW; two ~~150~~ 157.5 MW combined

cycle combustion turbines) of generating capacity. Each combustion turbine (CT) will be connected to a heat recovery steam generator (HRSG), which will recover the waste heat to produce steam for utilization in a single 140 173 MW (net) steam generator. There is no fuel firing in the associated HRSG. The facility will have a total nominal generating capacity of 440 488 MW (~~net~~) (nominal). In addition to the foregoing, the project shall comply with the following conditions of certification as indicated.

A. General Requirements

1. Pursuant to Rule 62-212.200(56), F.A.C., Potential to Emit (PTE), the maximum heat input to each ~~combustion turbine~~ Westinghouse 501F (D) CT, or equivalent, at an ambient temperature of 32°F, shall neither exceed ~~1,862~~ 1,962 MMBtu/hr while firing natural gas nor ~~1,965~~ 1,888 MMBtu/hr while firing fuel oil.
2. - 5. No change.

B. Emission Limits

1. Pursuant to Rule 62-212.410, F.A.C., BACT, the maximum allowable emission limitations from two CTs, when firing natural gas or No. 2 fuel oil, shall not exceed the following:

MAXIMUM ALLOWABLE EMISSION LIMITATIONS					
POLLUTANT	FUEL	CONCENTRATION	lbs/hr ^a	TPY ^b	TPY(TOTAL) ^c
NO _x	Gas	15 <u>9</u> ppmvd ^d	106 <u>68</u>	931 <u>596</u>	1212 <u>906</u>
	Oil	42 ppmvd ^e	336	504	
CO	Gas	20 ppmvd	71	622	618
	Oil	25 ppmvd	91	136	
PM/PM ₁₀	Gas		7	65	147
	Oil		67	100	
SO ₂	Gas		5	47	182
	Oil		101	152	
VOC	Gas	5 ppmvd	10	88	99

	Oil	10 ppmvd	21	31	
Sulfuric Acid Mist	Gas		1	6	39
	Oil		22	34	
Beryllium	Oil		0.0049	0.007	0.007
Arsenic	Oil		0.0097	0.014	0.014
Visible Emissions	Gas		-----		
	Oil		≤ 10 percent opacity		
			≤ 10 percent opacity		

(a)-(c) No change.

(d) The natural gas NO_x allowable emission limitation of ~~15~~ 9 ppmvd is corrected to 15 percent O₂. An interim limit of 12 ppmvd (91 lb/hr/ct, 797 TPY) corrected to 15 percent O₂ shall be allowed for a period of one year from the startup date. Compliance shall be determined through the initial and annual compliance tests.

(e) No change.

2. No change.

3. The permittee will install a dry low-NO_x (DLN) combustor and a Selective Catalytic Reduction (SCR) system ~~or an equivalent system~~ on each CT. Ammonia slip from the SCR system shall not exceed 10 ppm. The permittee shall make every practicable effort to achieve the lowest possible NO_x emission rate, but must not exceed ~~15~~ 12 ppmvd at 15 percent O₂ per CT on a continuous basis when firing natural gas during the first year of operation. The final limit for NO_x one year after startup will be 9 ppmvd at 15% O₂.

4. ~~After the initial compliance tests on the CTs, the permittee shall operate a certified continuous emissions monitor for NO_x emissions and collect 12 months of monitoring data. The monitor will, at a minimum, meet the requirements of 40 CFR 60, Appendix F's quality assurance procedures. Within 18 months after the initial compliance test, the permittee shall prepare and submit for the Department's review an engineering report regarding the collection and the analysis of the data gathered from the monitor. In addition, this report shall include a conclusion regarding the lowest NO_x emission rate that can be consistently achieved with a reasonable operating margin, taking into account long-term performance expectations and assuming good operating and maintenance practices. The report shall also include results of the testing requirements of 40 CFR 60, Appendix F or 40 CFR 75 quality assurance procedures and the actual CEMS data for the period of the study in~~

~~an acceptable format. Excess emissions from a turbine resulting from startup, shutdown, malfunction, fuel switch or load change shall be reported in accordance with 40 CFR 60.334(c) and accepted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24-hour period unless specifically authorized by the Department for a longer duration. The permittee shall provide a general description of the procedures to be followed during periods of startup, shutdown, malfunction, fuel switch or load change to ensure that the best operational practices to minimize emissions will be adhered to and the duration of excess emissions will be minimized. The description should be submitted to the Department along with the initial compliance test data. The description may be updated as needed by submitting such update to the Department within thirty (30) days of implementation.~~

5. ~~The Department will make a determination as to whether to seek to revise the permitted NO_x emission limitation and will base it on the engineering data report submitted by the permittee. If the data demonstrate that a NO_x emission rate of less than 15 ppmvd at 15 percent O₂ is consistently achievable, the NO_x emission limit may be adjusted accordingly, but not lower than 9 ppmvd at 15 percent O₂. Excess emissions from fuel switching shall not exceed 15 minutes.~~

6. ~~Excess emissions from a turbine resulting from startup, shutdown, malfunction, fuel switch or load change shall be reported in accordance with 40 CFR 60.334(c) and accepted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24-hour period unless specifically authorized by the Department for a longer duration. The permittee shall provide a general description of the procedures to be followed during periods of startup, shutdown, malfunction, fuel switch or load change to ensure that best operational practices to minimize emissions will be adhered to and the duration of excess emissions will be minimized. The description should be submitted to the Department along with the initial compliance test data. The description may be updated as needed by submitting such update to the Department within thirty (30) days of implementation. Excess emissions due to fuel bound nitrogen levels above 0.015 percent are allowed pursuant to Condition II.B.1. foot note (e) of the emissions limitation table.~~

- C. Performance Testing - No change.
- D. Monitoring Requirements - No change.
- E. Notification, Reporting and Record Keeping

1. No change.
 2. a. - d. No change.
 - e. 40 CFR 60.7(a)(6) - By postmarking or delivering notification of the anticipated date for conducting the ~~capacity~~opacity observations no less than 30 days prior to such date.
 - f. - k. No change.
 3. The following information shall be submitted to the Department's Bureau of Air Regulation within 90 days after the permittee has made the selection of the following:
 - a. Description of the final selection of the turbines, SCR and CO oxidation catalyst control systems ~~for installation at the facility~~. The descriptions shall include the specific make and model numbers and any changes in the proposed method of operation, fuels, emissions or equipment.
 - b. No change.
 4. The following protocols shall be submitted to the Department's Southwest District office for approval:
 - a. - b. No change.
 - c. Heat Input Curves - Within 120 days after final selection, but 180 days prior to initial startup of the turbine, manufacturer's curves or equations of heat input and NOx emission rate (lbs/hr) corrections to other temperatures shall be provided to the Department. ~~Subject to the approval by the Department for technical validity while applying sound engineering principles, the manufacturer's curves shall be used to establish the heat input rates over a range of temperatures for the purposes of compliance determination.~~
 - d. Subject to the approval by the Department for technical validity while applying sound engineering principles, the manufacturer's curves shall be used to establish the heat input rates over a range of temperatures for the purposes of compliance determination.
- F. Modifications - No change.

G. No. 2 Fuel Oil Storage Tank - No change.

H. Additional General Conditions

1. Pursuant to Rule 62-4.090, F.A.C., the permittee, for good cause, may request that the PSD Permit PSD-FL-214A be extended. Such request shall be submitted to the Department's Bureau of Air Regulation prior to 60 days before expiration of the permit.

2. The permittee must also submit an application for an operation permit for a major source of air pollution pursuant to Chapter 62-213, F.A.C.

3. Approval to construct under the provisions of permit PSD-FL-214A shall become invalid if construction is not commenced by June 2000, if construction is discontinued for a period of 18 months or more, or if construction is not completed by March 4, 2002. The Department may extend the 18-month period upon a satisfactory showing that an extension is justified. [40 CFR 52.21(r)(2)].

III. SURFACE WATER DISCHARGES

A. Plant Effluents and Receiving Body of Water

For discharges made from ~~Hardee Unit-3~~ the Payne Creek Generating Station, the following conditions shall apply:

1. - 3. No change.

4. Chemical Wastes from ~~Hardee Unit-3~~ the Payne Creek Generating Station - All discharges of low volume wastes (demineralizer regeneration, floor drainage, labs drains, and similar wastes) shall be treated in an adequately sized and constructed treatment facility prior to discharge into the cooling reservoir.

5. - 15. No change.

B. No change.

IV. GROUNDWATER

A. No change.

B. Water Well Construction

Prior to the construction, modification, or abandonment of a production well for ~~Unit-3~~ the PCGS, SECI must notify the SWFWMD pursuant to Chapter 40D-3, Florida Administrative Code. Construction, modification, or abandonment of a production well will require modification of the ~~Unit-3~~ PCGS consumptive use conditions when such construction, modification or abandonment is other than that specified and described on ~~Unit-3~~ PCGS consumptive use information as addressed in the application. The construction, modification, or abandonment of a monitor well specified in Condition IV.I. will require the prior approval of the Department.

C. No change.

D. Maximum Annual Withdrawals

The combined use of groundwater for all power generating facilities at the HPS PCGS site from the wellfield shall not exceed 3.8 million gallons per day (mgd) annual average daily and 8.64 mgd peak month daily.

The use of the Floridan aquifer potable water for control of fugitive dust emissions is prohibited when alternatives are available, such as treated discharges, shallow aquifer wells, or stormwater. The use of Floridan aquifer potable water for the sole purpose of waste stream dilution is prohibited.

E. No change.

F. Emergency Shortages

Nothing in this certification is to be construed to limit the authority of the SWFWMD to declare a water shortage and issue orders pursuant to Section 373.175, Florida Statutes, or to formulate a plan for implementation during periods of water shortage, pursuant to Section 373.246, Florida Statutes. In the event of a water shortage, as declared by the District Governing Board, ~~Unit-3~~ Payne Creek Generating Station shall adhere to reductions in water withdrawals as specified by the SWFWMD.

In the event SWFWMD declares that a water shortage exists pursuant to Chapter 40D-21, F.A.C., SWFWMD may alter, modify, or declare inactive all or parts of this certification as necessary to address the water shortage, after notice and a reasonable opportunity for compliance.

G. - H. No change.

I. Ground Water Monitoring Requirements

1. - 2. No change.

3. The Ground Water Monitoring System for ~~Hardee Unit 3~~ Payne Creek Generating Station shall consist of 4 monitoring wells and shall be tentatively located as listed below. All wells are to be clearly labeled and easily visible at all times.

(No change to chart.)

4. - 10. No change.

11. Ground water sampling shall be reported on the Monitoring Report Forms (~~DER Form 17-1:216(2)~~) (DEP Form 62-522.900(2)). In order to facilitate entry of this data into the State computer system, these forms or an exact replica must be used and must not be altered as to content. The original copies should be retained so that the necessary information is available to properly complete future reports. The report forms received from the laboratory must be submitted along with the ~~DER~~DEP Parameter Monitoring Report Forms described above.

12. - 16. No change.

J. Zone of Discharge

The ~~HPS-PCGS~~ shall meet the groundwater criteria of Chapter 62-520, F.A.C. at the boundary of a zone of discharge extending 100 feet from the outside toe of the cooling reservoir. A ground water monitoring program as described in Condition IV.I. shall be implemented to verify compliance with these requirements.

K. - L. No change.

M. Conservation

1. - 2. No change.

3. By ~~January 1, 2002~~ June 1, 2004, SECI shall submit for approval by the Permitting Department Director, Resource Regulation, a water conservation plan for the purposes of documenting the current groundwater use for ~~Hardee Unit 3's~~ the Payne Creek Generating Station's water use operations, and the existing and proposed water conservation programs which are, or will be implemented to conserve groundwater at the plant. The plan shall address the following:

a. - b. No change.

4. No change.

N. - P. No change.

Q. Alternative Source Investigation

SECI shall continue to investigate the feasibility of using reclaimed water as a water source and submit an updated report describing the feasibility to the Permits Data Section of the District by ~~January 1, 2002~~ June 1, 2004. The report shall contain an analysis of reclaimed water sources for the area, including the relative location of these sources to SECI's property, the quantity of reclaimed water available, the projected date(s) of availability, costs associated with obtaining the reclaimed water, and an implementation schedule for reuse, if feasible. Infeasibility shall be supported with a detailed explanation.

If the use of reclaimed water as a water source is determined to be feasible by SECI and the District, SECI shall submit an implementation plan to the Permits Data Section for review and approval, within 30 days after the feasibility report is approved in writing by the Permitting Department Director, Resource Regulation. The District will require the implementation of the approved plan within a period of time agreed upon by the District and SECI. A modification of the water use quantities authorized in the certification may be required based upon the implementation plan.

V. WETLANDS - No change.

VI. INDUSTRIAL WASTE

A. Standard Criteria - No change.

B. Construction

1. No change.

2. Upon completion of construction of the ~~Hardee Unit Number 3~~ Payne Creek Generating Station Project, SECI shall submit to the Department's Southwest District Office a completed "Certificate of Completion of Construction" form signed and sealed by the Professional Engineer of record.

3. - 5. No change.

VII. DOMESTIC WASTE

A. No change.

B. In order to obtain approval to construct a domestic wastewater treatment plant and reuse/disposal system, excluding the cooling pond, the following forms, reports, plans and data as applicable, appropriately signed and sealed by an engineer registered in the State of Florida, must be submitted to the Department at least one hundred twenty (120) days prior to proposed date for commencement of construction to demonstrate the consistency of that system with these conditions. ~~(All forms cited are titled "DER" Forms under Title "17", Florida Administrative Code, now "DEP" and Title "62" respectively):~~

1. No change.

2. ~~DER Form 17-604.900(1),~~ DEP Form 62-604.300(7)(a), Application to Construct a Domestic Wastewater Collection System, with documentation;

3. ~~DER Form 17-600.910(1),~~ DEP Forms 62-620.910(1) and (2), Application to Construct a Domestic Wastewater Facility, with documentation;

4. ~~DER Form 17-610.910(1),~~ DEP Forms 62-620.910(1) and (2), Application to Construct a Reuse/Land Application System; with documentation;

5. ~~DER Form 17-640.900(1),~~ DEP Form 62-640.210(2)(a), Agricultural Use Plan, with documentation;

6. No change.

C. - H. No change.

I. Upon completion of construction of the wastewater collection system, SECI shall submit two (2) copies of the Domestic Wastewater Collection/Transmission Systems Certificate of Completion of Construction [~~DER Form 17-604.900(2)~~][DEP Form 62-604.300(7)(b)], and a copy of the record drawings for the system, signed and sealed by a registered engineer, to the DEP Southwest District office. Upon completion of construction and prior to placing the treatment plant or effluent reuse/disposal system into operation for any purpose other than testing for leaks and equipment operation, SECI shall submit a Notification That a Domestic Wastewater Facility Will Be Placed Into Operation [~~DER Form 17-600.910(3)~~] and a Completion of Construction Notification for a Reuse/land Application System [~~DER form 17-610.910(6)~~]DEP Form 62-620.910(12)], signed and sealed by a Registered Engineer, to the DEP Southwest District office.

J. - R. No change.

- S. Any condition at this facility that causes a violation of these Conditions shall be reported to the Department within twenty-four (24) hours of occurrence by calling the Domestic Wastewater Section, Water Facilities, FDEP Southwest District at (813) 744-6100. After normal business hours, any condition that poses a serious health threat shall immediately be reported by calling ~~(904) 488-1320~~ (850) 488-1320.

VIII. - X. - No change.

XI. SOLID WASTE STORAGE AND DISPOSAL

A. No change.

B. Disposal

Solid waste produced by the operation of ~~Unit 3~~ the Payne Creek Generating Station shall be removed from site and disposed of in a permitted disposal facility.

XII. - XVI. No change.

XVII. CHANGE IN DISCHARGE

All discharges or emissions authorized herein to ~~Unit 3~~ the PCGS shall be consistent with the terms and conditions of this certification. The discharge of any regulated pollutant not identified in the application or any regulated discharge more frequent than, or at a level in excess of, that authorized herein shall constitute a violation of this certification. Any anticipated facility expansions, production increases, or process modification which will result in new, different or increased discharges or expansion in steam generating capacity will require a submission of a request for modification of certification or a new or supplemental application to the Siting Coordination Office pursuant to Chapter 403, F.S.

XVIII. NONCOMPLIANCE NOTIFICATION

If, for any reason, SECI does not comply with or will be unable to comply with any limitation specified in this certification, SECI shall notify the ~~Deputy Assistant Secretary~~ Director of DEP's Southwest District office by telephone as soon as possible but not later than the first DEP working day after SECI becomes aware of said noncompliance, and shall confirm the reported situation in writing within seventy-two (72) hours supplying the following information:

A. - B. No change.

XIX. - XX. No change.

XXI. RIGHT OF ENTRY

SECI shall allow DEP and other authorized representatives, upon the presentation of credentials:

A. To enter upon the ~~Unit 3~~ PCGS premises where an effluent source is located or, during business hours, in which records are required to be kept under the terms and conditions of this permit;

B. - E. No change.

F. Moreover, SECI shall allow authorized representatives of DEP and other appropriate agencies, acting within the scope of their jurisdiction and authority, upon the presentation of credentials:

1. To enter upon the project site or mitigation area, or during business hours to enter the ~~Unit 3~~ Payne Creek Generating Station premises in which records are required to be kept under the terms and conditions of this certification; and

2. No change.

XXII. - XXXII. No change.

XXXIII. DISPUTE RESOLUTION

If a situation arises in which mutual agreement cannot be reached between SCI and an agency exercising its regulatory jurisdiction, then the matter shall be immediately referred to the Division of Administrative Hearings (DOAH) for disposition in accordance with the provisions of Chapter 120, Florida Statutes. A hearing under Section 120.57, Florida Statutes, shall be held as soon as possible after its referral to DOAH.

Petitions for dispute resolution shall be disposed of in the same manner as an application, but with time periods established by the ~~Hearing Officer~~ Administrative Law Judge commensurate with the significance of the dispute.

XXXIV. POST-CERTIFICATION SUBMITTAL - No change.

XXXV. TRANSPORTATION

Monitoring of the intersection of State Road 37/County Road 630 is to commence at such time as the total number of construction employees reaches 344 persons or June 1, 1997 2000, whichever occurs first. Monitoring on an annual basis shall continue to February 1998 2001, or until the number of employees is again below 344, whichever occurs last. Should the monitoring identify needed improvements to maintain an acceptable level of service, SECI shall be responsible for the proportion of the improvements which can be attributed to the impact of the Hardee Unit-3 Payne Creek Generating Station facility (Section 9J-5.0055, F.A.C.).

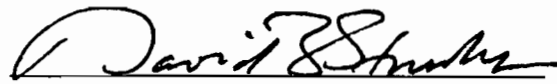
XXXVI. EMERGENCY RESPONSE - No change.

Any party to this Notice has the right to seek judicial review of the Order pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department of Environmental Protection, Office of General Counsel, Mail Station 35, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000 and by filing a copy of the Notice of Appeal, accompanied by the applicable filing fee, with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date that this Final Order is filed with the Department of Environmental Protection.

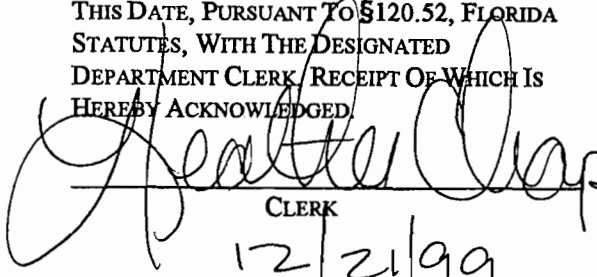
DONE AND ENTERED this 20 day of December, 1999, in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

FILING AND ACKNOWLEDGMENT: FILED ON
THIS DATE, PURSUANT TO §120.52, FLORIDA
STATUTES, WITH THE DESIGNATED
DEPARTMENT CLERK, RECEIPT OF WHICH IS
HEREBY ACKNOWLEDGED.


DAVID B. STRUHS
SECRETARY

Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000
Telephone: (850) 488-1554


CLERK

12/21/99
DATE

CERTIFICATE OF SERVICE

I CERTIFY that a true and correct copy of the Final Order Modifying Conditions of

Certification was mailed to:

Andrew Grayson
Assistant General Counsel
Department of Community Affairs
2555 Shumard Oak Boulevard
Tallahassee, Florida 32399-2100

Robert V. Elias, Esquire
Division of Legal Services
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Sheauching Yu, Assistant General Counsel
Department of Transportation
Haydon Burns Bldg, MS 58
605 Suwannee Street
Tallahassee, Florida 32399-0450

Edward Helvenston
Assistant General Counsel
Southwest Florida Water Management District
2379 Broad Street
Brooksville, Florida 34609-6899

Gary Alan Vorbeck
Hardee County Attorney
Vorbeck & Vorbeck, P.A.
207 East Magnolia Street
Arcadia, Florida 33821

Mark Carpanini, Esq.
Office of the County Attorney
Polk County
Post Office Box 9005
Bartow, Florida 33831-9005

James V. Antista, General Counsel
Fish and Wildlife Conservation Commission
Bryant Building
620 South Meridian Street
Tallahassee, Florida 32399-1600

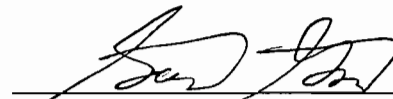
Lawrence N. Curtin, Esq.
Holland & Knight
Post Office Drawer 810
Tallahassee, Florida 32303-0810

Mr. Brian Sodt
Central Florida Regional Planning Council
555 East Church Street
Bartow, Florida 33930

Douglas S. Roberts, Esq.
Hopping Green Sams & Smith, P.A.
Post Office Box 6526
Tallahassee, Florida 32314

on this 21st day of December 1999.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION



SCOTT A. GOORLAND
Assistant General Counsel
Florida Bar No. 0066834

Douglas Building, MS 35
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000
Telephone: (850) 488-9314

5yed

**BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

In Re: Seminole Electric Cooperative)
Hardee Power Station Unit 3)
Modification of Conditions)
of Certification, PA89-25SA-A)
Hardee County, Florida)
_____)

OGC Case No. 99-0354

RECEIVED

SEP 16 1999

BUREAU OF AIR REGULATION

**NOTICE OF INTENT TO ISSUE PROPOSED
MODIFICATION OF POWER PLANT CERTIFICATION**

The Florida Department of Environmental Protection (Department) hereby provides notice of an intent to modify Power Plant Certification Conditions issued pursuant to the Florida Electrical Power Plant Siting Act, § 403.501, *et seq.*, Florida Statutes. A Proposed Final Order has been prepared in accordance with Rule 62-17.211(4) concerning the above referenced project. A copy of the proposed Final Order Modifying Conditions of Certification is attached.

The Department has reviewed the requested modification of conditions of certification to reflect the purchase of combustion turbines and associated heat recovery steam generators that are 48 megawatts (MW) larger than the 440 MW originally proposed, which also increases the site's ultimate megawatt size to 928 MW. It was also requested that the conditions be modified to allow conformance of the conditions with the proposed amendment to the PSD permit for the facility (PSD-FL-214A), that conditions pertaining to certain deadlines for post certification submittals and reporting be revised to reflect a later start of construction, and that the plant be renamed the Payne Creek Generating Station.

POINT OF ENTRY

Pursuant to § 403.516, F.S., and Rule 62-17.211(5), F.A.C., all parties to the certification proceeding have 45 days from the issuance of this notice by mail to such party's last address of record in which to object to the requested modification. Failure of any of the parties to file a response will constitute a waiver of objection to the requested modification.

Any person who is not already a party to the certification proceeding and whose substantial interest is affected by the requested modification has 30 days from the date of publication of the public notice to object in writing. The written objection must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, MS 35, Tallahassee, Florida 32399-3000.

If no objections are received, then a Final Order approving the modification shall be issued by the Department. If objections are raised and agreement cannot be subsequently reached, then pursuant to § 403.516(1)(c), F.S., the applicant may file a petition for modification seeking approval for those portions of the request for modification to which written objections were timely filed.

Mediation is not available in this proceeding.

CERTIFICATE OF SERVICE

I CERTIFY that a true and correct copy of the foregoing Intent to Issue Proposed

Modification of Power Plant Certification was mailed to:

Andrew Grayson
Assistant General Counsel
Department of Community Affairs
2555 Shumard Oak Boulevard
Tallahassee, Florida 32399-2100

Robert V. Elias, Esquire
Division of Legal Services
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Sheauching Yu, Assistant General Counsel
Department of Transportation
Haydon Burns Bldg., MS 58
605 Suwannee Street
Tallahassee, Florida 32399-0450

Gary Alan Vorbeck
Hardee County Attorney
Vorbeck & Vorbeck, P.A.
207 East Magnolia Street
Arcadia, Florida 33821

Mark Carpanini, Esq.
Office of the County Attorney
Polk County
Post Office Box 9005
Bartow, Florida 33831-9005

James V. Antista, General Counsel
Fish and Wildlife Conservation Commission
Bryant Building
620 South Meridian Street
Tallahassee, Florida 32399-1600

Richard Tschantz
Assistant General Counsel
Southwest Florida Water Management District
2379 Broad Street
Brooksville, Florida 34609-6899

Lawrence N. Curtin, Esq.
Holland & Knight
Post Office Drawer 810
Tallahassee, Florida 32303-0810

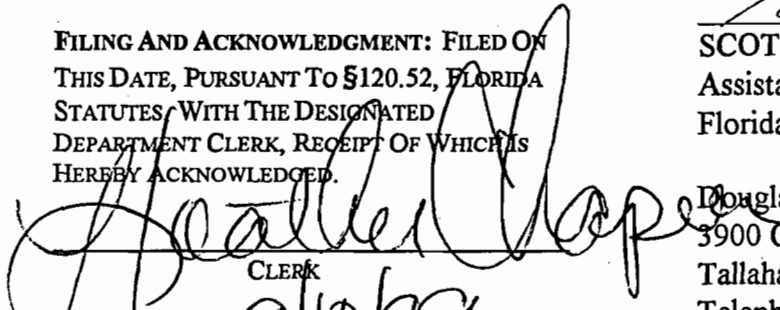
Mr. Brian Sadt
Central Florida Regional Planning Council
555 East Church Street
Bartow, Florida 33930

Douglas S. Roberts, Esq.
Hopping Green Sams & Smith, P.A.
Post Office Box 6526
Tallahassee, Florida 32314

on this 10th day of September 1999.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

FILING AND ACKNOWLEDGMENT: FILED ON
THIS DATE, PURSUANT TO §120.52, FLORIDA
STATUTES, WITH THE DESIGNATED
DEPARTMENT CLERK, RECEIPT OF WHICH IS
HEREBY ACKNOWLEDGED.


CLERK
9/10/99
DATE


SCOTT A. GOORLAND
Assistant General Counsel
Florida Bar No. 0066834

Douglas Building, MS 35
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000
Telephone: (850) 488-9314

**BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

In Re: Seminole Electric Cooperative)
 Hardee Power Station Unit 3)
 (Payne Creek Generating Station))
 Modification of Conditions)
 of Certification)
 Hardee County, Florida)
_____)

DEP File No. PA89-25SA-A
OGC Case No. 99-0354

DRAFT

**FINAL ORDER MODIFYING
CONDITIONS OF CERTIFICATION**

On August 15, 1995, the Governor and Cabinet, sitting as the Siting Board, issued a final order approving certification for the Hardee Power Station Unit 3. That certification order approved the construction and operation of a 440 megawatt (MW), natural gas-fired, combined cycle power plant and associated facilities located in Hardee County, Florida.

On February 12, 1999, Seminole Electric Cooperative, Inc. (SECI) filed a request to amend their application to reflect purchase of combustion turbines and associated heat recovery steam generators that are 48 megawatts larger than the 440 MW originally proposed, which also increases the site's ultimate megawatt size to 928 MW. SECI also requested that the conditions be modified to allow conformance of the conditions with the proposed amendment to the PSD permit for the facility (PSD-FL-214A), that conditions pertaining to certain deadlines for post certification submittals and reporting be revised to reflect a later start of construction, and that the plant be renamed the Payne Creek Generating Station.

Copies of SECI's proposed modifications were made available for public review on February 12, 1999. On May 20, 1999, all parties to the original proceeding were sent a Notice of Receipt of Proposed Modification of Power Plant Certification. On September 3, 1999, a Notice

of Intent to Issue a Proposed Modification of Power Plant Certification was published in the Florida Administrative Weekly. On September 10, 1999, all parties to the original proceeding were furnished copies of the notice of intent to modify and a copy of this proposed order. The notice specified that parties to the original certification hearing have 45 days from the issuance of the notice by mail to such party's last address of record to object to the requested modification. Any other person whose interests would be substantially affected has 30 days from the date of publication of the public notice to object in writing. No written objection to the proposed modifications has been received by the Department. A public notice of the proposed PSD amendment was published on May 20, 1999. Accordingly, in the absence of any timely objection,

IT IS ORDERED:

DRAFT

The proposed changes to the Seminole Electric Cooperative's Payne Creek Generating Station as described in its February 12, 1999, request for modification are APPROVED. Pursuant to Section 403.516(1)(b), F.S., the conditions of certification for the Payne Creek Generating Station are MODIFIED as follows, including replacement of Hardee Power Station Unit 3 with the term Payne Creek Generating Station:

I.A.1. "Application" shall mean the Site Certification Application for the ~~Hardee Power Station Unit 3~~ Payne Creek Generating Station (PCGS), as supplemented.

2. - 6. No change.

~~7. "GFWFC" shall mean the Florida Game and Freshwater Fish Commission.~~

"FWCC" shall mean the Florida Fish and Wildlife Conservation Commission.

8. No change.

9. ~~"HPS"~~ "PCGS" shall mean the ~~Hardee Power Station Site~~ Payne Creek Generating Station site within which the project will be located. ~~HPS is also the site of~~ Also located contiguous to the site are existing generating units operated by Hardee Power Partners Limited.

10. - 12. No change.

13. "Project" shall mean the ~~Hardee Power Station Unit 3~~ Payne Creek Generating Station and all associated facilities, including: The power plant and related facilities; the cooling reservoir and related facilities.

14. - 18. No change.

B. Identification of Permittee Responsible for Compliance

These conditions are intended to apply to Seminole Electric Cooperative Incorporated (SECI) as the owner and operator of ~~Hardee Power Station Unit 3~~ Payne Creek Generating Station. However, these conditions do not relieve SECI of obligations imposed by Conditions of Certification for certification PA 89-25 unless these conditions are specific to Phase 3 (Payne Creek Generating Station) construction and operation.

C. Applicable Rules

The construction and operation of the ~~Hardee Unit 3~~ Payne Creek Generating Station shall be in accordance with all applicable provisions of at least the following regulations of the Department: Chapters 62-3, 62-4, 62-6, 62-12, 62-21, 62-22, 62-25, 62-210 through 62-297, 62-302, 62-650, and 62-660, Florida Administrative Code (F.A.C.) or their successors as they are renumbered.

II. AIR

The construction and operation of the project shall be in accordance with all applicable provisions of Chapters 62-210 through 62-297 and 62-4, Florida Administrative Code (F.A.C.), and 40 CFR 60, Subpart GG, Appendix A, Appendix B, and Appendix F (1994 version). The following emission limitations and conditions reflect the BACT determinations for the ~~300~~ 315 megawatts (nominal) (MW; two ~~150~~ 157.5 MW combined

cycle combustion turbines) of generating capacity. Each combustion turbine (CT) will be connected to a heat recovery steam generator (HRSG), which will recover the waste heat to produce steam for utilization in a single 440 173 MW (net) steam generator. There is no fuel firing in the associated HRSG. The facility will have a total nominal generating capacity of 440 488 MW (~~net~~) (nominal). In addition to the foregoing, the project shall comply with the following conditions of certification as indicated.

A. General Requirements

1. Pursuant to Rule 62-212.200(56), F.A.C., Potential to Emit (PTE), the maximum heat input to each combustion turbine Westinghouse 501F (D) CT, or equivalent, at an ambient temperature of 32°F, shall neither exceed ~~1,862~~ 1,962 MMBtu/hr while firing natural gas nor ~~1,965~~ 1,888 MMBtu/hr while firing fuel oil.

2. - 5. No change.

DRAFT

B. Emission Limits

1. Pursuant to Rule 62-212.410, F.A.C., BACT, the maximum allowable emission limitations from two CTs, when firing natural gas or No. 2 fuel oil, shall not exceed the following:

MAXIMUM ALLOWABLE EMISSION LIMITATIONS					
POLLUTANT	FUEL	CONCENTRATION	lbs/hr ^a	TPY ^b	TPY(TOTAL) ^c
NOx	Gas	15 <u>9</u> ppmvd ^d	106 <u>68</u>	931 <u>596</u>	1212 <u>906</u>
	Oil	42 ppmvd ^c	336	504	
CO	Gas	20 ppmvd	71	622	618
	Oil	25 ppmvd	91	136	
PM/PM ₁₀	Gas		7	65	147
	Oil		67	100	
SO ₂	Gas		5	47	182
	Oil		101	152	
VOC	Gas	5 ppmvd	10	88	99

	Oil	10 ppmvd	21	31	
Sulfuric Acid Mist	Gas		1	6	39
	Oil		22	34	
Beryllium	Oil		0.0049	0.007	0.007
Arsenic	Oil		0.0097	0.014	0.014
Visible Emissions	Gas		-----		
	Oil		≤ 10 percent opacity		
			≤ 10 percent opacity		

(a)-(c) No change.

- (d) The natural gas NOx allowable emission limitation of ~~15~~ 9 ppmvd is corrected to 15 percent O₂. An interim limit of 12 ppmvd (91 lb/hr/ct, 797 TPY) corrected to 15 percent O₂ shall be allowed for a period of one year from the startup date. Compliance shall be determined through the initial and annual compliance tests.

(e) No change.

DRAFT

2. No change.

3. The permittee will install a dry low-NOx (DLN) combustor and a Selective Catalytic Reduction (SCR) system or an equivalent system on each CT. Ammonia slip from the SCR system shall not exceed 10 ppm. The permittee shall make every practicable effort to achieve the lowest possible NOx emission rate, but must not exceed ~~15~~ 12 ppmvd at 15 percent O₂ per CT on a continuous basis when firing natural gas during the first year of operation. The final limit for NOx one year after startup will be 9 ppmvd at 15% O₂.

4. ~~After the initial compliance tests on the CTs, the permittee shall operate a certified continuous emissions monitor for NOx emissions and collect 12 months of monitoring data. The monitor will, at a minimum, meet the requirements of 40 CFR 60, Appendix F's quality assurance procedures. Within 18 months after the initial compliance test, the permittee shall prepare and submit for the Department's review an engineering report regarding the collection and the analysis of the data gathered from the monitor. In addition, this report shall include a conclusion regarding the lowest NOx emission rate that can be consistently achieved with a reasonable operating margin, taking into account long term performance expectations and assuming good operating and maintenance practices. The report shall also include results of the testing requirements of 40 CFR 60, Appendix F or 40 CFR 75 quality assurance procedures and the actual CEMS data for the period of the study in~~

~~an acceptable format.~~ Excess emissions from a turbine resulting from startup, shutdown, malfunction, fuel switch or load change shall be reported in accordance with 40 CFR 60.334(c) and accepted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24-hour period unless specifically authorized by the Department for a longer duration. The permittee shall provide a general description of the procedures to be followed during periods of startup, shutdown, malfunction, fuel switch or load change to ensure that the best operational practices to minimize emissions will be adhered to and the duration of excess emissions will be minimized. The description should be submitted to the Department along with the initial compliance test data. The description may be updated as needed by submitting such update to the Department within thirty (30) days of implementation.

5. ~~The Department will make a determination as to whether to seek to revise the permitted NO_x emission limitation and will base it on the engineering data report submitted by the permittee. If the data demonstrate that a NO_x emission rate of less than 15 ppmvd at 15 percent O₂ is consistently achievable, the NO_x emission limit may be adjusted accordingly, but not lower than 9 ppmvd at 15 percent O₂.~~ Excess emissions from fuel switching shall not exceed 15 minutes.
6. ~~Excess emissions from a turbine resulting from startup, shutdown, malfunction, fuel switch or load change shall be reported in accordance with 40 CFR 60.334(c) and accepted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24-hour period unless specifically authorized by the Department for a longer duration. The permittee shall provide a general description of the procedures to be followed during periods of startup, shutdown, malfunction, fuel switch or load change to ensure that best operational practices to minimize emissions will be adhered to and the duration of excess emissions will be minimized. The description should be submitted to the Department along with the initial compliance test data. The description may be updated as needed by submitting such update to the Department within thirty (30) days of implementation.~~ Excess emissions due to fuel bound nitrogen levels above 0.015 percent are allowed pursuant to Condition II.B.1. foot note (e) of the emissions limitation table.

- C. Performance Testing - No change.
- D. Monitoring Requirements - No change.
- E. Notification, Reporting and Record Keeping

DRAFT

1. No change.

2. a. - d. No change.

e. 40 CFR 60.7(a)(6) - By postmarking or delivering notification of the anticipated date for conducting the ~~capacity~~ opacity observations no less than 30 days prior to such date.

f. - k. No change.

3. The following information shall be submitted to the Department's Bureau of Air Regulation within 90 days after the permittee has made the selection of the following:

a. Description of the final selection of the turbines, SCR and CO oxidation catalyst control systems for installation at the facility. The descriptions shall include the specific make and model numbers and any changes in the proposed method of operation, fuels, emissions or equipment.

b. No change.

DRAFT

4. The following protocols shall be submitted to the Department's Southwest District office for approval:

a. - b. No change.

c. Heat Input Curves - Within 120 days after final selection, but 180 days prior to initial startup of the turbine, manufacturer's curves or equations of heat input and NOx emission rate (lbs/hr) corrections to other temperatures shall be provided to the Department. ~~Subject to the approval by the Department for technical validity while applying sound engineering principles, the manufacturer's curves shall be used to establish the heat input rates over a range of temperatures for the purposes of compliance determination.~~

d. Subject to the approval by the Department for technical validity while applying sound engineering principles, the manufacturer's curves shall be used to establish the heat input rates over a range of temperatures for the purposes of compliance determination.

F. Modifications - No change.

G. No. 2 Fuel Oil Storage Tank - No change.

H. Additional General Conditions

1. Pursuant to Rule 62-4.090, F.A.C., the permittee, for good cause, may request that the PSD Permit PSD-FL-214A be extended. Such request shall be submitted to the Department's Bureau of Air Regulation prior to 60 days before expiration of the permit.

2. The permittee must also submit an application for an operation permit for a major source of air pollution pursuant to Chapter 62-213, F.A.C.

3. Approval to construct under the provisions of permit PSD-FL-214A shall become invalid if construction is not commenced by June 2000, if construction is discontinued for a period of 18 months or more, or if construction is not completed by March 4, 2002. The Department may extend the 18-month period upon a satisfactory showing that an extension is justified. [40 CFR 52.21(r)(2)].

III. SURFACE WATER DISCHARGES

DRAFT

A. Plant Effluents and Receiving Body of Water

For discharges made from ~~Hardee Unit 3~~ the Payne Creek Generating Station, the following conditions shall apply:

1. - 3. No change.

4. Chemical Wastes from ~~Hardee Unit 3~~ the Payne Creek Generating Station - All discharges of low volume wastes (demineralizer regeneration, floor drainage, labs drains, and similar wastes) shall be treated in an adequately sized and constructed treatment facility prior to discharge into the cooling reservoir.

5. - 15. No change.

B. No change.

IV. GROUNDWATER

A. No change.

B. Water Well Construction

Prior to the construction, modification, or abandonment of a production well for ~~Unit 3~~ the PCGS, SECI must notify the SWFWMD pursuant to Chapter 40D-3, Florida Administrative Code. Construction, modification, or abandonment of a production well will require modification of the ~~Unit 3~~ PCGS consumptive use conditions when such construction, modification or abandonment is other than that specified and described on ~~Unit 3~~ PCGS consumptive use information as addressed in the application. The construction, modification, or abandonment of a monitor well specified in Condition IV.I. will require the prior approval of the Department.

C. No change.

D. Maximum Annual Withdrawals

The combined use of groundwater for all power generating facilities at the ~~HPS~~ PCGS site from the wellfield shall not exceed 3.8 million gallons per day (mgd) annual average daily and 8.64 mgd peak month daily.

The use of the Floridan aquifer potable water for control of fugitive dust emissions is prohibited when alternatives are available, such as treated discharges, shallow aquifer wells, or stormwater. The use of Floridan aquifer potable water for the sole purpose of waste stream dilution is prohibited.

E. No change.

DRAFT

F. Emergency Shortages

Nothing in this certification is to be construed to limit the authority of the SWFWMD to declare a water shortage and issue orders pursuant to Section 373.175, Florida Statutes, or to formulate a plan for implementation during periods of water shortage, pursuant to Section 373.246, Florida Statutes. In the event of a water shortage, as declared by the District Governing Board, ~~Unit 3~~ Payne Creek Generating Station shall adhere to reductions in water withdrawals as specified by the SWFWMD.

In the event SWFWMD declares that a water shortage exists pursuant to Chapter 40D-21, F.A.C., SWFWMD may alter, modify, or declare inactive all or parts of this certification as necessary to address the water shortage, after notice and a reasonable opportunity for compliance.

G. - H. No change.

I. Ground Water Monitoring Requirements

1. - 2. No change.

3. The Ground Water Monitoring System for ~~Hardee Unit 3~~ Payne Creek Generating Station shall consist of 4 monitoring wells and shall be tentatively located as listed below. All wells are to be clearly labeled and easily visible at all times.

(No change to chart.)

4. - 10. No change.

11. Ground water sampling shall be reported on the Monitoring Report Forms (~~DER Form 17-1.216(2)~~) (DEP Form 62-522.900(2)). In order to facilitate entry of this data into the State computer system, these forms or an exact replica must be used and must not be altered as to content. The original copies should be retained so that the necessary information is available to properly complete future reports. The report forms received from the laboratory must be submitted along with the ~~DER~~DEP Parameter Monitoring Report Forms described above.

12. - 16. No change.

DRAFT

J. Zone of Discharge

The HPS-PCGS shall meet the groundwater criteria of Chapter 62-520, F.A.C. at the boundary of a zone of discharge extending 100 feet from the outside toe of the cooling reservoir. A ground water monitoring program as described in Condition IV.I. shall be implemented to verify compliance with these requirements.

K. - L. No change.

M. Conservation

1. - 2. No change.

3. By ~~January 1, 2002~~ June 1, 2004, SECI shall submit for approval by the Permitting Department Director, Resource Regulation, a water conservation plan for the purposes of documenting the current groundwater use for ~~Hardee Unit 3's~~ the Payne Creek Generating Station's water use operations, and the existing and proposed water conservation programs which are, or will be implemented to conserve groundwater at the plant. The plan shall address the following:

a. - b. No change.

4. No change.

N. - P. No change.

DRAFT

Q. Alternative Source Investigation

SECI shall continue to investigate the feasibility of using reclaimed water as a water source and submit an updated report describing the feasibility to the Permits Data Section of the District by ~~January 1, 2002~~ June 1, 2004. The report shall contain an analysis of reclaimed water sources for the area, including the relative location of these sources to SECI's property, the quantity of reclaimed water available, the projected date(s) of availability, costs associated with obtaining the reclaimed water, and an implementation schedule for reuse, if feasible. Infeasibility shall be supported with a detailed explanation.

If the use of reclaimed water as a water source is determined to be feasible by SECI and the District, SECI shall submit an implementation plan to the Permits Data Section for review and approval, within 30 days after the feasibility report is approved in writing by the Permitting Department Director, Resource Regulation. The District will require the implementation of the approved plan within a period of time agreed upon by the District and SECI. A modification of the water use quantities authorized in the certification may be required based upon the implementation plan.

V. WETLANDS - No change.

VI. INDUSTRIAL WASTE

A. Standard Criteria - No change.

B. Construction

1. No change.

2. Upon completion of construction of the ~~Hardee Unit Number 3~~ Payne Creek Generating Station Project, SECI shall submit to the Department's Southwest District Office a completed "Certificate of Completion of Construction" form signed and sealed by the Professional Engineer of record.

3. - 5. No change.

VII. DOMESTIC WASTE

A. No change.

B. In order to obtain approval to construct a domestic wastewater treatment plant and reuse/disposal system, excluding the cooling pond, the following forms, reports, plans and data as applicable, appropriately signed and sealed by an engineer registered in the State of Florida, must be submitted to the Department at least one hundred twenty (120) days prior to proposed date for commencement of construction to demonstrate the consistency of that system with these conditions. ~~(All forms cited are titled "DER" Forms under Title "17", Florida Administrative Code, now "DEP" and Title "62" respectively):~~

1. No change.

2. ~~DER Form 17-604.900(1),~~ DEP Form 62-604.300(7)(a), Application to Construct a Domestic Wastewater Collection System, with documentation;

3. ~~DER Form 17-600.910(1),~~ DEP Forms 62-620.910(1) and (2), Application to Construct a Domestic Wastewater Facility, with documentation;

4. ~~DER Form 17-610.910(1),~~ DEP Forms 62-620.910(1) and (2), Application to Construct a Reuse/Land Application System; with documentation;

5. ~~DER Form 17-640.900(1),~~ DEP Form 62-640.210(2)(a), Agricultural Use Plan, with documentation;

DRAFT

6. No change.

C. - H. No change.

I. Upon completion of construction of the wastewater collection system, SECI shall submit two (2) copies of the Domestic Wastewater Collection/Transmission Systems Certificate of Completion of Construction [~~DER Form 17-604.900(2)~~][DEP Form 62-604.300(7)(b)], and a copy of the record drawings for the system, signed and sealed by a registered engineer, to the DEP Southwest District office. Upon completion of construction and prior to placing the treatment plant or effluent reuse/disposal system into operation for any purpose other than testing for leaks and equipment operation, SECI shall submit a Notification That a Domestic Wastewater Facility Will Be Placed Into Operation [~~DER Form 17-600.910(3)~~] and a Completion of Construction Notification for a Reuse/Land Application System [~~DER form 17-610.910(6)~~]DEP Form 62-620.910(12)], signed and sealed by a Registered Engineer, to the DEP Southwest District office.

J. - R. No change.

S. Any condition at this facility that causes a violation of these Conditions shall be reported to the Department within twenty-four (24) hours of occurrence by calling the Domestic Wastewater Section, Water Facilities, FDEP Southwest District at (813) 744-6100. After normal business hours, any condition that poses a serious health threat shall immediately be reported by calling ~~(904) 488-1320~~ (850) 488-1320.

VIII. - X. - No change.

XI. SOLID WASTE STORAGE AND DISPOSAL

A. No change.

B. Disposal

DRAFT

Solid waste produced by the operation of ~~Unit 3~~ the Payne Creek Generating Station shall be removed from site and disposed of in a permitted disposal facility.

XII. - XVI. No change.

XVII. CHANGE IN DISCHARGE

All discharges or emissions authorized herein to ~~Unit 3~~ the PCGS shall be consistent with the terms and conditions of this certification. The discharge of any regulated pollutant not identified in the application or any regulated discharge more frequent than, or at a level in excess of, that authorized herein shall constitute a violation of this certification. Any anticipated facility expansions, production increases, or process modification which will result in new, different or increased discharges or expansion in steam generating capacity will require a submission of a request for modification of certification or a new or supplemental application to the Siting Coordination Office pursuant to Chapter 403, F.S.

XVIII. NONCOMPLIANCE NOTIFICATION

If, for any reason, SECI does not comply with or will be unable to comply with any limitation specified in this certification, SECI shall notify the ~~Deputy Assistant Secretary~~ Director of DEP's Southwest District office by telephone as soon as possible but not later than the first DEP working day after SECI becomes aware of said noncompliance, and shall confirm the reported situation in writing within seventy-two (72) hours supplying the following information:

A. - B. No change.

XIX. - XX. No change.

XXI. RIGHT OF ENTRY

SECI shall allow DEP and other authorized representatives, upon the presentation of credentials:

A. To enter upon the ~~Unit 3~~ PCGS premises where an effluent source is located or, during business hours, in which records are required to be kept under the terms and conditions of this permit;

B. - E. No change.

DRAFT

F. Moreover, SECI shall allow authorized representatives of DEP and other appropriate agencies, acting within the scope of their jurisdiction and authority, upon the presentation of credentials:

1. To enter upon the project site or mitigation area, or during business hours to enter the ~~Unit 3~~ Payne Creek Generating Station premises in which records are required to be kept under the terms and conditions of this certification; and

2. No change.

XXII. - XXXII. No change.

XXXIII. DISPUTE RESOLUTION

If a situation arises in which mutual agreement cannot be reached between SCI and an agency exercising its regulatory jurisdiction, then the matter shall be immediately referred to the Division of Administrative Hearings (DOAH) for disposition in accordance with the provisions of Chapter 120, Florida Statutes. A hearing under Section 120.57, Florida Statutes, shall be held as soon as possible after its referral to DOAH.

Petitions for dispute resolution shall be disposed of in the same manner as an application, but with time periods established by the ~~Hearing Officer~~ Administrative Law Judge commensurate with the significance of the dispute.

XXXIV. POST-CERTIFICATION SUBMITTAL - No change.

XXXV. TRANSPORTATION

Monitoring of the intersection of State Road 37/County Road 630 is to commence at such time as the total number of construction employees reaches 344 persons or June 1, 1997 2000, whichever occurs first. Monitoring on an annual basis shall continue to February 1998 2001, or until the number of employees is again below 344, whichever occurs last. Should the monitoring identify needed improvements to maintain an acceptable level of service, SECI shall be responsible for the proportion of the improvements which can be attributed to the impact of the Hardee-Unit-3-Payne Creek Generating Station facility (Section 9J-5.0055, F.A.C.).

XXXVI. EMERGENCY RESPONSE - No change.

Any party to this Notice has the right to seek judicial review of the Order Pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department of Environmental Protection, Office of General Counsel, Mail Station 35, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000 and by filing a copy of the Notice of Appeal, accompanied by the applicable filing fee, with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date that this Final Order is filed with the Department of Environmental Protection.

DONE AND ENTERED this _____ day of _____, 1999, in Tallahassee, Florida.

**STATE OF FLORIDA, DEPARTMENT
OF ENVIRONMENTAL PROTECTION**

DRAFT

DAVID B. STRUHS
SECRETARY
3900 Commonwealth Boulevard
Tallahassee, FL 32399-3000
Telephone: (850) 488-1554

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF FINAL PERMIT MODIFICATION

In the Matter of an
Application for Permit Modification

Mr. Michael P. Opalinski
Seminole Electric Cooperative Incorporated
Post Office Box 272000
Tampa, Florida 33688-2000

Permit: PSD-FL-214A / PA-89-25SA

Enclosed is the FINAL Permit Modification which reflects the use of SCR and oxidation catalyst control systems at the Payne Creek generating Station in Hardee County. This permit is issued pursuant to Chapter 403, Florida Statutes and 62-4 through 297, F.A.C and 40 CFR 52.21 - Prevention of Significant Deterioration(PSD).

Any party to this order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, F.S., by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Legal Office; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 (thirty) days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.


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

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF FINAL PERMIT (including the FINAL permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 7-23-99 to the person(s) listed:

Mr. Michael P. Opalinski, SECI *
Mr. Gregg Worley, EPA
Mr. John Bunyak, NPS
Mr. Bill Thomas, DEP SWD
Mr. Hamilton S. Oven, DEP PPS

Clerk Stamp

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


(Clerk) 7-23-99
(Date)

FINAL DETERMINATION

Seminole Electric Cooperative, Incorporated (SECI) Hardee Power Station Unit 3 (Payne Creek Generating Station) Permit No. PSD-FL-214A / PA-89-25SA

An Intent to Issue a PSD Permit Modification for SECI, Hardee Power Station Unit 3 (Payne Creek Generating Station), located near Bowling Green, Hardee County, Florida, was distributed on May 6, 1999. The Public Notice of Intent to Issue PSD Permit Modification was published in the Herald-Advocate on May 20, 1999. Copies of the draft permit modification were available for public inspection at the Department offices in Tampa and Tallahassee.

The National Park Service, the U.S. Environmental Protection Agency or the public submitted no comments. Several editorial comments on the proposed permit modification were submitted by the applicant in response to the public notice. The Department will make changes based on those comments. Additionally, the applicant wanted to change the expiration date of the permit to March 4, 2002.

A summary of the comments received and the Department's responses to those comments are provided in the following paragraphs:

Comment 1: SECI submitted a comment requesting that the word "revised" be inserted before permit in Specific Condition H.3. The change will give SECI 18 months period from the issuance of the revised permit for the initiation of BACT on the units on which construction has not commenced.

Response: The Department will incorporate the source obligation conditions from 40 CFR 52.21 (r)(2). SECI has agreed that construction (delayed since 1995) will commence by June 2000. Specific Condition H.3 will be replaced by the following:

Approval to construct shall become invalid if construction is not commenced by June, 2000, if construction is discontinued for a period of 18 months or more, or if construction is not completed by March 4, 2002. The Department may extend the 18-month period upon a satisfactory showing that an extension is justified. [40 CFR 52.21(r)(2)].

Comment 2: SECI submitted comments on May 26 and June 4, 1999, requesting extension of the expiration date of the permit to March 4, 2002. During 1995, SECI received a proposal from Florida Power Corporation to supply SECI with approximately 450 MW of firm capacity for three years and 150 MW of system intermediate capacity for the period of 1999 through 2013. Through subsequent negotiations, SECI found that this arrangement would result in significant savings to its Member Systems when compared to this project, and thus decided to delay the project.

Response: The Department will set June 2000 as the date by which construction must commence, and March 4, 2002, as the "reasonable time" by which construction must be completed. The extension moots the conditions related to installation by November 1, 2000 of DLN burners capable of achieving 9-12 ppm. SECI may install either DLN or SCR systems to meet a NO_x limit of 9 ppmvd @ 15% O₂.

The final action of the Department is to issue the permit with the changes noted above.

Is your RETURN 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):

- 1. ☐ Addressee's Address
- 2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Mr. Michael Opalinski
Seminole Electric Coop
P O Box 272000
Tampa, FL

33688-2000

4a. Article Number

2 333 618 114

4b. Service Type

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

7. Date of Delivery

7-27-99

5. Received By: (Print Name)

William RSHY

6. Signature: (Addressee or Agent)

X William RSHY

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

PS Form 3811, December 1994

102595-98-B-0229

Domestic Return Receipt

Thank you for using Return Receipt Service.

2 333 618 114

US Postal Service

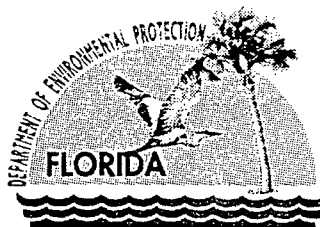
Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent To	
Michael Opalinski	
Street & Number	
Seminole Electric	
Post Office, State, & ZIP Code	
Tampa 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	
PSO-FI-214A 7-23-99	
PA 89-255A	

PS Form 3800, April 1995



Jeb Bush
Governor

Department of Environmental Protection

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

David B. Struhs
Secretary

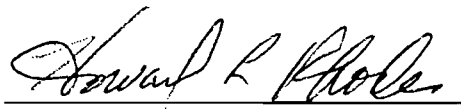
PERMITTEE:
Seminole Electric Cooperative
Incorporated
P.O. Box 272000
Tampa, FL 33688-2000

Permit Number: PSD-FL-214A/PA-89-25SA
Issued: 9/28/95 **Revised:** 7/21/99
County: Polk & Hardee
Latitude/Longitude: 27°38'30"N
81°57'45"W
Project: 488 MW Combined Cycle
Power Plant

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-212 and 62-4. 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 specifically described as follows:

For a 488 MW (nominal) combined cycle power plant consisting of two 157.5 MW (nominal) combustion turbines (CTs), two heat recovery steam generators (HRSGs), a 173 MW (nominal) steam turbine generator and a 4.4 million gallon fuel oil storage tank. The maximum heat input at 32°F is 1962 MMBtu/hr/CT (natural gas) and 1888 MMBtu/hr/CT (oil). The plant will be located at the Polk and Hardee County site near Bowling Green, Florida which is also the site of a 295 MW power plant which is operated by Hardee Power Partners Limited (HPPL). The combustion turbines are to be Westinghouse Model 501F (D) or equivalent and equipped with dry low NO_x combustors and a Selective Catalytic Reduction (SCR) system for natural gas firing and wet injection for fuel oil firing. The CT will be fired with natural gas and No. 2 low sulfur fuel oil with a sulfur content limit not to exceed 0.05 percent, by weight, as a back-up only. Each CT will also be equipped with a carbon monoxide oxidation catalyst control system.

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.


Howard L. Rhodes, Director
Division of Air Resources
Management

PERMITTEE:
Seminole Electric Cooperative Inc.

Permit Number: PSD-FL-214A
(PA-89-25SA)

Attachments are listed below:

1. Seminole Electric Cooperative Incorporated's (SECI) application received May 9, 1994.
2. Department's letters dated June 27, September 21, and November 16, 1994.
3. SECI's letters dated August 26, October 6, and November 23, 1994.
4. SECI's letter dated February 9, 1995.
5. SECI's letters dated December 1 and December 21, 1998; January 29 and February 11, 1999.

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, F.S. 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), F.S., 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 acknowledgment 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 F.S. and Department rules, unless specifically authorized by an order from the Department.
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

PERMITTEE:
Seminole Electric Cooperative Inc.

Permit Number: PSD-FL-214A
(PA-89-25SA)

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 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 F.S. or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, F.S. 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 F.S. after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by F.S. or Department rules.

11. This permit is transferable only upon Department approval in accordance with Rules 62-4.120 and 62-730.300, 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.

PERMITTEE:
Seminole Electric Cooperative Inc.

Permit Number: PSD-FL-214A
(PA-89-25SA)

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 (NSPS)

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.

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.

16. Circumvention. No person shall circumvent any air pollution control device, or allow the emission of air pollutants without the applicable air pollution control device operating properly pursuant to Rule 62-210.650 F.A.C.

SPECIFIC CONDITIONS:

The construction and operation of the project shall be in accordance with all applicable provisions of Chapters 62-210 through 62-297 and 62-4, Florida Administrative Code (F.A.C.), and 40 CFR 60, Subpart GG, Appendix A, Appendix B, and Appendix F (1994 version). The following emission limitations and conditions reflect the BACT determinations for the 315 megawatts (nominal) (MW; two 157.5 MW (nominal) combined cycle combustion turbines) of generating

PERMITTEE:
Seminole Electric Cooperative Inc.

Permit Number: PSD-FL-214A
(PA-89-25SA)

capacity. Each combustion turbine (CT) will be connected to a heat recovery steam generator (HRSG), which will recover the waste heat to produce steam for utilization in a single 173 MW (nominal) steam turbine. There is no fuel firing in the associated HRSG. The facility will have a total nominal generating capacity of 488 MW (nominal). In addition to the foregoing, the project shall comply with the following Specific Conditions:

A. General Requirements

1. Pursuant to Rule 62-212.200(56), F.A.C., Potential to Emit (PTE), the maximum heat input to each Westinghouse 501F (D) CT, or equivalent, at an ambient temperature of 32°F, shall neither exceed 1,962 MMBtu/hr while firing natural gas nor 1,888 MMBtu/hr while firing fuel oil.
2. Pursuant to Rule 62-212.200(56), F.A.C., PTE, the CTs may operate continuously, i.e., 8,760 hrs/year.
3. Pursuant to Rule 62-212.200(56), F.A.C., PTE, only natural gas or No. 2 fuel oil is allowed to be fired in the CTs. The maximum sulfur content limit of the No. 2 fuel oil shall not exceed 0.05 percent, by weight.
4. Pursuant to Rule 62-212.200(56), F.A.C., PTE, the maximum No. 2 fuel oil consumption allowed to be burned is 41,751,000 gallons per year, which is equivalent to 1500 hours per CT per year of operation at full load (not to exceed 3,000 hrs/yr between the two CTs). The No. 2 fuel oil is to be used as a back-up fuel only.
5. Pursuant to Rule 62-296.310(3), F.A.C., Unconfined Emissions of Particulate Matter (PM), the emissions of unconfined PM shall be minimized during the construction period by covering or watering dust generating areas.

B. Emission Limits

1. Pursuant to Rule 62-212.410, F.A.C., BACT, the maximum allowable emission limitations from two CTs, when firing natural gas or No. 2 fuel oil, shall not exceed the following:

PERMITTEE:
Seminole Electric Cooperative Inc.

Permit Number: PSD-FL-214A
(PA-89-25SA)

MAXIMUM ALLOWABLE EMISSION LIMITATIONS

<u>POLLUTANT</u>	<u>FUEL</u>	<u>CONCENTRATION</u>	<u>lbs/hr(a)</u>	<u>TPY(b)</u>	<u>TPY(TOTAL)^c</u>
NO _x	Gas	9 ppmvd(d)	68	596	906
	Oil	42 ppmvd(e)	336	504	
CO	Gas	20 ppmvd	71	622	618
	Oil	25 ppmvd	91	136	
PM/PM ₁₀	Gas		7	65	147
	Oil		67	100	
SO ₂	Gas		5	47	182
	Oil		101	152	
VOC	Gas	5 ppmvd	10	88	99
	Oil	10 ppmvd	21	31	
Sulfuric Acid Mist	Gas		1	6	39
	Oil		22	34	
Beryllium	Oil		0.0049	0.007	0.007
Arsenic	Oil		0.0097	0.014	0.014
Visible Emissions	Gas		≤ 10 percent opacity		
	Oil		≤ 10 percent opacity		

(a) The emission limitations in lbs/hr/CT are a 1-hour average as determined pursuant to the Performance Testing conducted pursuant to Condition C.1 below.

(b) The annual emission limitations (TPY) for natural gas are based on two CTs operating at full load for 8,760 hours per year. The annual emission limitations (TPY) for fuel oil are based on the equivalent of full-load operation for a maximum of 1500 hours per year for each of the two CTs (not to exceed 3,000 hrs/yr between the two CTs). The emission calculations are also based at a worst case ambient temperature of 32°F.

(c) Maximum allowable emissions from two CTs if any fuel oil is burned at the facility during the year. The emission calculations are also based at an ambient temperature of 59°F.

(d) The natural gas NO_x allowable emission limitation of 9 ppmvd is corrected to 15 percent O₂. An interim limit of 12 ppmvd (91 lb/hr/CT, 797 TPY) corrected to 15 percent O₂ shall be allowed for a period of one year from the startup date. Compliance shall be determined through the initial and annual compliance tests.

(e) The fuel oil NO_x allowable emission limitation of 42 ppmvd is corrected to 15 percent oxygen. Compliance shall be determined through the initial and annual compliance tests. The annual compliance test will be required if the fuel oil is fired for more than 400 hours in the preceding 12-months.

PERMITTEE:
Seminole Electric Cooperative Inc.

Permit Number: PSD-FL-214A
(PA-89-25SA)

For fuel oil firing, NO_x emissions of 42 ppmvd @ 15 percent O₂ are based on fuel bound nitrogen (FBN) content of 0.015 percent by weight or less. When FBN levels are above this percentage, the CTs may produce higher NO_x concentrations due to increased fuel NO_x formation. When FBN levels are above 0.015 percent, the operator shall employ all reasonable measures to maintain the NO_x concentrations below 42 ppmvd. However, NO_x emissions (ppmvd and lb/hr), as calculated from the formula below, shall be allowed if the permittee submits data (FBN levels from most recent fuel shipment or as fired fuel sampling and hourly averages of: fuel rate, heat rate, ambient conditions, and NO_x control system parameters) which demonstrates that emissions (hourly averages) above 42 ppmvd are due solely to FBN levels above 0.015 percent.

The emission level for NO_x is adjusted for higher fuel nitrogen contents up to a maximum of 0.030 percent by weight as follows:

FUEL BOUND NITROGEN (% by weight)	NO _x LEVELS (ppmvd @ 15% O ₂)	NO _x EMISSIONS (lb/hr/CT) ¹	NO _x EMISSIONS INCREASE (TPY) ¹
0.015 or less	42	336.2	0
0.020	44	352.1	0
0.025	46	368.2	0
0.030	48	384.2	0

1 - From 336.2 lb/hr/CT at 32⁰F basis.

For intermediate values of FBN use the formula:

$$STD = 0.0042 + F$$

where,

STD = allowable NO_x emissions (ppmvd @ 15% O₂)

F = NO_x emission allowance for fuel bound nitrogen
and

N (fuel bound nitrogen), is defined as follows:

N (% by weight)	F (NO _x % by volume)
0 < N ≤ 0.015	0
0.015 < N ≤ 0.030	0.04 (N - 0.015)
0.030 < N	0.0006

2. The following estimated CT emissions are tabulated for PSD tracking purposes only:

ESTIMATED EMISSIONS

<u>POLLUTANT</u>	<u>FUEL</u>	<u>TPY</u>
Lead	Oil(a,b)	0.16
Fluoride	Oil(a,b)	0.090
Mercury	Gas(c)	0.0003
	Oil(a,b)	0.024

PERMITTEE:
Seminole Electric Cooperative Inc.

Permit Number: PSD-FL-214A
(PA-89-25SA)

(a) The annual emission limitations (TPY) for fuel oil are based on full-load operation for a total of 3,000 hours per year between the two CTs at an ambient temperature of 59°F.

(b) The No. 2 fuel oil shall have a maximum sulfur content limit of 0.05 percent, by weight.

(c) The annual emission limitation (TPY) for natural gas is based on two CTs operating at full-load for 8,760 hours per year at an ambient temperature of 59°F.

3. The permittee will install a dry low-NO_x (DLN) combustor or an SCR system on each CT. Ammonia slip from the SCR system shall not exceed 10 ppm. The permittee shall make every practicable effort to achieve the lowest possible NO_x emission rate, but must not exceed 12 ppmvd at 15 percent O₂ per CT on a continuous basis when firing natural gas during the first year of operation. The final limit for NO_x one year after startup will be 9 ppmvd at 15% O₂.

4. Excess emissions from a turbine resulting from start up, shutdown, malfunction, fuel switch or load change shall be reported in accordance with 40 CFR 60.334(c) and accepted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24-hour period unless specifically authorized by the Department for a longer duration. The permittee shall provide a general description of the procedures to be followed during periods of start up, shutdown, malfunction, fuel switch or load change to ensure that the best operational practices to minimize emissions will be adhered to and the duration of any excess emissions will be minimized. The description should be submitted to the Department along with the initial compliance test data. The description may be updated as needed by submitting such update to the Department within thirty (30) days of implementation.

5. Excess emissions from fuel switching shall not exceed 15 minutes.

6. Excess emissions due to fuel bound nitrogen levels above 0.015 percent are allowed pursuant to Condition B.1 foot note (e) of the emission limitation table.

C. Performance Testing

1. Initial (I) compliance tests shall be performed on each CT using both fuels. Testing of emissions shall be conducted at 95-100% of the manufacturer's rated heat input based on the average ambient air temperature for the CT during the test. Annual (A) compliance tests shall be performed on the CT with the fuel(s) used for more than 400 hours in the preceding 12-month period. Tests at permit renewal shall also be performed on the non-PSD pollutants. Tests and procedures shall be in accordance with 40 CFR 60.335. Tests shall be conducted using EPA reference methods in accordance with 40 CFR 60, Appendix A, as adopted by reference in Chapter 62-297, F.A.C, and follows:

a. Reference Method 5B for PM (I, A: for oil only; assumption is that all PM is PM₁₀).

b. Reference Method 9 for VE (I, A).

PERMITTEE:
Seminole Electric Cooperative Inc.

Permit Number: PSD-FL-214A
(PA-89-25SA)

- c. Reference Method 10 for CO (I, A).
- d. Reference Method 20 for NO_x (I, A) or Method 7E if sampling downstream of the heat recovery steam generator.
- e. Reference Method 18 or 25A for VOC (I, A).
- f. Reference Method 8 for H₂SO₄ Mist (I, A).
- g. Trace elements of Beryllium (Be) and Arsenic (As) shall be tested (I, for oil only) using EMTIC Interim Test Methods. As an alternative, EPA Method 104 for Be may be used; or, Be and As may be determined from fuel analysis using either Method 7090 or 7091 and sample extraction using Method 3040, as described in the EPA solid waste regulations SW 846.
- h. ASTM D4294 (or equivalent) for sulfur content of distillate oil (I and A), which can be used for determining SO₂ emissions annually.
- i. ASTM D1072-80, D3031-81, D4084-82, or D3246-81 (or equivalent) for sulfur content of natural gas (I; and, A if deemed necessary by the Department).
- j. Other USEPA or DEP approved test methods for the permitted facilities may be used for compliance testing after departmental approval. Unless the permittee requests to modify a reference method, or to use a method for which a method was not designed, such approval shall not constitute an alternative test procedure under Section 62-297.620, F.A.C., or otherwise require modification of the permit.

2. The maximum sulfur content of the fuel oil shall not exceed 0.05 percent, by weight. Compliance shall be demonstrated in accordance with the requirements of 40 CFR 60.334(b).

3. As an alternative to Condition C.1.i above, natural gas supplier data for sulfur content may be submitted. However, the applicant is responsible for ensuring that the procedures above are used for determination of fuel sulfur content. Analysis may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency pursuant to 40 CFR 60.335(e) (1993 version). Any request for a future custom monitoring schedule shall be made in writing to the Department's Bureau of Air Regulation. Any custom schedule approved by the USEPA pursuant to 40 CFR 60.334(b) (1993 version) will be recognized as enforceable provisions of the permit.

D. Monitoring Requirements

Monitoring of operations shall be in accordance with 40 CFR 60.334. Also, and for each CT, the permittee shall install, operate, and maintain a continuous emission monitoring system (CEMS) to monitor nitrogen oxides in accordance with 40 CFR 60, Appendix F, and, if necessary, a diluent gas (CO₂ or O₂). The Federal Acid Rain Program requirements of 40 CFR 75 shall apply.

- 1. Each CEMS shall meet performance specifications of 40 CFR 60, Appendix B.

PERMITTEE:
Seminole Electric Cooperative Inc.

Permit Number: PSD-FL-214A
(PA-89-25SA)

2. CEMS data shall be recorded and reported in accordance with Rule 62-297.500, F.A.C.; 40 CFR 60; and, 40 CFR 75, if it becomes applicable. The record shall include periods of start up, shutdown, load change, fuel switch, high fuel bound nitrogen, and malfunction.

3. A malfunction means any sudden and unavoidable failure of air pollution control equipment or process equipment to operate in a normal or usual manner. Failures that are caused entirely or in part by poor maintenance, careless operation or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions.

4. The procedures under 40 CFR 60.13 shall be followed for installation, evaluation, and operation of all CEMS. In addition, 40 CFR 75 shall apply (Federal Acid Rain Program).

5. For purposes of the reports required under this permit, excess emissions, as determined pursuant to Condition B.6 herein, are defined as any calculated average emission rate which exceeds the applicable emission limitation in Condition B.1.

E. Notification, Reporting and Recordkeeping

1. To determine compliance with the natural gas and fuel oil firing heat input limitation, the permittee shall maintain daily records of natural gas and fuel oil consumption for each turbine, and provide the heating value for each fuel during the compliance test. 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.

2. The project shall comply with all the applicable requirements of Chapters 62-210 through 62-297 and 62-4, F.A.C., and 40 CFR 60, Subparts A and GG. The requirements shall include:

- a. 40 CFR 60.7(a)(1) - By postmarking or delivering notification of the start of construction no more than 30 days after such date.
- b. 40 CFR 60.7(a)(2) - By postmarking or delivering notification of the anticipated date of the initial start up of each CT not less than 30 days prior to such date.
- c. 40 CFR 60.7(a)(3) - By postmarking or delivering notification of the actual start up of each turbine within 15 days after such date.
- d. 40 CFR 60.7(a)(5) - By postmarking or delivering notification of the date for demonstrating the CEMS performance, no less than 30 days prior to such date.
- e. 40 CFR 60.7(a)(6) - By postmarking or delivering notification of the anticipated date for conducting the opacity observations no less than 30 days prior to such date.
- f. 40 CFR 60.7(b) - By initiating a recordkeeping system to record the occurrence and duration of any start up, shutdown, load change, fuel switch, high fuel bound

PERMITTEE:
Seminole Electric Cooperative Inc.

Permit Number: PSD-FL-214A
(PA-89-25SA)

nitrogen, and malfunction of a turbine, malfunction of the air pollution control equipment, and the periods when the CEMS is inoperable.

- g. 40 CFR 60.7(c) - By postmarking or delivering a quarterly excess emissions and monitoring system performance report within 30 days after the end of each calendar quarter. This report shall contain the information specified in 40 CFR 60.7(c) and (d).
- h. 40 CFR 60.8(a) - By conducting all performance tests within 60 days after achieving the maximum turbine and boiler firing rates, but not more than 180 days after the initial start up of each CT.
- i. 40 CFR 60.8(d) - By postmarking or delivering notification of the date of each performance test required by this permit at least 30 days prior to the test date; and,
- j. Rule 62-297.345 - By providing stack sampling facilities for each turbine.
- k. All notifications and reports required by this specific condition shall be submitted to the Department's Southwest District office. Performance test results shall be submitted within 45 days of completion of such test.

3. The following information shall be submitted to the Department's Bureau of Air Regulation within 90 days after the permittee has made the selection of the following:

- a. Description of the final selection of the turbines, SCR and CO oxidation catalyst control systems. The descriptions shall include the specific make and model numbers and any changes in the proposed method of operation, fuels, emissions or equipment.
- b. Description of the CEMS selected. The description shall include the type of sensors and the manufacturer and model numbers of the equipment.

4. The following protocols shall be submitted to the Department's Southwest District office for approval:

- a. CEMS Protocol - Within 120 days after selection of the CEMS, but 180 days prior to the initial startup, a CEMS protocol describing the system, its installation, operating and maintenance characteristics and requirements. The protocol shall meet the requirements of 40 CFR 60.13, Appendix B and Appendix F or 40 CFR 75, and be approved within 60 days.
- b. Performance Test Protocol - At least 90 days prior to conducting the initial performance tests required by this permit, the permittee shall submit to the Department's Southwest District office a protocol outlining the procedures to be followed, the test methods and any differences between the reference methods and the test methods proposed to be used to verify compliance with the conditions of this permit. The Department shall approve the testing protocol within 60 days provided that it meets the requirements of this permit.

PERMITTEE:
Seminole Electric Cooperative Inc.

Permit Number: PSD-FL-214A
(PA-89-25SA)

c. Heat Input Curves - Within 120 days after final selection of the turbine, but 180 days prior to initial startup of the turbine, manufacturer's curves or equations of heat input and NOx emission rate (lbs/hr) corrections to other temperatures shall be provided to the Department.

d. Subject to the approval by the Department for technical validity while applying sound engineering principles, the manufacturer's curves shall be used to establish the heat input rates over a range of temperatures for the purposes of compliance determination.

F. Modifications

The permittee shall give written notification to the Department when there is any modification to this facility pursuant to Rule 62-212.200, F.A.C., Definitions - Modifications. This notice shall be submitted sufficiently in advance of any critical date involved to allow sufficient time for review, discussion, and revision of plans, if necessary. Such notice shall include, but not be limited to, information describing the precise nature of the change; modifications to any emission control system; production capacity of the facility before and after the change; and, the anticipated completion date of the change.

G. No. 2 Fuel Oil Storage Tank

The permittee shall be in compliance with the monitoring requirements of 40 CFR 60.116b(a) and (b).

H. Additional General Conditions

1. Pursuant to Rule 62-4.090, F.A.C., the permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation prior to 60 days before the expiration of the permit.

2. An application for an operation permit pursuant to Rule 62-4.220, F.A.C., is not required if the facility is also certified under the Power Plant Siting Act, Chapter 403, Part II, F.S. That certification serves as the operation permit also. The permittee must submit an application for an operation permit for a major source of pollution pursuant to Chapter 62-213, F.A.C.

3. Approval to construct shall become invalid if construction is not commenced by June, 2000, if construction is discontinued for a period of 18 months or more, or if construction is not completed by March 4, 2002. The Department may extend the 18-month period upon a satisfactory showing that an extension is justified. [40 CFR 52.21(r)(2)].

Memorandum

Florida Department of Environmental Protection

BAR

TO: Howard L. Rhodes

THRU: Clair Fancy *CHF*
Al Linero *AL* 7/19

FROM: Syed Arif *Syed Arif*

DATE: July 13, 1999

SUBJECT: Seminole Electric Cooperative Incorporated
: PSD-FL-214A Combined Cycle Facility

Attached for your approval and signature is the final amendment for the above referenced permit. A Technical Evaluation and Preliminary Determination was issued, and the facility was required to do a public notice.

The facility was originally permitted in 1995 as a 440 MW power plant. They have not even started construction and the permit would have expired in 2000. They have decided to proceed with the project and requested an extension of their permit to March 2002. The units to be delivered will actually produce 488 MW and will be equipped with SCR systems instead of DLN. They will have oxidation catalyst for CO control.

The DLN units required by the original permit were to achieve 15 ppm. The facility has agreed to meet a revised emission limit of 9 ppmvd for NO_x. The revised permit gives allows them to operate at 12 ppm for one year, after which they must meet 9 ppm by SCR. We provided for the long-shot possibility that Westinghouse will develop a DLN combustor that will meet the same 9 ppm requirements as SCR by the same date.

We added language based on the Federal rules (applicable to PPSA projects) that will give us greater authority if they defer construction again. There were no comments from EPA or USFWS. The Site Certification contains automatic update language based on PSD and NPDES permit revisions. Therefore this permit may be issued without a concurrent Certification Modification.

I recommend your approval and signature.

RECEIVED

JUL 21 1999

**THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

BUREAU OF AIR REGULATION

In the Matter of an
Application for Permit by:

OGC CASE NO.: 99-_____

FDEP Construction Permit No.: PSD-FL-214A/
PA-89-25SA

Seminole Electric Cooperative, Inc.
Hardee Power Station Unit 3
Payne Creek Generating Station
Hardee County, Florida

WITHDRAWAL OF REQUEST FOR ENLARGEMENT OF TIME

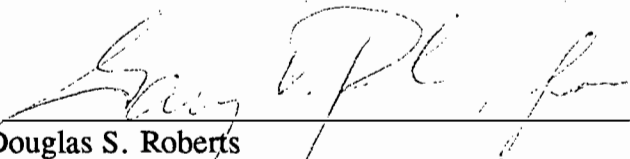
By and through undersigned counsel, Seminole Electric Cooperative, Inc. (Seminole) hereby withdraws its Request for An Enlargement of Time to file a petition for formal administrative proceedings concerning the subject permit, in accordance with Chapter 120, Florida Statutes. On May 24, 1999, Seminole filed its Request for Extension of Time until July 24, 1999, in response to the Department of Environmental Protection's (Department) "Intent to Issue PSD Permit Modification" for FDEP Construction Permit No.: PSD-FL-214(A)/PA-89-25SA for the Hardee Power Station Unit 3 (Payne Creek Generating Station) located in Hardee County, Florida. The request was filed to allow Seminole additional time in which to discuss and negotiate certain changes in the modified PSD permit with the Department. Seminole and the Department have now come to an agreement on the issues involved in the above-referenced modified PSD permit. This agreement is reflected in the draft FDEP Construction Permit No.: PSD-FL-214A/PA-89-25SA, a copy of which is provided and incorporated by reference herein as

Attachment A. The Department has agreed to issue a final modified PSD permit with the language reflected in Attachment A, which is acceptable to Seminole.

Therefore, Seminole hereby withdraws its Request for Extension of Time, conditioned upon the Department's issuance of a Final modified PSD Permit in accordance with the agreement reflected in Attachment A hereto.

Respectfully submitted this 20th day of July 1999.

HOPPING GREEN SAMS & SMITH, P.A.

By: 

Douglas S. Roberts
Fla. Bar No. 559466
Robert A. Manning
Fla. Bar No. 0035173
123 South Calhoun Street
Post Office Box 6526
Tallahassee, FL 32314
(850) 222-7500

Attorneys for SEMINOLE ELECTRIC
COOPERATIVE, INC.

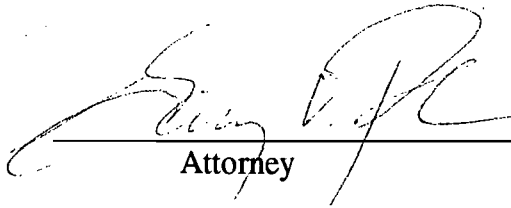
CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of the foregoing has been furnished to the following by

U.S. Mail on this 20th day of July 1999:

Al Linero
Bureau of Air Regulation
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Scott Goorland, Esq.
Department of Environmental Protection
Room 669
2600 Blair Stone Road
Tallahassee, FL 32399-2400



Attorney

PERMITTEE:
Seminole Electric Cooperative
Incorporated
P.O. Box 272000
Tampa, FL 33688-2000

Permit Number: PSD-FL-214A/PA-89-25SA
Issued: 9/28/95 Revised: 7/20/99
County: Polk & Hardee
Latitude/Longitude: 27°38'30"N
81°57'45"W
Project: 488 MW Combined Cycle
Power Plant

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-212 and 62-4. 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 specifically described as follows:

For a 488 MW (nominal) combined cycle power plant consisting of two 157.5 MW (nominal) combustion turbines (CTs), two heat recovery steam generators (HRSGs), a 173 MW (nominal) steam turbine generator and a 4.4 million gallon fuel oil storage tank. The maximum heat input at 32°F is 1962 MMBtu/hr/CT (natural gas) and 1888 MMBtu/hr/CT (oil). The plant will be located at the Polk and Hardee County site near Bowling Green, Florida which is also the site of a 295 MW power plant which is operated by Hardee Power Partners Limited (HPPL). The combustion turbines are to be Westinghouse Model 501F (D) or equivalent and equipped with dry low NO_x combustors and a Selective Catalytic Reduction (SCR) system for natural gas firing and wet injection for fuel oil firing. The CT will be fired with natural gas and No. 2 low sulfur fuel oil with a sulfur content limit not to exceed 0.05 percent, by weight, as a back-up only. Each CT will also be equipped with a carbon monoxide oxidation catalyst control system.

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Howard L. Rhodes, Director
Division of Air Resources
Management

PERMITTEE:
Seminole Electric Cooperative Inc.

Permit Number: PSD-FL-214A
(PA-89-25SA)

Attachments are listed below:

1. Seminole Electric Cooperative Incorporated's (SECI) application received May 9, 1994.
2. Department's letters dated June 27, September 21, and November 16, 1994.
3. SECI's letters dated August 26, October 6, and November 23, 1994.
4. SECI's letter dated February 9, 1995.
5. SECI's letters dated December 1 and December 21, 1998; January 29 and February 11, 1999.

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, F.S. 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), F.S., 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 acknowledgment 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 F.S. and Department rules, unless specifically authorized by an order from the Department.
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

PERMITTEE:
Seminole Electric Cooperative Inc.

Permit Number: PSD-FL-214A
(PA-89-25SA)

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 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 F.S. or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, F.S. 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 F.S. after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by F.S. or Department rules.

11. This permit is transferable only upon Department approval in accordance with Rules 62-4.120 and 62-730.300, 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.

PERMITTEE:
Seminole Electric Cooperative Inc.

Permit Number: PSD-FL-214A
(PA-89-25SA)

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 (NSPS)

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.

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.

16. Circumvention. No person shall circumvent any air pollution control device, or allow the emission of air pollutants without the applicable air pollution control device operating properly pursuant to Rule 62-210.650 F.A.C.

SPECIFIC CONDITIONS:

The construction and operation of the project shall be in accordance with all applicable provisions of Chapters 62-210 through 62-297 and 62-4, Florida Administrative Code (F.A.C.), and 40 CFR 60, Subpart GG, Appendix A, Appendix B, and Appendix F (1994 version). The following emission limitations and conditions reflect the BACT determinations for the 315 megawatts (nominal) (MW; two 157.5 MW (nominal) combined cycle combustion turbines) of generating

PERMITTEE:
Seminole Electric Cooperative Inc.

Permit Number: PSD-FL-214A
(PA-89-25SA)

capacity. Each combustion turbine (CT) will be connected to a heat recovery steam generator (HRSG), which will recover the waste heat to produce steam for utilization in a single 173 MW (nominal) steam turbine. There is no fuel firing in the associated HRSG. The facility will have a total nominal generating capacity of 488 MW (nominal). In addition to the foregoing, the project shall comply with the following Specific Conditions:

A. General Requirements

1. Pursuant to Rule 62-212.200(56), F.A.C., Potential to Emit (PTE), the maximum heat input to each Westinghouse 501F (D) CT, or equivalent, at an ambient temperature of 32°F, shall neither exceed 1,962 MMBtu/hr while firing natural gas nor 1,888 MMBtu/hr while firing fuel oil.
2. Pursuant to Rule 62-212.200(56), F.A.C., PTE, the CTs may operate continuously, i.e., 8,760 hrs/year.
3. Pursuant to Rule 62-212.200(56), F.A.C., PTE, only natural gas or No. 2 fuel oil is allowed to be fired in the CTs. The maximum sulfur content limit of the No. 2 fuel oil shall not exceed 0.05 percent, by weight.
4. Pursuant to Rule 62-212.200(56), F.A.C., PTE, the maximum No. 2 fuel oil consumption allowed to be burned is 41,751,000 gallons per year, which is equivalent to 1500 hours per CT per year of operation at full load (not to exceed 3,000 hrs/yr between the two CTs). The No. 2 fuel oil is to be used as a back-up fuel only.
5. Pursuant to Rule 62-296.310(3), F.A.C., Unconfined Emissions of Particulate Matter (PM), the emissions of unconfined PM shall be minimized during the construction period by covering or watering dust generating areas.

B. Emission Limits

1. Pursuant to Rule 62-212.410, F.A.C., BACT, the maximum allowable emission limitations from two CTs, when firing natural gas or No. 2 fuel oil, shall not exceed the following:

PERMITTEE:
Seminole Electric Cooperative Inc.

Permit Number: PSD-FL-214A
(PA-89-25SA)

MAXIMUM ALLOWABLE EMISSION LIMITATIONS

<u>POLLUTANT</u>	<u>FUEL</u>	<u>CONCENTRATION</u>	<u>lbs/hr (a)</u>	<u>TPY (b)</u>	<u>TPY (TOTAL) ^c</u>
NO _x	Gas	9 ppmvd (d)	68	596	906
	Oil	42 ppmvd (e)	336	504	
CO	Gas	20 ppmvd	71	622	618
	Oil	25 ppmvd	91	136	
PM/PM ₁₀	Gas		7	65	147
	Oil		67	100	
SO ₂	Gas		5	47	182
	Oil		101	152	
VOC	Gas	5 ppmvd	10	88	99
	Oil	10 ppmvd	21	31	
Sulfuric Acid Mist	Gas		1	6	39
	Oil		22	34	
Beryllium	Oil		0.0049	0.007	0.007
Arsenic	Oil		0.0097	0.014	0.014
Visible Emissions	Gas		≤ 10 percent opacity		
	Oil		≤ 10 percent opacity		

(a) The emission limitations in lbs/hr/CT are a 1-hour average as determined pursuant to the Performance Testing conducted pursuant to Condition C.1 below.

(b) The annual emission limitations (TPY) for natural gas are based on two CTs operating at full load for 8,760 hours per year. The annual emission limitations (TPY) for fuel oil are based on the equivalent of full-load operation for a maximum of 1500 hours per year for each of the two CTs (not to exceed 3,000 hrs/yr between the two CTs). The emission calculations are also based at a worst case ambient temperature of 32°F.

(c) Maximum allowable emissions from two CTs if any fuel oil is burned at the facility during the year. The emission calculations are also based at an ambient temperature of 59°F.

(d) The natural gas NO_x allowable emission limitation of 9 ppmvd is corrected to 15 percent O₂. An interim limit of 12 ppmvd (91 lb/hr/CT, 797 TPY) corrected to 15 percent O₂ shall be allowed for a period of one year from the startup date. Compliance shall be determined through the initial and annual compliance tests.

(e) The fuel oil NO_x allowable emission limitation of 42 ppmvd is corrected to 15 percent oxygen. Compliance shall be determined through the initial and annual compliance tests. The annual compliance test will be required if the fuel oil is fired for more than 400 hours in the preceding 12-months.

PERMITTEE:
Seminole Electric Cooperative Inc.

Permit Number: PSD-FL-214A
(PA-89-25SA)

For fuel oil firing, NO_x emissions of 42 ppmvd @ 15 percent O₂ are based on fuel bound nitrogen (FBN) content of 0.015 percent by weight or less. When FBN levels are above this percentage, the CTs may produce higher NO_x concentrations due to increased fuel NO_x formation. When FBN levels are above

0.015 percent, the operator shall employ all reasonable measures to maintain the NO_x concentrations below 42 ppmvd. However, NO_x emissions (ppmvd and lb/hr), as calculated from the formula below, shall be allowed if the permittee submits data (FBN levels from most recent fuel shipment or as fired fuel sampling and hourly averages of: fuel rate, heat rate, ambient conditions, and NO_x control system parameters) which demonstrates that emissions (hourly averages) above 42 ppmvd are due solely to FBN levels above 0.015 percent.

The emission level for NO_x is adjusted for higher fuel nitrogen contents up to a maximum of 0.030 percent by weight as follows:

FUEL BOUND NITROGEN (% by weight)	NO _x LEVELS (ppmvd @ 15% O ₂)	NO _x EMISSIONS (lb/hr/CT) ¹	NO _x EMISSIONS INCREASE (TPY) ¹
0.015 or less	42	336.2	0
0.020	44	352.1	0
0.025	46	368.2	0
0.030	48	384.2	0

1 - From 336.2 lb/hr/CT at 32⁰F basis.

For intermediate values of FBN use the formula:

$$STD = 0.0042 + F$$

where,

STD = allowable NO_x emissions (ppmvd @ 15% O₂)

F = NO_x emission allowance for fuel bound nitrogen

and

N (fuel bound nitrogen), is defined as follows:

N (% by weight)	F (NO _x % by volume)
0 < N ≤ 0.015	0
0.015 < N ≤ 0.030	0.04 (N - 0.015)
0.030 < N	0.0006

2. The following estimated CT emissions are tabulated for PSD tracking purposes only:

ESTIMATED EMISSIONS

PERMITTEE:
Seminole Electric Cooperative Inc.

Permit Number: PSD-FL-214A
(PA-89-25SA)

<u>POLLUTANT</u>	<u>FUEL</u>	<u>TPY</u>
Lead	Oil (a,b)	0.16
Fluoride	Oil (a,b)	0.090
Mercury	Gas (c)	0.0003
	Oil (a,b)	0.024

(a) The annual emission limitations (TPY) for fuel oil are based on full-load operation for a total of 3,000 hours per year between the two CTs at an ambient temperature of 59°F.

(b) The No. 2 fuel oil shall have a maximum sulfur content limit of 0.05 percent, by weight.

(c) The annual emission limitation (TPY) for natural gas is based on two CTs operating at full-load for 8,760 hours per year at an ambient temperature of 59°F.

3. The permittee will install a dry low-NO_x (DLN) combustor or an SCR system on each CT. Ammonia slip from the SCR system shall not exceed 10 ppm. The permittee shall make every practicable effort to achieve the lowest possible NO_x emission rate, but must not exceed 12 ppmvd at 15 percent O₂ per CT on a continuous basis when firing natural gas during the first year of operation. The final limit for NO_x one year after startup will be 9 ppmvd at 15% O₂.

4. After the startup of the CTs, the permittee shall operate a certified continuous emissions monitor for NO_x emissions and collect 12 months of monitoring data. The monitor will, at a minimum, meet the requirements of 40 CFR 60, Appendix F's quality assurance procedures. Within 15 months after the startup, the permittee shall prepare and submit for the Department's review an engineering report regarding the collection and the analysis of the data gathered from the monitor. In addition, this report shall include a conclusion regarding the lowest NO_x emission rate that can be consistently achieved with a reasonable operating margin, taking into account long-term performance expectations and assuming good operating and maintenance practices. The report shall also include results of the testing requirements of 40 CFR 60, Appendix F's quality assurance procedures and the actual CEMS data for the period of the study in an acceptable format.

5. The Department will make a determination as to whether to seek to revise the permitted NO_x emission limitation and will base it on the engineering data report submitted by the permittee. If the data demonstrate that a NO_x emission rate of less than 12 ppmvd at 15 percent O₂ is consistently achievable, the NO_x emission limit may be adjusted accordingly, but not lower than 9 ppmvd at 15 percent O₂.

6. Excess emissions from a turbine resulting from start up, shutdown, malfunction, fuel switch or load change shall be reported in accordance with 40 CFR 60.334(c) and accepted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24-hour period unless specifically authorized by the Department for a longer duration. The

PERMITTEE:
Seminole Electric Cooperative Inc.

Permit Number: PSD-FL-214A
(PA-89-25SA)

permittee shall provide a general description of the procedures to be followed during periods of start up, shutdown, malfunction, fuel switch or load change to ensure that the best operational practices to minimize emissions will be adhered to and the duration of any excess emissions will be minimized. The description should be submitted to the Department along with the initial compliance test data. The description may be updated as needed by submitting such update to the Department within thirty (30) days of implementation.

7. Excess emissions from fuel switching shall not exceed 15 minutes.

8. Excess emissions due to fuel bound nitrogen levels above 0.015 percent are allowed pursuant to Condition B.1 foot note (e) of the emission limitation table.

C. Performance Testing

1. Initial (I) compliance tests shall be performed on each CT using both fuels. Testing of emissions shall be conducted at 95-100% of the manufacturer's rated heat input based on the average ambient air temperature for the CT during the test. Annual (A) compliance tests shall be performed on the CT with the fuel(s) used for more than 400 hours in the preceding 12-month period. Tests at permit renewal shall also be performed on the non-PSD pollutants. Tests and procedures shall be in accordance with 40 CFR 60.335. Tests shall be conducted using EPA reference methods in accordance with 40 CFR 60, Appendix A, as adopted by reference in Chapter 62-297, F.A.C, and follows:

a. Reference Method 5B for PM (I, A: for oil only; assumption is that all PM is PM₁₀).

b. Reference Method 9 for VE (I, A).

c. Reference Method 10 for CO (I, A).

d. Reference Method 20 for NO_x (I, A) or Method 7E if sampling downstream of the heat recovery steam generator.

e. Reference Method 18 or 25A for VOC (I, A).

f. Reference Method 8 for H₂SO₄ Mist (I, A).

g. Trace elements of Beryllium (Be) and Arsenic (As) shall be tested (I, for oil only) using EMTIC Interim Test Methods. As an alternative, EPA Method 104 for Be may be used; or, Be and As may be determined from fuel analysis using either Method 7090 or 7091 and sample extraction using Method 3040, as described in the EPA solid waste regulations SW 846.

h. ASTM D4294 (or equivalent) for sulfur content of distillate oil (I and A), which can be used for determining SO₂ emissions annually.

i. ASTM D1072-80, D3031-81, D4084-82, or D3246-81 (or equivalent) for sulfur content of natural gas (I; and, A if deemed necessary by the Department).

j. Other USEPA or DEP approved test methods for the permitted facilities may be used for compliance testing after departmental approval. Unless the permittee requests to modify a reference

PERMITTEE:
Seminole Electric Cooperative Inc.

Permit Number: PSD-FL-214A
(PA-89-25SA)

method, or to use a method for which a method was not designed, such approval shall not constitute an alternative test procedure under Section 62-297.620, F.A.C., or otherwise require modification of the permit.

2. The maximum sulfur content of the fuel oil shall not exceed 0.05 percent, by weight. Compliance shall be demonstrated in accordance with the requirements of 40 CFR 60.334(b).

3. As an alternative to Condition C.1.i above, natural gas supplier data for sulfur content may be submitted. However, the applicant is responsible for ensuring that the procedures above are used for determination of fuel sulfur content. Analysis may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency pursuant to 40 CFR 60.335(e) (1993 version). Any request for a future custom monitoring schedule shall be made in writing to the Department's Bureau of Air Regulation. Any custom schedule approved by the USEPA pursuant to 40 CFR 60.334(b) (1993 version) will be recognized as enforceable provisions of the permit.

D. Monitoring Requirements

Monitoring of operations shall be in accordance with 40 CFR 60.334. Also, and for each CT, the permittee shall install, operate, and maintain a continuous emission monitoring system (CEMS) to monitor nitrogen oxides in accordance with 40 CFR 60, Appendix F, and, if necessary, a diluent gas (CO₂ or O₂). The Federal Acid Rain Program requirements of 40 CFR 75 shall apply.

1. Each CEMS shall meet performance specifications of 40 CFR 60, Appendix B.

2. CEMS data shall be recorded and reported in accordance with Rule 62-297.500, F.A.C.; 40 CFR 60; and, 40 CFR 75, if it becomes applicable. The record shall include periods of start up, shutdown, load change, fuel switch, high fuel bound nitrogen, and malfunction.

3. A malfunction means any sudden and unavoidable failure of air pollution control equipment or process equipment to operate in a normal or usual manner. Failures that are caused entirely or in part by poor maintenance, careless operation or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions.

4. The procedures under 40 CFR 60.13 shall be followed for installation, evaluation, and operation of all CEMS. In addition, 40 CFR 75 shall apply (Federal Acid Rain Program).

5. For purposes of the reports required under this permit, excess emissions, as determined pursuant to Condition B.6 herein, are defined as any calculated average emission rate which exceeds the applicable emission limitation in Condition B.1.

E. Notification, Reporting and Recordkeeping

1. To determine compliance with the natural gas and fuel oil firing heat input limitation, the permittee shall maintain daily records of natural gas and fuel oil consumption for each turbine, and provide the heating value for each fuel during the compliance test. All records shall be maintained for a

PERMITTEE:
Seminole Electric Cooperative Inc.

Permit Number: PSD-FL-214A
(PA-89-25SA)

minimum of three years after the date of each record and shall be made available to representatives of the Department upon request.

2. The project shall comply with all the applicable requirements of Chapters 62-210 through 62-297 and 62-4, F.A.C., and 40 CFR 60, Subparts A and GG. The requirements shall include:

- a. 40 CFR 60.7(a)(1) - By postmarking or delivering notification of the start of construction no more than 30 days after such date.
- b. 40 CFR 60.7(a)(2) - By postmarking or delivering notification of the anticipated date of the initial start up of each CT not less than 30 days prior to such date.
- c. 40 CFR 60.7(a)(3) - By postmarking or delivering notification of the actual start up of each turbine within 15 days after such date.
- d. 40 CFR 60.7(a)(5) - By postmarking or delivering notification of the date for demonstrating the CEMS performance, no less than 30 days prior to such date.
- e. 40 CFR 60.7(a)(6) - By postmarking or delivering notification of the anticipated date for conducting the opacity observations no less than 30 days prior to such date.
- f. 40 CFR 60.7(b) - By initiating a recordkeeping system to record the occurrence and duration of any start up, shutdown, load change, fuel switch, high fuel bound nitrogen, and malfunction of a turbine, malfunction of the air pollution control equipment, and the periods when the CEMS is inoperable.
- g. 40 CFR 60.7(c) - By postmarking or delivering a quarterly excess emissions and monitoring system performance report within 30 days after the end of each calendar quarter. This report shall contain the information specified in 40 CFR 60.7(c) and (d).
- h. 40 CFR 60.8(a) - By conducting all performance tests within 60 days after achieving the maximum turbine and boiler firing rates, but not more than 180 days after the initial start up of each CT.
- i. 40 CFR 60.8(d) - By postmarking or delivering notification of the date of each performance test required by this permit at least 30 days prior to the test date; and,
- j. Rule 62-297.345 - By providing stack sampling facilities for each turbine.
- k. All notifications and reports required by this specific condition shall be submitted to the Department's Southwest District office. Performance test results shall be submitted within 45 days of completion of such test.

PERMITTEE:
Seminole Electric Cooperative Inc.

Permit Number: PSD-FL-214A
(PA-89-25SA)

3. The following information shall be submitted to the Department's Bureau of Air Regulation within 90 days after the permittee has made the selection of the following:

a. Description of the final selection of the turbines, SCR and CO oxidation catalyst control systems. The descriptions shall include the specific make and model numbers and any changes in the proposed method of operation, fuels, emissions or equipment.

b. Description of the CEMS selected. The description shall include the type of sensors and the manufacturer and model numbers of the equipment.

4. The following protocols shall be submitted to the Department's Southwest District office for approval:

a. CEMS Protocol - Within 120 days after selection of the CEMS, but 180 days prior to the initial startup, a CEMS protocol describing the system, its installation, operating and maintenance characteristics and requirements. The protocol shall meet the requirements of 40 CFR 60.13, Appendix B and Appendix F or 40 CFR 75, and be approved within 60 days.

b. Performance Test Protocol - At least 90 days prior to conducting the initial performance tests required by this permit, the permittee shall submit to the Department's Southwest District office a protocol outlining the procedures to be followed, the test methods and any differences between the reference methods and the test methods proposed to be used to verify compliance with the conditions of this permit. The Department shall approve the testing protocol within 60 days provided that it meets the requirements of this permit.

c. Heat Input Curves - Within 120 days after final selection of the turbine, but 180 days prior to initial startup of the turbine, manufacturer's curves or equations of heat input and NOx emission rate (lbs/hr) corrections to other temperatures shall be provided to the Department.

d. Subject to the approval by the Department for technical validity while applying sound engineering principles, the manufacturer's curves shall be used to establish the heat input rates over a range of temperatures for the purposes of compliance determination.

F. Modifications

The permittee shall give written notification to the Department when there is any modification to this facility pursuant to Rule 62-212.200, F.A.C., Definitions - Modifications. This notice shall be submitted sufficiently in advance of any critical date involved to allow sufficient time for review, discussion, and revision of plans, if necessary. Such notice shall include, but not be limited to, information describing the precise nature of the change; modifications to any emission control system; production capacity of the facility before and after the change; and, the anticipated completion date of the change.

G. No. 2 Fuel Oil Storage Tank

The permittee shall be in compliance with the monitoring requirements of 40 CFR 60.116b(a) and (b).

PERMITTEE:
Seminole Electric Cooperative Inc.

Permit Number: PSD-FL-214A
(PA-89-25SA)

H. Additional General Conditions

1. Pursuant to Rule 62-4.090, F.A.C., the permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation prior to 60 days before the expiration of the permit.
2. An application for an operation permit pursuant to Rule 62-4.220, F.A.C., is not required if the facility is also certified under the Power Plant Siting Act, Chapter 403, Part II, F.S. That certification serves as the operation permit also. The permittee must submit an application for an operation permit for a major source of pollution pursuant to Chapter 62-213, F.A.C.
3. Approval to construct shall become invalid if construction is not commenced by June, 2000, if construction is discontinued for a period of 18 months or more, or if construction is not completed by March 4, 2002. The Department may extend the 18-month period upon a satisfactory showing that an extension is justified. [40 CFR 52.21(r)(2)].

RECEIVED

JUN 07 1999

BUREAU OF
AIR REGULATION

June 4, 1999

Mr. Syed Arif
Florida Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400

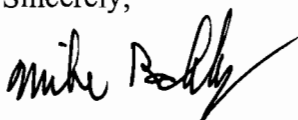
Re: DEP File PSD-FL-214A
Hardee Power Station(Payne Creek Generating Station)

Dear Mr. Arif:

This letter is in response to the Department's request for more detail as to our Engineering/Construction Schedule for the Payne Creek Project. Construction activities will begin on 3-1-2000 and run through 1-2-2002. Based on the definition of "construction", the placement of permanent site structures such as concrete footers, etc. will begin by June 2000. I have also attached a preliminary project schedule, as requested.

If you have any questions or require any additional information, please give me a call at (813) 963-0994, ext 1224.

Sincerely,



Mike Roddy
Senior Environmental Engineer

PAYNE CREEK - ENGINEERING/CONSTRUCTION/PROCUREMENT

Printed: 5/18/1999
Page 1 Revision 1

May 26, 1999

Mr. Syed Arif
Florida Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RECEIVED

MAY 27 1999

**BUREAU OF
AIR REGULATION**

Re: DEP File PSD-FL-214A
Hardee Power Station (Payne Creek Generating Station)

Dear Mr. Arif:

Seminole Electric Cooperative, Inc. (SECI) is requesting a change to the Department's pending PSD Permit Modification. That PSD permit also represents the Department-issued state air construction permit, which is functionally separate from the PSD permit.. This request is for an extension of the current expiration date for the state air construction permit aspects of the Permit from January 1, 2000 to March 4, 2002. The reason for the new date is to allow for sufficient time (six months after first fire) to get the units operational for the initial compliance tests, consistent with FDEP Rule 62-210.300(1), F.A.C. ("The [air construction] permit shall be issued for a period of time sufficient to allow construction. . . of the facility . . . and operation while the new. . . facility. . . is conducting tests or otherwise demonstrating initial compliance with the conditions of the construction permit.") CTG-1 and CTG-2 are scheduled for first fire on August 1, 2001 and September 4, 2001, respectively.

As you are aware, SECI received PSD Final Determination on September 21, 1995 and certification pursuant to the Florida Electrical Power Plant Siting Act on August 15, 1995. During 1995, SECI received a proposal from Florida Power Corporation (FPC) to supply SECI with approximately 450 MW of firm capacity for three years and 150 MW of system intermediate capacity for the period of 1999 through 2013. Through subsequent negotiations, SECI found that this arrangement would result in significant savings to its Member Systems when compared to the Payne Creek Generating Station (PCGS), and thus decided to delay the PCGS project in service date until January 1, 2002. SECI entered into agreement with FPC and notified the contractor (Black&Veatch/Westinghouse), the Florida Public Service Commission, and the Florida Department of Environmental Protection of the project delay.

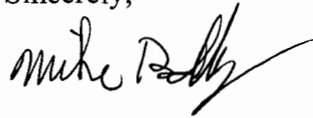
In 1998 SECI evaluated alternatives for capacity and energy to replace various existing contracts. None of the proposed alternatives was superior to the delayed PCGS project, and in December, 1998, The SECI Board of Trustees authorized the reactivation of the project with an in service date of January 1, 2002

Due to the above stated reasons, SECI is requesting the new expiration date of March 4, 2002 in order to make the date consistent with the current reactivation schedule. This represents a

minor change to the state air construction permit aspects of the Permit to extend the period for construction and demonstration of compliance with the Permit conditions. The request does not require further agency action or public notice under the separate PSD rules, which are not implicated by this request. .

If you have any questions or require additional information please give me a call at (813) 963-0994, ext 1224.

Sincerely,

A handwritten signature in black ink, appearing to read "Mike Roddy", with a long, sweeping horizontal stroke extending to the right.

Mike Roddy
Senior Environmental Engineer



May 25, 1999

Mr. Syed Arif
Florida Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RECEIVED

MAY 26 1999

**BUREAU OF
AIR REGULATION**

**Re: DEP File PSD-FL-214A
Hardee Power Station Unit 3 (Payne Creek Generating Station)**

Dear Mr. Arif:

Attached for your files, please find a copy of the Public Notice and the Affidavit of Publication. The notice was run in The Herald-Advocate on Thursday May 20, 1999.

Sincerely,

Mike Roddy
Senior Environmental Engineer

cc: Hamilton S. Oven- FDEP
Doug Roberts- HGS&S

cc: File
SWO

AFFIDAVIT OF PUBLICATION The Herald-Advocate

STATE OF FLORIDA,
COUNTY OF HARDEE

Before the undersigned authority personally appeared Jim Kelly who on oath says he is the editor of The Herald-Advocate, a newspaper published at Wauchula, in Hardee County, Florida; that the attached copy of advertisement, being a Public Notice in the matter of Voluntary to Issue PSD Permit Modification in the _____ Court, was published in said newspaper in the issue of 6-22-1999

Affiant further says that the said Herald-Advocate is a newspaper published at Wauchula, in said Hardee County, Florida, and that the said newspaper has heretofore been continuously published in said Hardee County, Florida, each week and has been entered as second class mail matter at the post office in Wauchula, in said Hardee County, Florida, for a period of one year next preceding the publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Sworn to and subscribed before me this 21 day of May, A. D. 1999
Theresa V. Cimmino
Notary Public
My Commission Expires June 15, 1999

RECEIVED

MAY 26 1999

BUREAU OF
AIR REGULATION

Pursuant to Condition of Certification XXVIII.C of the separate Power Plant Site (PPSA) Certification Order, PA 89-25SA, for the Hardee Power Station Unit 3, the PPSA certification will be automatically modified to conform to amendments to the facility's PSD permit. Upon issuance of any amended PSD permit, the Department will also modify the parallel PPSA conditions of certification to conform to the amended conditions of the PSD permit.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Dept. of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301
Telephone: 850/488-0114
Fax: 850/922-6979

Dept. of Environmental Protection
Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619-8218
Telephone: 813/744-8100
Fax: 813/744-6084

The complete project file includes the Draft Permit Modification, the application, and the information submitted by the applicant or responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Bureau of Air Regulation at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-0114 for additional information.

5:20c

PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT MODIFICATION

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

DEP File PSD-FL-214A/PA-89-26SA

Hardee Power Station Unit 3
(Payne Creek Generating Station)
Hardee County

The Department of Environmental Protection (Department) gives notice of its intent to issue a PSD Permit Modification to Seminole Electric Cooperative Incorporated (Seminole) to install a Selective Catalytic Reduction (SCR) system and a carbon monoxide (CO) oxidation catalyst control system at its Combined Cycle Facility to be located near Bowling Green, Hardee County. A Best Available Control Technology determination was not required pursuant to Rule 62-212.400, F.A.C. or 40CFR52.21, Prevention of Significant Deterioration (PSD). The applicant's name and address are: Seminole Electric Cooperative Incorporated, Post Office Box 272000, Tampa, Florida 33688-2000.

The facility was originally permitted in 1995 as a 440 megawatt power plant consisting of two Westinghouse Model 501F (or equivalent) gas or oil-fired combustion turbines and a heat recovery steam generator. The actual equipment to be installed has a power capability of 488 MW and is powered by Siemens/Westinghouse 501F(D) combustion turbines. The current permit requires that nitrogen oxides (NO_x) emissions be controlled through Dry Low NO_x (DLN) combustion technology. The DLN combustors installed will not be able to achieve the permit limit of 15 parts per million volume dry (ppmv) at 15 percent oxygen (O₂) or 108 pounds per hour per turbine. Siemens/Westinghouse and Seminole have decided to install Selective Catalytic Reduction (SCR) in addition to Siemens/Westinghouse's present generation of DLN combustors in order to comply with the revised permit limit for NO_x of 12 ppmv @ 15% O₂. The revised NO_x emission limit of 12 ppmv @ 15% O₂ will be granted for a period of one year (12 months) from the start-up date. The NO_x emission limit will be reduced to 9 ppmv @ 15% O₂ based on the operating experience of the combustion turbines with SCR.

The applicant has consented to equip the combustion turbines with CO oxidation catalyst control system to meet the established CO limits in the existing PSD permit. Seminole has also requested that the name for Hardee Unit 3 be changed to "Payne Creek Generating Station".

Adjustments to emission limits due to the change in combustion turbines have been less than PSD significant amounts. These changes will not

the National Ambient Air Quality Standards or Allowable Increments under the requirements for Prevention of Significant Deterioration of Air Quality.

The Department will accept written comments concerning the proposed permit modification issuance action for a period of 30 (thirty) days from the date of publication on "Public Notice of Intent to Issue PSD Permit Modification." Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station 5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit modification and require, if applicable, another Public Notice.

The Department will issue the permit modification with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under Section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of the notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing, the failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-108.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief; and (f) A demand for relief.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-108.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding. In accordance with the requirements set forth above.

RECEIVED

MAY 25 1999

**BUREAU OF
AIR REGULATION**

**THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

In the Matter of an
Application for Permit by:

OGC CASE NO.: 99-_____

FDEP Construction Permit No.: PSD-FL-214(A)/
PA-89-25SA

Seminole Electric Cooperative, Inc.
Hardee Power Station Unit 3
Payne Creek Generating Station
Hardee County, Florida

_____ /

REQUEST FOR ENLARGEMENT OF TIME

By and through undersigned counsel, Seminole Electric Cooperative, Inc. (Seminole) hereby requests, pursuant to Florida Administrative Code Rule 62-110.106(4), an enlargement of time, to and including July 24, 1999, in which to file a Petition for Administrative Proceedings in the above-styled matter. As good cause for granting this request, Seminole states the following:

1. On or about May 10, 1999, Seminole received from the Department of Environmental Protection (Department) an "Intent to Issue PSD Permit Modification" for FDEP Construction Permit No.: PSD-FL-214(A)/PA-89-25SA for the Hardee Power Station Unit 3 (Payne Creek Generating Station) located in Hardee County, Florida.

2. Based on Seminole's review, the PSD permit modification and associated documents contain several provisions that warrant clarification or correction.

3. This request is filed simply as a protective measure to avoid waiver of Seminole's right to challenge certain conditions contained in the PSD permit modification. Grant of this

request will not prejudice either party, but will further their mutual interest and hopefully avoid the need to file a petition and proceed to a formal administrative hearing.

WHEREFORE, Seminole respectfully requests that the time for filing of a Petition for Administrative Proceedings in regard to the Department's Intent to Issue PSD Permit Modification (FDEP Construction Permit No.: PSD-FL-214(A)/PA-89-25SA) be formally enlarged to and including July 24, 1999. If the Department denies this Request, Seminole requests the opportunity to file a Petition for Administrative Proceeding within 10 days of such denial.

Respectfully submitted this 24 day of May, 1999.

HOPPING GREEN SAMS & SMITH, P.A.

By: Robert Manning
Douglas S. Roberts
Fla. Bar No. 559466
Robert A. Manning
Fla. Bar No. 0035173
123 South Calhoun Street
Post Office Box 6526
Tallahassee, FL 32314
(850) 222-7500

Attorneys for SEMINOLE ELECTRIC
COOPERATIVE, INC.

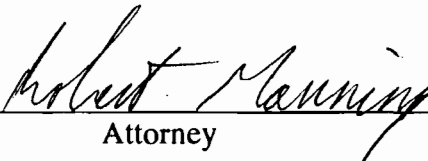
CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of the foregoing has been furnished to the following by

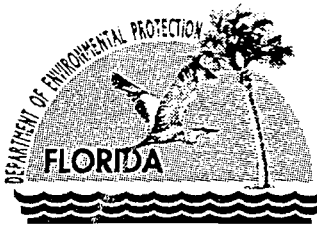
U.S. Mail on this 24 day of May, 1999:

Al Linero
Bureau of Air Regulation
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Scott Gorland, Esq.
Department of Environmental Protection
Room 669
2600 Blair Stone Road
Tallahassee, FL 32399-2400



Attorney



Jeb Bush
Governor

Department of Environmental Protection

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

David B. Struhs
Secretary

May 5, 1999

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Michael P. Opalinski
Director of Environmental Affairs
Seminole Electric Cooperative Incorporated
Post Office Box 272000
Tampa, Florida 33688-2000

Re: DEP File PSD-FL-214A
Hardee Power Station Unit 3 (Payne Creek Generating Station)

Dear Mr. Opalinski:

Enclosed is one copy of the Draft PSD Permit Modification for the Hardee Power Station Combined Cycle facility which will be located near Bowling Green, Hardee County. The Department's Intent to Issue PSD Permit Modification and the "PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT MODIFICATION" are also included.

The "PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT MODIFICATION" must be published in a newspaper of general circulation in Hardee County. Proof of publication, i.e., newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

Please submit any written comments you wish to have considered concerning the Department's proposed action to Bureau of Air Regulation at the above letterhead address. If you have any other questions, please call Mr. Syed Arif at 850/921-9528.

Sincerely,

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

CHF/sa

Enclosures

**TECHNICAL EVALUATION
AND
PRELIMINARY DETERMINATION**

Seminole Electric Cooperative, Incorporated

**Hardee Power Station Unit 3
Combined Cycle Project
Hardee County**

Construction Permit No. PSD-FL-214 (A) / PA-89-25SA

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

May 5, 1999

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Seminole Electric Cooperative, Inc. (Seminole) submitted an application to modify permit No. PSD-FL-214 to install a Selective Catalytic Reduction (SCR) system and a carbon monoxide (CO) oxidation catalyst control system at its Combined Cycle Facility which will be located near Bowling Green, Hardee County.

The facility was originally permitted in September 1995 as a 440 megawatt (MW) power plant consisting of two Westinghouse Model 501F (or equivalent) gas or oil-fired combustion turbines and a heat recovery steam generator. The actual equipment to be installed has a power capability of 488 MW (nominal) and is powered by two Siemens/Westinghouse 501F(D) combustion turbines. The permit requires that nitrogen oxides (NO_x) emissions be controlled through Dry Low NO_x (DLN) combustion technology. The DLN combustors installed will not be able to achieve the permit limit of 15 parts per million volume dry (ppmvd) at 15 percent oxygen (O_2) or 106 pounds per hour per turbine. Siemens/Westinghouse and Seminole have decided to install SCR in addition to Siemens/Westinghouse's present generation of DLN combustors in order to comply with the revised permitted limit for NO_x of 12 ppmvd @ 15% O_2 . The revised NO_x emission limit of 12 ppmvd will be granted for a period of one year (12 months) from the start-up date. The NO_x emission limit will be reduced to 9 ppmvd based on the operating experience of the combustion turbines with SCR.

The applicant has consented to equip the combustion turbines with a CO oxidation catalyst control system to meet the established CO limits in the existing PSD permit. Seminole has also requested that the name for Hardee Unit 3 be changed to "Payne Creek Generating Station".

Adjustments to emission limits due to the change in combustion turbines have been less than PSD significant amounts. These changes will not cause or contribute to a violation of the National Ambient Air quality Standards or Allowable Increments under the requirements for Prevention of Significant Deterioration of air Quality.

Based on the foregoing technical evaluation of the application and additional information submitted by the applicant, the Department has made a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations provided that vendor guarantees for emissions rates are verified and certain conditions are met. The proposed revisions to the original construction permit conditions are attached.

Engineer: *Syed Arif, P.E.*

NOTICE TO BE PUBLISHED IN THE NEWSPAPER

PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT MODIFICATION

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP File PSD-FL-214A/ PA-89-25SA

Hardee Power Station Unit 3 (Payne Creek Generating Station)
Hardee County

The Department of Environmental Protection (Department) gives notice of its intent to issue a PSD Permit Modification to Seminole Electric Cooperative Incorporated (Seminole) to install a Selective Catalytic Reduction (SCR) system and a carbon monoxide (CO) oxidation catalyst control system at its Combined Cycle Facility to be located near Bowling Green, Hardee County. A Best Available Control Technology determination was not required pursuant to Rule 62-212.400, F.A.C. or 40CFR52.21, Prevention of Significant Deterioration (PSD). The applicant's name and address are: Seminole Electric Cooperative Incorporated, Post Office Box 272000, Tampa, Florida 33688-2000.

The facility was originally permitted in 1995 as a 440 megawatt power plant consisting of two Westinghouse Model 501F (or equivalent) gas or oil-fired combustion turbines and a heat recovery steam generator. The actual equipment to be installed has a power capability of 488 MW and is powered by two Siemens/Westinghouse 501F(D) combustion turbines. The current permit requires that nitrogen oxides (NO_x) emissions be controlled through Dry Low NO_x (DLN) combustion technology. The DLN combustors installed will not be able to achieve the permit limit of 15 parts per million volume dry (ppmvd) at 15 percent oxygen (O₂) or 106 pounds per hour per turbine. Siemens/Westinghouse and Seminole have decided to install Selective Catalytic Reduction (SCR) in addition to Siemens/Westinghouse's present generation of DLN combustors in order to comply with the revised permitted limit for NO_x of 12 ppmvd @ 15% O₂. The revised NO_x emission limit of 12 ppmvd @ 15% O₂ will be granted for a period of one year (12 months) from the start-up date. The NO_x emission limit will be reduced to 9 ppmvd @ 15 % O₂ based on the operating experience of the combustion turbines with SCR.

The applicant has consented to equip the combustion turbines with a CO oxidation catalyst control system to meet the established CO limits in the existing PSD permit. Seminole has also requested that the name for Hardee Unit 3 be changed to "Payne Creek Generating Station".

Adjustments to emission limits due to the change in combustion turbines have been less than PSD significant amounts. These changes will not cause or contribute to a violation of the National Ambient Air quality Standards or Allowable Increments under the requirements for Prevention of Significant Deterioration of Air Quality.

The Department will accept written comments concerning the proposed permit modification issuance action for a period of 30 (thirty) days from the date of publication of "Public Notice of Intent to Issue PSD Permit Modification." Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station 5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit modification and require, if applicable, another Public Notice.

The Department will issue the permit modification with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under Section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a

NOTICE TO BE PUBLISHED IN THE NEWSPAPER

waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief; and (f) A demand for relief.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Pursuant to Condition of Certification XXVIII.C of the separate Power Plant Site (PPSA) Certification Order, PA 89-25SA, for the Hardee Power Station Unit 3, the PPSA certification will be automatically modified to conform to amendments to the facility's PSD permit. Upon issuance of any amended PSD permit, the Department will also modify the parallel PPSA conditions of certification to conform to the amended conditions of the PSD permit.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Dept. of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301
Telephone: 850/488-0114
Fax: 850/922-6979

Dept. of Environmental Protection
Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619-8218
Telephone: 813/744-6100
Fax: 813/744-6084

The complete project file includes the Draft Permit Modification, the application, and the information submitted by the applicant or responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Bureau of Air Regulation at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-0114 for additional information.

In the Matter of an
Application for Permit Modification by:

Mr. Michael P. Opalinski
Director of Environmental Affairs
Seminole Electric Cooperative Incorporated
Post Office Box 272000
Tampa, Florida 33688-2000

DEP File PSD-FL-214A
Hardee Power Station Unit 3
Hardee County

INTENT TO ISSUE PSD PERMIT MODIFICATION

The Department of Environmental Protection (Department) gives notice of its intent to issue a permit modification (copy of DRAFT Permit Modification attached) for the proposed action, as detailed in the application specified above, for the reasons stated below.

The applicant, Seminole Electric Cooperative, Inc. (Seminole), applied on February 15, 1999 to the Department for a permit modification to install a Selective Catalytic Reduction System and a carbon monoxide oxidation catalyst control system at the Hardee Power Station Combined Cycle Facility which will be located near Bowling Green, Hardee County. Seminole has also requested that the name for Hardee Power Station Unit 3 be changed to "Payne Creek Generating Station".

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), the Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-212, and 40CFR52.21(u). The above actions are not exempt from permitting procedures. The Department has determined that a modification of the permit issued pursuant to the Prevention of Significant Deterioration (PSD Permit) is required to modify the permit as requested.

The Department intends to issue this PSD Permit modification based on the belief that reasonable assurances have been provided to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C.

Pursuant to Section 403.815, F.S., and Rule 62-110.106(7)(a)1., F.A.C., you (the applicant) are required to publish at your own expense the enclosed "Public Notice of Intent to Issue PSD Permit Modification." The notice shall be published one time only in the legal advertisement section of a newspaper of general circulation in the area affected. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. Where there is more than one newspaper of general circulation in the county, the newspaper used must be one with significant circulation in the area that may be affected by the permit modification. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station 5505, Tallahassee, Florida 32399-2400 (Telephone: 850/488-0114; Fax 850/ 922-6979). The Department suggests that you publish the notice within thirty days of receipt of this letter. You must provide proof of publication within seven days of publication, pursuant to Rule 62-110.106(5), F.A.C. No permitting action for which published notice is required shall be granted until proof of publication of notice is made by furnishing a uniform affidavit in substantially the form prescribed in Section 50.051, F.S. to the office of the Department issuing the permit modification or other authorization. Failure to publish the notice and provide proof of publication may result in the denial of the permit modification pursuant to Rules 62-110.106(9) & (11), F.A.C.

The Department will issue the final permit modification with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit modification issuance action for a period of 30 (thirty) days from the date of publication of "Public Notice of Intent to Issue PSD Permit Modification." Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit modification and require, if applicable, another Public Notice.

The Department will issue the permit modification with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under Section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

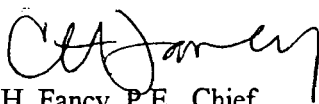
A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief; and (f) A demand for relief.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

Executed in Tallahassee, Florida.


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

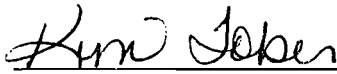
CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this INTENT TO ISSUE PSD PERMIT MODIFICATION (including the PUBLIC NOTICE, and DRAFT permit modification) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 5-6-99 to the person(s) listed:

Mr. Michael P. Opalinski, Director Environmental Affairs*
Mr. Doug Neely, EPA
Mr. John Bunyak, NPS
Mr. Bill Thomas, DEP SWD
Mr. Buck Oven, DEP PPS

Clerk Stamp

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


(Clerk) 5-6-99
(Date)

Is your RETURN 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):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Michael Opalinski, DEA
Seminole Electric
PO Box 272000
Tampa, FL 33688-2000

4a. Article Number

2 333 618 105

4b. Service Type

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

7. Date of Delivery

5-16-99

5. Received By: (Print Name)

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

6. Signature: (Addressee or Agent)

X *William R. Ste*

PS Form 3811, December 1994

102595-97-B-0179

Domestic Return Receipt

Thank you for using Return Receipt Service.

2 333 618 105

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to	
<i>Michael Opalinski</i>	
Street & Number	
<i>Seminole Electric</i>	
Post Office, State, & ZIP Code	
<i>Tampa FL</i>	
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	
<i>PSD-FL-214A 5-6-99</i>	

PS Form 3800, April 1995

DRAFT

PERMITTEE:
Seminole Electric Cooperative
Incorporated
P.O. Box 272000
Tampa, FL 33688-2000

Permit Number: PSD-FL-214A/PA-89-25SA
Issued: 9/28/95 Revised: 5/xx/99
Expiration Date: January 1, 2000
County: Polk & Hardee
Latitude/Longitude: 27°38'30"N
81°57'45"W
Project: ~~48840~~ MW Combined Cycle
Power Plant

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-212 and 62-4. 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 specifically described as follows:

For a ~~48840~~ MW (nominal) combined cycle power plant consisting of two ~~157.5~~ ~~150~~ MW (nominal) combustion turbines (CTs), two heat recovery steam generators (HRSGs), a ~~173~~ ~~140~~ MW (nominal) steam turbine generator and a 4.4 million gallon fuel oil storage tank. The maximum heat input at 32°F is ~~1962~~ ~~1,862~~ MMBtu/hr/CT (natural gas) and ~~1888~~ ~~1,965~~ MMBtu/hr/CT (oil). The plant will be located at the Polk and Hardee County site near Bowling Green, Florida which is also the site of a 295 MW power plant which is operated by TECO Power Services. The combustion turbines are to be Westinghouse Model 501F (D) or equivalent and equipped with dry low NO_x combustors and a Selective Catalytic Reduction (SCR) system ~~or an equivalent system~~ for natural gas firing and wet injection for fuel oil firing. The CT will be fired with natural gas and No. 2 low sulfur fuel oil with a sulfur content limit not to exceed 0.05 percent, by weight, as a back-up only. Each CT will also be equipped with a carbon monoxide oxidation catalyst control system.

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Howard L. Rhodes, Director
Division of Air Resources
Management

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214A
(PA-89-25SA)

DRAFT

Attachments are listed below:

1. Seminole Electric Cooperative Incorporated's (SECI) application received May 9, 1994.
2. Department's letters dated June 27, September 21, and November 16, 1994.
3. SECI's letters dated August 26, October 6, and November 23, 1994.
4. SECI's letter dated February 9, 1995.
5. SECI's letters dated December 1 and December 21, 1998; January 29 and February 11, 1999.

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, F.S. 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), F.S., 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 acknowledgment 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 F.S. and Department rules, unless specifically authorized by an order from the Department.
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

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214A
(PA-89-25SA)

DRAFT

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 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 F.S. or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, F.S. 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 F.S. after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by F.S. or Department rules.

11. This permit is transferable only upon Department approval in accordance with Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214A
(PA-89-25SA)

DRAFT

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 (NSPS)

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.

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.

16. Circumvention. No person shall circumvent any air pollution control device, or allow the emission of air pollutants without the applicable air pollution control device operating properly pursuant to Rule 62-210.650 F.A.C.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214A
(PA-89-25SA)

DRAFT

SPECIFIC CONDITIONS:

The construction and operation of the project shall be in accordance with all applicable provisions of Chapters 62-210 through 62-297 and 62-4, Florida Administrative Code (F.A.C.), and 40 CFR 60, Subpart GG, Appendix A, Appendix B, and Appendix F (1994 version). The following emission limitations and conditions reflect the BACT determinations for the 315 300 megawatts (nominal) (MW; two 157.5 150 MW (nominal) combined cycle combustion turbines) of generating capacity. Each combustion turbine (CT) will be connected to a heat recovery steam generator (HRSG), which will recover the waste heat to produce steam for utilization in a single 173 140-MW (net) steam generator. There is no fuel firing in the associated HRSG. The facility will have a total nominal generating capacity of 48840 MW (nominal) (net). In addition to the foregoing, the project shall comply with the following Specific Conditions:

A. General Requirements

1. Pursuant to Rule 62-212.200(56), F.A.C., Potential to Emit (PTE), the maximum heat input to each Westinghouse 501F (D) CT, or equivalent, at an ambient temperature of 32°F, shall neither exceed 1,962 1,862 MMBtu/hr while firing natural gas nor 1,888 1,965 MMBtu/hr while firing fuel oil.
2. Pursuant to Rule 62-212.200(56), F.A.C., PTE, the CTs may operate continuously, i.e., 8,760 hrs/year.
3. Pursuant to Rule 62-212.200(56), F.A.C., PTE, only natural gas or No. 2 fuel oil is allowed to be fired in the CTs. The maximum sulfur content limit of the No. 2 fuel oil shall not exceed 0.05 percent, by weight.
4. Pursuant to Rule 62-212.200(56), F.A.C., PTE, the maximum No. 2 fuel oil consumption allowed to be burned is 41,751,000 gallons per year, which is equivalent to 1500 hours per CT per year of operation at full load(not to exceed 3,000 hrs/yr between the two CTs). The No. 2 fuel oil is to be used as a back-up fuel only.
5. Pursuant to Rule 62-296.310(3), F.A.C., Unconfined Emissions of Particulate Matter (PM), the emissions of unconfined PM shall be minimized during the construction period by covering or watering dust generating areas.

B. Emission Limits

1. Pursuant to Rule 62-212.410, F.A.C., BACT, the maximum allowable emission limitations from two CTs, when firing natural gas or No. 2 fuel oil, shall not exceed the following:

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214A
(PA-89-25SA)

DRAFT

MAXIMUM ALLOWABLE EMISSION LIMITATIONS

<u>POLLUTANT</u>	<u>FUEL</u>	<u>CONCENTRATION</u>	<u>lbs/hr(a)</u>	<u>TPY(b)</u>	<u>TPY(TOTAL)^c</u>
NO _x	Gas	9 ±5 ppmvd(d)	68 ±06	596 93±	906 ±2±2
	Oil	42 ppmvd(e)	336	504	
CO	Gas	20 ppmvd	71	622	618
	Oil	25 ppmvd	91	136	
PM/PM ₁₀	Gas		7	65	147
	Oil		67	100	
SO ₂	Gas		5	47	182
	Oil		101	152	
VOC	Gas	5 ppmvd	10	88	99
	Oil	10 ppmvd	21	31	
Sulfuric Acid Mist	Gas		1	6	39
	Oil		22	34	
Beryllium	Oil		0.0049	0.007	0.007
Arsenic	Oil		0.0097	0.014	0.014
Visible Emissions	Gas		≤ 10 percent opacity		
	Oil		≤ 10 percent opacity		

(a) The emission limitations in lbs/hr/CT are a 1-hour average as determined pursuant to the Performance Testing conducted pursuant to Condition C.1 below.

(b) The annual emission limitations (TPY) for natural gas are based on two CTs operating at full load for 8,760 hours per year. The annual emission limitations (TPY) for fuel oil are based on the equivalent of full-load operation for a maximum of 1500 hours per year for each of the two CTs (not to exceed 3,000 hrs/yr between the two CTs). The emission calculations are also based at a worst case ambient temperature of 32°F.

(c) Maximum allowable emissions from two CTs if any fuel oil is burned at the facility during the year. The emission calculations are also based at an ambient temperature of 59°F.

(d) The natural gas NO_x allowable emission limitation of 9 ±5 ppmvd is corrected to 15 percent O₂. An interim limit of 12 ppmvd (91 lb/hr/CT, 797 TPY) corrected to 15 percent O₂ shall be allowed for a period of one year from the startup date. Compliance shall be determined through the initial and annual compliance tests.

(e) The fuel oil NO_x allowable emission limitation of 42 ppmvd is corrected to 15 percent oxygen. Compliance shall be determined through the initial and

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214A
(PA-89-25SA)

DRAFT

annual compliance tests. The annual compliance test will be required if the fuel oil is fired for more than 400 hours in the preceding 12-months.

For fuel oil firing, NO_x emissions of 42 ppmvd @ 15 percent O₂ are based on fuel bound nitrogen (FBN) content of 0.015 percent by weight or less. When FBN levels are above this percentage, the CTs may produce higher NO_x concentrations due to increased fuel NO_x formation. When FBN levels are above

0.015 percent, the operator shall employ all reasonable measures to maintain the NO_x concentrations below 42 ppmvd. However, NO_x emissions (ppmvd and lb/hr), as calculated from the formula below, shall be allowed if the permittee submits data (FBN levels from most recent fuel shipment or as fired fuel sampling and hourly averages of: fuel rate, heat rate, ambient conditions, and NO_x control system parameters) which demonstrates that emissions (hourly averages) above 42 ppmvd are due solely to FBN levels above 0.015 percent.

The emission level for NO_x is adjusted for higher fuel nitrogen contents up to a maximum of 0.030 percent by weight as follows:

FUEL BOUND NITROGEN (% by weight)	NO _x LEVELS (ppmvd @ 15% O ₂)	NO _x EMISSIONS (lb/hr/CT) ¹	NO _x EMISSIONS INCREASE (TPY) ¹
0.015 or less	42	336.2	0
0.020	44	352.1	0
0.025	46	368.2	0
0.030	48	384.2	0

1 - From 336.2 lb/hr/CT at 32⁰F basis.

For intermediate values of FBN use the formula:

$$STD = 0.0042 + F$$

where,

STD = allowable NO_x emissions (ppmvd @ 15% O₂)

F = NO_x emission allowance for fuel bound nitrogen

and

N (fuel bound nitrogen), is defined as follows:

N (% by weight)	F (NO _x % by volume)
0 < N ≤ 0.015	0
0.015 < N ≤ 0.030	0.04 (N - 0.015)
0.030 < N	0.0006

2. The following estimated CT emissions are tabulated for PSD tracking purposes only:

ESTIMATED EMISSIONS

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214A
(PA-89-25SA)

DRAFT

<u>POLLUTANT</u>	<u>FUEL</u>	<u>TPY</u>
Lead	Oil(a,b)	0.16
Fluoride	Oil(a,b)	0.090
Mercury	Gas(c)	0.0003
	Oil(a,b)	0.024

(a) The annual emission limitations (TPY) for fuel oil are based on full-load operation for a total of 3,000 hours per year between the two CTs at an ambient temperature of 59°F.

(b) The No. 2 fuel oil shall have a maximum sulfur content limit of 0.05 percent, by weight.

(c) The annual emission limitation (TPY) for natural gas is based on two CTs operating at full-load for 8,760 hours per year at an ambient temperature of 59°F.

3. The permittee will install a dry low-NO_x (DLN) combustor and a SCR system or an equivalent system on each CT. Ammonia slip from the SCR system shall not exceed 10 ppm. The permittee shall make every practicable effort to achieve the lowest possible NO_x emission rate, but must not exceed 12 15 ppmvd at 15 percent O₂ per CT on a continuous basis when firing natural gas during the first year of operation. If a more advanced DLN burner is developed by Siemens/Westinghouse which is able to comply with the original emission limits (listed in B.1) and is installed by November 1, 2000, the SCR system may be removed and replaced with these new burners upon 30 days prior notice to the Department. This notice shall include information on the new burners which provides reasonable assurance and PE certification that these DLN burners can consistently meet the original NO_x emission limits. In this case the new DLN burners shall be tested in accordance with the initial performance test as described in Section C.1 within 180 days of startup with the new burners. This action would not be subject to PSD review.

4. After the startup of initial compliance tests on the CTs, the permittee shall operate a certified continuous emissions monitor for NO_x emissions and collect 12 months of monitoring data. The monitor will, at a minimum, meet the requirements of 40 CFR 60, Appendix F's quality assurance procedures. Within 15 18 months after the startup initial compliance test, the permittee shall prepare and submit for the Department's review an engineering report regarding the collection and the analysis of the data gathered from the monitor. In addition, this report shall include a conclusion regarding the lowest NO_x emission rate that can be consistently achieved with a reasonable operating margin, taking into account long-term performance expectations and assuming good operating and maintenance practices. The report shall also include results of the testing requirements of 40 CFR 60, Appendix F's quality assurance procedures and the actual CEMS data for the period of the study in an acceptable format.

5. The Department will make a determination as to whether to seek to revise the permitted NO_x emission limitation and will base it on the engineering data

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214A
(PA-89-25SA)

DRAFT

report submitted by the permittee. If the data demonstrate that a NO_x emission rate of less than 12 ~~15~~ ppmvd at 15 percent O₂ is consistently achievable, the NO_x emission limit may be adjusted accordingly, but not lower than 9 ppmvd at 15 percent O₂.

6. Excess emissions from a turbine resulting from start up, shutdown, malfunction, fuel switch or load change shall be reported in accordance with 40 CFR 60.334(c) and accepted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24-hour period unless specifically authorized by the Department for a longer duration. The permittee shall provide a general description of the procedures to be followed during periods of start up, shutdown, malfunction, fuel switch or load change to ensure that the best operational practices to minimize emissions will be adhered to and the duration of any excess emissions will be minimized. The description should be submitted to the Department along with the initial compliance test data. The description may be updated as needed by submitting such update to the Department within thirty (30) days of implementation.

7. Excess emissions from fuel switching shall not exceed 15 minutes.

8. Excess emissions due to fuel bound nitrogen levels above 0.015 percent are allowed pursuant to Condition B.1 foot note (e) of the emission limitation table.

C. Performance Testing

1. Initial (I) compliance tests shall be performed on each CT using both fuels. Testing of emissions shall be conducted at 95-100% of the manufacturer's rated heat input based on the average ambient air temperature for the CT during the test. Annual (A) compliance tests shall be performed on the CT with the fuel(s) used for more than 400 hours in the preceding 12-month period. Tests at permit renewal shall also be performed on the non-PSD pollutants. Tests and procedures shall be in accordance with 40 CFR 60.335. Tests shall be conducted using EPA reference methods in accordance with 40 CFR 60, Appendix A, as adopted by reference in Chapter 62-297, F.A.C, and follows:

- a. Reference Method 5B for PM (I, A: for oil only; assumption is that all PM is PM₁₀).
- b. Reference Method 9 for VE (I, A).
- c. Reference Method 10 for CO (I, A).
- d. Reference Method 20 for NO_x (I, A) or Method 7E if sampling downstream of the heat recovery steam generator.
- e. Reference Method 18 or 25A for VOC (I, A).
- f. Reference Method 8 for H₂SO₄ Mist (I, A).
- g. Trace elements of Beryllium (Be) and Arsenic (As) shall be tested (I, for oil only) using EMTIC Interim Test Methods. As an alternative, EPA Method 104 for Be may be used; or, Be and As may be

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214A
(PA-89-25SA)

DRAFT

determined from fuel analysis using either Method 7090 or 7091 and sample extraction using Method 3040, as described in the EPA solid waste regulations SW 846.

h. ASTM D4294 (or equivalent) for sulfur content of distillate oil (I and A), which can be used for determining SO₂ emissions annually.

i. ASTM D1072-80, D3031-81, D4084-82, or D3246-81 (or equivalent) for sulfur content of natural gas (I; and, A if deemed necessary by the Department).

j. Other USEPA or DEP approved test methods for the permitted facilities may be used for compliance testing after departmental approval. Unless the permittee requests to modify a reference method, or to use a method for which a method was not designed, such approval shall not constitute an alternative test procedure under Section 62-297.620, F.A.C., or otherwise require modification of the permit.

2. The maximum sulfur content of the fuel oil shall not exceed 0.05 percent, by weight. Compliance shall be demonstrated in accordance with the requirements of 40 CFR 60.334(b).

3. As an alternative to Condition C.1.i above, natural gas supplier data for sulfur content may be submitted. However, the applicant is responsible for ensuring that the procedures above are used for determination of fuel sulfur content. Analysis may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency pursuant to 40 CFR 60.335(e) (1993 version). Any request for a future custom monitoring schedule shall be made in writing to the Department's Bureau of Air Regulation. Any custom schedule approved by the USEPA pursuant to 40 CFR 60.334(b) (1993 version) will be recognized as enforceable provisions of the permit.

D. Monitoring Requirements

Monitoring of operations shall be in accordance with 40 CFR 60.334. Also, and for each CT, the permittee shall install, operate, and maintain a continuous emission monitoring system (CEMS) to monitor nitrogen oxides in accordance with 40 CFR 60, Appendix F, and, if necessary, a diluent gas (CO₂ or O₂). The Federal Acid Rain Program requirements of 40 CFR 75 shall apply when those requirements are adopted and if applicable.

1. Each CEMS shall meet performance specifications of 40 CFR 60, Appendix B.

2. CEMS data shall be recorded and reported in accordance with Rule 62-297.500, F.A.C.; 40 CFR 60; and, 40 CFR 75, if it becomes applicable. The record shall include periods of start up, shutdown, load change, fuel switch, high fuel bound nitrogen, and malfunction.

3. A malfunction means any sudden and unavoidable failure of air pollution control equipment or process equipment to operate in a normal or usual manner. Failures that are caused entirely or in part by poor maintenance, careless

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214A
(PA-89-25SA)

DRAFT

operation or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions.

4. The procedures under 40 CFR 60.13 shall be followed for installation, evaluation, and operation of all CEMS. If applicable, 40 CFR 75 shall apply when the Federal Acid Rain Program is adopted.

5. For purposes of the reports required under this permit, excess emissions, as determined pursuant to Condition B.6 herein, are defined as any calculated average emission rate which exceeds the applicable emission limitation in Condition B.1.

E. Notification, Reporting and Recordkeeping

1. To determine compliance with the natural gas and fuel oil firing heat input limitation, the permittee shall maintain daily records of natural gas and fuel oil consumption for each turbine, and provide the heating value for each fuel during the compliance test. 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.

2. The project shall comply with all the applicable requirements of Chapters 62-210 through 62-297 and 62-4, F.A.C., and 40 CFR 60, Subparts A and GG. The requirements shall include:

- a. 40 CFR 60.7(a)(1) - By postmarking or delivering notification of the start of construction no more than 30 days after such date.
- b. 40 CFR 60.7(a)(2) - By postmarking or delivering notification of the anticipated date of the initial start up of each CT not less than 30 days prior to such date.
- c. 40 CFR 60.7(a)(3) - By postmarking or delivering notification of the actual start up of each turbine within 15 days after such date.
- d. 40 CFR 60.7(a)(5) - By postmarking or delivering notification of the date for demonstrating the CEMS performance, no less than 30 days prior to such date.
- e. 40 CFR 60.7(a)(6) - By postmarking or delivering notification of the anticipated date for conducting the opacity observations no less than 30 days prior to such date.
- f. 40 CFR 60.7(b) - By initiating a recordkeeping system to record the occurrence and duration of any start up, shutdown, load change, fuel switch, high fuel bound nitrogen, and malfunction of a turbine, malfunction of the air pollution control equipment, and the periods when the CEMS is inoperable.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214A
(PA-89-25SA)

DRAFT

- g. 40 CFR 60.7(c) - By postmarking or delivering a quarterly excess emissions and monitoring system performance report within 30 days after the end of each calendar quarter. This report shall contain the information specified in 40 CFR 60.7(c) and (d).
- h. 40 CFR 60.8(a) - By conducting all performance tests within 60 days after achieving the maximum turbine and boiler firing rates, but not more than 180 days after the initial start up of each CT.
- i. 40 CFR 60.8(d) - By postmarking or delivering notification of the date of each performance test required by this permit at least 30 days prior to the test date; and,
- j. Rule 62-297.345 - By providing stack sampling facilities for each turbine.
- k. All notifications and reports required by this specific condition shall be submitted to the Department's Southwest District office. Performance test results shall be submitted within 45 days of completion of such test.

3. The following information shall be submitted to the Department's Bureau of Air Regulation within 90 days after the permittee has made the selection of the following:

a. Description of the final selection of the turbines, SCR and CO oxidation catalyst control systems for installation at the facility. The descriptions shall include the specific make and model numbers and any changes in the proposed method of operation, fuels, emissions or equipment.

b. Description of the CEMS selected. The description shall include the type of sensors and the manufacturer and model numbers of the equipment.

4. The following protocols shall be submitted to the Department's Southwest District office for approval:

a. CEMS Protocol - Within 120 days after selection of the CEMS, but 180 days prior to the initial startup, a CEMS protocol describing the system, its installation, operating and maintenance characteristics and requirements. The protocol shall meet the requirements of 40 CFR 60.13, Appendix B and Appendix F or 40 CFR 75, and be approved within 60 days.

b. Performance Test Protocol - At least 90 days prior to conducting the initial performance tests required by this permit, the permittee shall submit to the Department's Southwest District office a protocol outlining the procedures to be followed, the test methods and any differences between the reference methods and the test methods proposed to be used to verify compliance with the conditions of this permit. The Department shall approve the testing protocol within 60 days provided that it meets the requirements of this permit.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214A
(PA-89-25SA)

DRAFT

c. Heat Input Curves - Within 120 days after final selection of the turbine, but 180 days prior to initial startup of the turbine, manufacturer's curves or equations of heat input and NOx emission rate (lbs/hr) corrections to other temperatures shall be provided to the Department.

d. Subject to the approval by the Department for technical validity while applying sound engineering principles, the manufacturer's curves shall be used to establish the heat input rates over a range of temperatures for the purposes of compliance determination.

F. Modifications

The permittee shall give written notification to the Department when there is any modification to this facility pursuant to Rule 62-212.200, F.A.C., Definitions - Modifications. This notice shall be submitted sufficiently in advance of any critical date involved to allow sufficient time for review, discussion, and revision of plans, if necessary. Such notice shall include, but not be limited to, information describing the precise nature of the change; modifications to any emission control system; production capacity of the facility before and after the change; and, the anticipated completion date of the change.

G. No. 2 Fuel Oil Storage Tank

The permittee shall be in compliance with the monitoring requirements of 40 CFR 60.116b(a) and (b).

H. Additional General Conditions

1. Pursuant to Rule 62-4.090, F.A.C., the permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation prior to 60 days before the expiration of the permit.

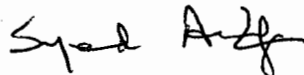
2. An application for an operation permit pursuant to Rule 62-4.220, F.A.C., is not required if the facility is also certified under the Power Plant Siting Act, Chapter 403, Part II, F.S. That certification serves as the operation permit also. The permittee must submit an application for an operation permit for a major source of pollution pursuant to Chapter 62-213, F.A.C.

3. If site construction does not commence within 18 months of issuance of this permit, then Seminole shall obtain from the Department a review and, if necessary, a modification of the BACT determination and allowable emissions for the unit(s) on which construction has not commenced [40 CFR 52.21(r)(2)].

Memorandum

Florida Department of Environmental Protection

TO: Clair Fancy

FROM: Syed Arif 

DATE: April 28, 1999

SUBJECT: Seminole Electric Cooperative, Inc. Hardee Power Station
PSD-FL-214A Combined Cycle Facility

Attached is the Public Notice and draft permit modification to install a Selective Catalytic Reduction (SCR) system and a carbon monoxide oxidation catalyst control system at its Combined Cycle Facility which will be located near Bowling Green, Hardee County.

The changes will allow Seminole to meet its revised NO_x commitment with SCR and based on the operating experience with SCR the NO_x limit can be further lowered to 9 ppmvd. Seminole has also agreed to install an oxidation catalyst control system to meet the established CO limits in the permit.

Other changes in the permit reflect the technical specifications of the Westinghouse 501 FD versus the Westinghouse 501F units originally proposed at the site. These include a higher heat input rate and total power generation capability of 488 megawatts (MW) versus 440 MW.

I recommend your approval and signature.

SA/a

Attachments

February 11, 1999

Hamilton S. Oven, Administrator
Siting Coordination Office
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RECEIVED

FEB 15 1999

**BUREAU OF
AIR REGULATION**

Re: Seminole Electric Cooperative, Inc.;
Hardee Power Station Unit 3 (Payne Creek Generating Station);
PPSA No. 89-25SA,
Request for Modification of Certification.

Dear Mr. Oven:

Seminole Electric Cooperative, Inc. (Seminole) hereby requests a modification of the Site Certification for the Hardee Power Station Unit 3, pursuant to Section 403.516(1)(b), Florida Statutes (F. S.). That certification was issued by the Siting Board in August, 1995, authorizing the construction and operation of a 440 MW combined cycle unit at the Hardee Power Station site in Hardee County, Florida. Seminole is in the process of commencing construction of the Hardee Power Station Unit 3. Based upon the Siemens-Westinghouse combustion turbine (CT) finally selected for this facility, Seminole has identified several necessary modifications to the existing certification to conform to the selected combustion turbine.

Several changes to the separate Prevention of Significant Deterioration (PSD) permit are needed to address the selected CT and related equipment. Pursuant to Condition of Certification XXVIII.C., Modification of Conditions (at page 59 of the Conditions), the "Certification shall be automatically modified to conform to any subsequent DEP-issued amendments, modifications, or renewals of the separately-issued Prevention of Significant Deterioration (PSD) permit ... for the project and the conditions of such permit shall be controlling over these Conditions of Certification." Therefore, once the Department modifies the separate PSD permit to address the selected CT, the PPSA conditions of certification would be modified accordingly. Attached as Exhibit A are proposed revisions to the Conditions of Certification to reflect the requested changes to the PSD permit and the other matters discussed herein.

Second, the selected Siemens-Westinghouse combustion turbines and the associated heat recovery steam generators and steam turbine will result in an increase in electrical output of approximately 48 MW above the initially identified 440 MW of capacity for the Hardee Power Station Unit 3. This increase in electrical output is the result of improvements and refinements to the Siemens-Westinghouse combustion turbine and the heat recovery steam generator since the original 501F CT was identified in the Site Certification Application for this facility. The increase in megawatts

from 440 MW to 488 MW necessitates a modification of the certification for an increase in both the capacity of Unit 3 and the ultimate site capacity for the Hardee Power Station site. The additional 48 MW in Unit 3 will increase the capacity of Unit 3 from 440 MW to 488 MW. It also increases the ultimate site capacity from 880 MW to 928 MW. All of the increase in megawatts is attributed to Unit 3. The increase in ultimate site capacity to 928 MW will preserve the previously-identified 145 MW of capacity for the buildout of Hardee Power Station Unit 2.

However, the increase in megawatts will not result in any increase in environmental impacts from the operation of any of the existing or planned units at the site. The increase in megawatts for Unit 3 will not result in any increase in air emissions or air quality impacts from the facility. All of the existing permit limits for the Hardee Unit 3 will be met, even with the increase in electrical output. Seminole has determined that the existing cooling pond is adequate to accommodate any increase in thermal load resulting from the increase in megawatts. There will be no change in the quality of the discharges from the cooling pond, either to surface waters or ground waters. There will be no increase in water use for cooling or process water needs beyond the currently-approved allocation. The construction and operation of Unit 3 will comply with all other Conditions of Certification. The 928 MW of ultimate capacity, therefore, would still fall within the envelope of environmental impacts contemplated for the 880 MW ultimate site capacity.

Based on final design information provided by Siemens-Westinghouse, Seminole has determined that it will be necessary to install a selected catalytic reduction system to meet the existing permit limits for nitrogen oxide (NOx) emissions. To date, Siemens-Westinghouse has not been successful in providing a dry-low NOx combustor system adequate to meet the 15 ppm limits established under the certification and PSD permit. Thus, consistent with Conditions of Certification II.B.3. Seminole "will install a dry-low NOx combustor system or an equivalent system on each CT", with SCR being that equivalent system. Seminole therefore proposes that this Condition of Certification be clarified to reflect that SCR will be used as the equivalent system, in addition to the dry-low NOx combustors that Siemens-Westinghouse will also supply for this facility. A similar change has been requested for the PSD permit. Seminole further has agreed to operate the SCR system at 12 ppm or less during an initial 12 month evaluation period following unit startup, after which the system will be operated in order to achieve an emission rate of 9 ppm. A modification to reflect this commitment is set forth in Attachment A.

Third, due to the passage of time, it is appropriate to revise several of the Conditions of Certification that establish deadlines for post-certification submittals and other reports on the project. These conditions relate to water conservation and water reuse feasibility studies and to traffic monitoring for the project. Because the project will commence actual onsite construction at the Hardee Power Station site around March, 2000¹ and the new unit will go into service in the summer of 2002, Seminole suggests that several reporting dates in the conditions be revised to reflect these dates. Specifically, Condition of Certification IV.M.3. (at page 28 of the Conditions) provides that "by January 1, 2002, SECI shall submit for approval by the [SWFWMD] permitting department director, resource regulation, a water conservation plan for the purposes of documenting the current groundwater use for Hardee Unit 3's water use operations, and the

¹Final engineering and design of the project will begin in late summer 1999, and major equipment will be ordered in the same time period.

existing and proposed water conservation programs which are, or will be implemented to conserve groundwater at the plant." Because the unit will not begin actual commercial operation until June, 2002, Seminole proposes that the January 1, 2002 date be revised to June 1, 2004. This would allow two years of plant operation to establish the groundwater use for the facility and the water conservation programs the facility will implement. We believe the two year time frame is consistent with the original date for this Condition. In addition, Condition of Certification IV.Q. (at page 3) provides that "SECI shall continue to investigate the feasibility of using reclaimed water as a water source and submit an updated report describing the feasibility to the Permits Data Section of the District [SWFWMD] by January 1, 2002." Seminole similarly requests that the date for this report be extended to June 1, 2004 to allow two years of operation before this report is submitted. The third condition with a monitoring or reporting date is Condition of Certification XXXV., Transportation (at page 62), providing that "monitoring of the intersection of State Road 37/County Road 630 is to commence at such time as the total number of construction employees reaches 344 persons or June 1, 1997, whichever occurs first. Monitoring on an annual basis shall continue to February 1998, or until the number of employees is again below 344, whichever occurs last." Again, because of the later start of construction of the facility, Seminole suggests that the June 1, 1997 date be revised to June 1, 2000 and the February 1998 date be revised to February 2001.

Fourth, Seminole is in the process of seeking a dredge and fill permit from the U.S. Army Corps of Engineers (USACE) for the wetland impacts associated with onsite construction. Seminole anticipates that the USACE may require additional mitigation for wetland impacts beyond those previously identified in the Certification. This may occur because the USACE's wetland jurisdiction at the Project site exceeds that of FDEP and SWFWMD. Seminole may therefore need FDEP approval for additional onsite wetland mitigation beyond that identified in the plans submitted during the PPSA certification proceeding.

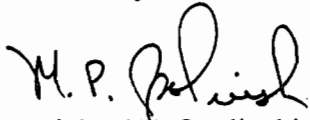
Condition V.B. provides, in part, that "any alterations to the construction design that impacts wetlands or any alterations to the mitigation design shall require prior approval from the department." (e.a.) Seminole believes that this condition already authorizes the Department to approve any necessary alterations to the mitigation plan to address any increased -mitigation required by the USACE. However, Seminole wishes to advise the Department and the other parties to this certification of this possible need to revise or expand the current wetland mitigation plans. Seminole expects that it will undertake the original mitigation design, and will either expand that existing plan or develop additional mitigation as may be required by the USACE.

Last, Seminole has formally named its Hardee Station Unit 3 the "Payne Creek Generating Station". Seminole therefore requests that the Department reflect this name in future formal actions concerning this generating plant.

Therefore, Seminole requests that the Department revise the Conditions of Certification for the Payne Creek Generating Station (or the Hardee Power Station Unit 3) as described above and as identified specifically in Attachment A to this request. Enclosed with this's request is a check in the amount of \$ 10,000 made payable to the Department as the required modification fee under Section 403.516, F.S., and Rule 62-17.293(c), F.A.C. Copies of this modification request are being distributed to all parties to the original certification concurrent with this submittal.

Should you, any other Department staff, or any other parties have any questions concerning this modification, please contact either Mike Roddy or myself at 813-963-0994. We will be happy to provide any further information which you may find necessary.

Sincerely,

A handwritten signature in black ink, appearing to read "M. P. Opalinski".

Michael P. Opalinski
Director of Environmental Affairs

cc: Scott Goorland, FDEP
All parties of record (list attached)

Attachment

cc: S. aiy, BARR

Payne Creek Generating Station
Certification Parties of Record

Mr. Scott A. Goorland
Assistant General Counsel
Dept. of Environmental Protection
3900 Commonwealth Blvd.
Tallahassee, FL 32399-3000

Mark Carpanini, Esq.
Office of the County Attorney
Polk County
P. O. Box 9005
Bartow, FL 33831-9005

Mr. Andrew Grayson
Assistant General Counsel
Dept. of Community Affairs
2555 Shumard Oak Blvd.
Tallahassee, FL 32399-2100

Mr. Brian Sodt
Central Florida Reg. Planning Council
555 East Church Street
Bartow, FL 33930

Robert V. Elias, Esq.
Florida Public Service Commission
Gerald Gunter Building
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

Mr. Lawrence N. Curtin
Holland & Knight
Post Office Drawer 810
Tallahassee, FL 32303-0810

Mr. Sheauching Yu
Assistant General Counsel
Dept. of Trans., Haydon Burns Bldg.
605 Suwannee Street, MS58
Tallahassee, FL 32399-0450

Douglas S. Roberts, Esq.
Hopping Green Sams & Smith, P.A.
P. O. Box 6526
Tallahassee, FL 32314

Mr. Richard Tschantz
Assistant General Counsel
Southwest Florida Water, Mgmt. Dist.
2379 Broad Street
Brooksville, FL 34609-6899

Mr. James V. Antista, General Counsel
Game and Fresh Water Fish Commission
Bryant Building
620 South Meridian Street
Tallahassee, FL 32399-1600

Mr. Gary Alan Vorbeck
Hardee County Attorney
Vorbeck & Vorbeck, P.A.
207 E. Magnolia Street
Arcadia, FL 33821



P.O. Box 273000
Tampa, FL 33688

VOID AFTER 90 DAYS

CELEBRATING
YEARS
1948-1998
SERVING OUR MEMBER SYSTEMS

NB- 036266

DATE

01/08/99

NationsBank

NationsBank of Georgia, N. A.
Atlanta, DeKalb County, Georgia

611

CHECK NO.

00036266

NET AMOUNT

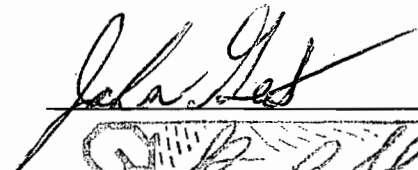
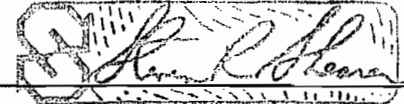
*****10,000.00

PAY

TEN THOUSAND AND 00/100 DOLLARS

TO THE
ORDER
OF

FLORIDA DEPT OF ENVIRONMENTAL
PROTECTION
BUREAU OF FINANCE & ACCOUNTING
P O BOX 3070
TALLAHASSEE, FL 32315-3070

Jela Nes



[Redacted line]

State of Florida Department of Environmental Protection
Seminole Electric Cooperative, Inc.
Hardee Power Station Unit #3
PA 89-25SA

CONDITIONS OF CERTIFICATION

April 18, 1995

II. AIR

The construction and operation of the project shall be in accordance with all applicable provisions of Chapters 62-210 thru 62-297 and 62-4, Florida Administrative Code (F.A.C.), and 40 CFR 60, Subpart GG, Appendix A, Appendix B, and Appendix F (1994 version). The following emission limitations and conditions reflect the BACT determinations for the ~~300~~ 315 megawatts (MW; two ~~150~~ 157.5 MW (nominal) combined cycle combustion turbines) of generating capacity. Each combustion turbine (CT) will be connected to a heat recovery steam generator (HRSG), which will recover the waste heat to produce steam for utilization in a single 140 MW (net) steam generator. There is no fuel firing in the associated HRSG. The facility will have a total nominal generating capacity of ~~440~~ 488 MW (net) (nominal). In addition to the foregoing, the project shall comply with the following conditions of certification as indicated.

A. General Requirements

1. Pursuant to Rule 62-212.200(56), F.A.C., Potential to Emit (PTE), the maximum heat input to each combustion turbine at an ambient temperature of 32°F, shall neither exceed ~~1,862~~ 1,962 MMBtu/hr while firing natural gas nor ~~1,965~~ 1,888 MMBtu/hr while firing fuel oil.
2. Pursuant to Rule 62-212.200(56), F.A.C., PTE, the CTs may operate continuously, i.e., 8,760 hrs/year.
3. Pursuant to Rule 62-212.200(56), F.A.C., PTE, only natural gas or No. 2 fuel oil is allowed to be fired in the CTs. The maximum sulfur content limit of the No. 2 fuel oil shall not exceed 0.05 percent, by weight.
4. Pursuant to Rule 62-212.200(56), F.A.C., PTE, the maximum No. 2 fuel oil consumption allowed to be burned is 41,751,000 gallons per year, which is equivalent to 1500 hours per CT per year of operation at full-load (not to exceed 3,000 hrs/yr between the two CTs). The No. 2 fuel oil is to be used as a back-up fuel only.
5. Pursuant to Rule 62-296.310(3), F.A.C., Unconfined Emissions of Particulate Matter (PM), the emissions of unconfined PM shall be minimized during the construction period by covering or watering dust generating areas.

B. Emission Limits

1. Pursuant to Rule 62-212.410, F.A.C., BACT, the maximum allowable emission limitations from two CTs, when firing natural gas or No. 2 fuel oil, shall not exceed the following:

MAXIMUM ALLOWABLE EMISSION LIMITATIONS					
POLLUTANT	FUEL	CONCENTRATION	lbs/hr ^a	TPY ^b	TPY(TOTAL) ^c
NOx	Gas	15-12ppmvd ^d	106 91	931 797	1212 1066
	Oil	42 ppmvd ^e	336	504	
CO	Gas	20 ppmvd	71	622	618
	Oil	25 ppmvd	91	136	
PM/PM ₁₀	Gas		7	65	147
	Oil		67	100	
SO ₂	Gas		5	47	182
	Oil		101	152	
VOC	Gas	5 ppmvd	10	88	99
	Oil	10 ppmvd	21	31	
Sulfuric Acid Mist	Gas		1	6	39
	Oil		22	34	
Beryllium	Oil		0.0049	0.007	0.007
Arsenic	Oil		0.0097	0.014	0.014
Visible Emissions	Gas	≤ 10 percent opacity			
	Oil	≤ 10 percent opacity			

- (a) The emission limitations in lbs/hr/CT are a 1-hour average as determined pursuant to the Performance Testing conducted pursuant to Condition II.C below.
- (b) The annual emission limitations (TPY) for natural gas are based on two CTs operating at full load for 8,760 hours per year. The annual emission limitations (TPY) for fuel oil are based on the equivalent of full-load operation for a maximum of 1500 hours per year for each of the two CTs (not to exceed 3,000 hrs/yr between the two CTs). The emission calculations are also based at a worst case ambient temperature of 32°F.
- (c) Maximum allowable emissions from two CTs if any fuel oil is burned at the facility during the year. The emission calculations are also based at an ambient temperature of 59°F.
- (d) The natural gas NOx allowable emission limitation of 15 ppmvd is corrected to 15 percent O₂. Compliance shall be determined through the initial and annual compliance tests.
- (e) The fuel oil NOx allowable emission limitation of 42 ppmvd is corrected to 15 percent oxygen. Compliance shall

2. The following estimated CT emissions are tabulated for PSD tracking purposes only:

ESTIMATED EMISSIONS		
POLLUTANT	FUEL	TPY
Lead	Oil ^{a,b}	0.16
Fluoride	Oil ^{a,b}	0.090
Mercury	Gas ^c	0.0003
	Oil ^{a,b}	0.024

(a) The annual emission limitations (TPY) for fuel oil are based on full-load operation for a total of 3,000 hours per year between the two CTs at an ambient temperature of 59°F.

(b) The No. 2 fuel oil shall have a maximum sulfur content limit of 0.05 percent, by weight.

(c) The annual emission limitation (TPY) for natural gas is based on two CTs operating at full-load for 8,760 hours per year at an ambient temperature of 59°F.

3. The permittee will install a dry low-NOx combustor system or an equivalent system (i.e., selective catalytic reduction) on each CT. The permittee shall make every practicable effort to achieve the lowest possible NOx emission rate, but must not exceed ~~15~~ 12 ppmvd at 15 percent O₂ per CT on a continuous basis when firing natural gas.
4. After the initial compliance tests on the CTs, the permittee shall operate a certified continuous emissions monitor for NOx emissions and collect 12 months of monitoring data. The monitor will, at a minimum, meet the requirements of 40 CFR 60, Appendix F's quality assurance procedures. Within ~~18~~ 12 months after the initial compliance test, the permittee shall prepare and submit for the Department's review an engineering report regarding the collection and the analysis of the data gathered from the monitor. In addition, this report shall include a conclusion regarding the lowest NOx emission rate that can be consistently achieved with a reasonable operating margin, taking into account long-term performance expectations

and assuming good operating and maintenance practices. The report shall also include results of the testing requirements of 40 CFR 60, Appendix F or 40 CFR 75 quality assurance procedures and the actual CEMS data for the period of the study in an acceptable format.

5. The Department will make a determination as to whether to seek to revise the permitted NO_x emission limitation and will base it on the engineering data report submitted by the permittee. If the data demonstrate that a NO_x emission rate of less than ~~±5~~ 12 ppmvd at 15 percent O₂ is consistently achievable, the NO_x emission limit may be adjusted accordingly, but not lower than 9 ppmvd at 15 percent O₂.
6. Excess emissions from a turbine resulting from start up, shutdown, malfunction, fuel switch, or load change shall be reported in accordance with 40 CFR 60.334(c) and accepted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24-hour period unless specifically authorized by the Department for a longer duration. The permittee shall provide a general description of the procedures to be followed during periods of start up, shutdown, malfunction, fuel switch, or load change to ensure that the best operational practices to minimize emissions will be adhered to and the duration of any excess emissions will be minimized. The description should be submitted to the Department along with the initial compliance test data. The description may be updated as needed by submitting such update to the Department within thirty (30) days of implementation.
7. Excess emissions from fuel switching shall not exceed 15 minutes.
8. Excess emissions due to fuel bound nitrogen levels above 0.015 percent are allowed pursuant to condition B.1 foot note (e) of the emissions limitation table.

C. Performance Testing

1. Initial (I) compliance tests shall be performed on each CT using both fuels. Testing of emissions shall be conducted at 95-100% of the manufacturer's rated heat input based on the average ambient air temperature for the CT during the test. Annual (A) compliance tests shall be performed on the CT with the fuel(s) used for more than 400 hours in the preceding 12-month period. Tests at permit renewal shall also be performed on the non-PSD pollutants in condition B above. Tests and procedures shall be in accordance with 40 CFR 60.335. Tests shall be conducted using EPA reference methods in accordance with 40 CFR 60, Appendix A, as adopted by reference in

certificate or may require SECI to submit water samples when SWFWMD determines there is a potential for adverse impacts to water quality.

L. SWFWMD Access

SECI shall provide access to an authorized SWFWMD representative to enter the property at any reasonable time to inspect the facility and make environmental or hydrologic assessments. SECI shall either accompany SWFWMD staff onto the property or make provision for access onto the property.

M. Conservation

1. SECI shall cease or reduce withdrawal as directed by SWFWMD if water levels in aquifers fall below the minimum levels established by the SWFWMD Governing Board.

SECI shall practice water conservation to increase the efficiency of transport, application, and use, as well as to decrease waste and to minimize runoff from the property. At such time as the SWFWMD Governing Board adopts specific conservation requirements for SECI's water use classification, SECI shall be subject to those requirements upon notice and after a reasonable period for compliance.

2. Any wells not in use, and in which pumping equipment is not installed shall be capped or valved in a water tight manner in accordance with Rule 62-532.500(3) (a)4, F.A.C.
3. By ~~January 1, 2002~~ June 1, 2004, SECI shall submit for approval by the Permitting Department Director, Resource Regulation, a water conservation plan for the purposes of documenting the current groundwater use for Hardee Unit 3's water use operations, and the existing and proposed water conservation programs which are, or will be implemented to conserve groundwater at the plant. The plan shall address the following:

a. Current Plant Operation

- 1) For groundwater and recycled surface water sources, document the processes which use water, and the magnitude of the use.

Permitting Department Director, Resource Regulation, designed to demonstrate that water table drawdown does not exceed one foot under on-site wetlands that will not be disturbed.

- 2) Collection of water table level data after construction of the approved monitoring well network for at least six months prior to the initiation of dewatering in the area, to obtain background data. During this time period, water level data shall be recorded on a weekly basis and submitted monthly.
- 3) If a rim-ditch system is proposed to recharge the water table near on-site wetlands that will not be disturbed, design and operation details must be submitted to demonstrate that the water table will be maintained at appropriate levels based on the background data collected. Rim-ditch systems must also be accompanied by a monitoring well network to verify water table maintenance.
- 4) At least one month prior to the anticipated date of dewatering an area within the setback distance, water level data shall be recorded and submitted on a weekly basis.
- 5) Data collection shall continue for six months following completion of dewatering and reclamation or until SWFWMD staff determine that background or steady-state levels are attained. During this time period, water level data shall be recorded on a weekly basis and reported monthly. Water levels shall be reported in feet relative to the National Geodetic Vertical Datum (N.G.V.D.)

Q. Alternative Source Investigation

SECI shall continue to investigate the feasibility of using reclaimed water as a water source and submit an updated report describing the feasibility to the Permits Data Section of the District by ~~January 1, 2002~~ June 1, 2004. The report shall contain an analysis of reclaimed water sources for the area, including the relative location of these sources to SECI's property, the quantity of reclaimed water available, the projected date(s) of availability, costs associated with obtaining the reclaimed water, and an implementation schedule for reuse, if feasible. Infeasibility shall be supported with a detailed explanation.

XXXV. TRANSPORTATION

Monitoring of the intersection of State Road 37/County Road 630 is to commence at such time as the total number of construction employees reaches 344 persons or June 1, ~~1997~~2000, whichever occurs first. Monitoring on an annual basis shall continue to February ~~1998~~2001, or until the number of employees is again below 344, whichever occurs last. Should the monitoring identify needed improvements to maintain an acceptable level of service, SECI shall be responsible for the proportion of the improvements which can be attributed to the impact of the Hardee Unit 3 facility (Section 9J-5.0055, F.A.C.).

XXXVI. EMERGENCY RESPONSE

A. Violent Weather

The Permittee shall prepare a violent weather component of the Facility's emergency response plan and submit it to Hardee and Polk Counties, DEP, and DCA for approval prior to start of commercial operation. This plan shall include measures to coordinate with local emergency management authorities in the event of violent weather or a berm breach. Hardee and Polk County emergency response personnel shall be invited to participate in safety drills and exercises conducted by the plant operator.

B. Fire

The Permittee shall prepare a fire emergency component of the emergency response plan and submit it to Hardee and Polk Counties for approval prior to the start of commercial operation. This plan shall include measures to coordinate with local fire, police and emergency management authorities in the event of a fire.

C. Spill Response

The facility's emergency response plan and spill prevention, containment and contingency plan shall be reviewed and updated regularly by the Permittee to include the names and telephone numbers of state and local emergency response contact persons.



CELEBRATING
YEARS
1948-1998
SERVING OUR MEMBER SYSTEMS

RECEIVED

DEC 23 1998

BUREAU OF
AIR REGULATION

December 21, 1998

Mr. Syed Arif
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Dear Syed:

This letter is written in order to clarify our recent discussions concerning the use and operation of SCR at the Hardee Unit 3 facility. Seminole Electric Cooperative, Inc. (SECI) will be installing an SCR system in order to meet the NO_x limits contained in our existing PSD Permit (PSD-FL-214). SECI will operate this system to achieve a NO_x level of 12 ppmvd or less for a period of 18 months from the initial compliance test. Within this 18 month evaluation period, an engineering report will be prepared and submitted for the Department's review. This report will include a conclusion regarding the lowest NO_x emission rate that can be consistently achieved with a reasonable operating margin, taking into account long-term performance expectations and assuming good operating and maintenance practices. If the data demonstrates that a NO_x emission rate of less than 12 ppmvd at 15 percent O₂ is consistently achievable, the NO_x emission limit will be adjusted accordingly, but not lower than 9 ppmvd at 15 percent O₂.

In addition to the operating scenario described above, SECI will furnish the Department with certification documentation that the SCR system is designed to achieve a NO_x emission rate of at least 9 ppmvd at 15 percent O₂.

In order to facilitate the required changes to the existing PSD Permit, we have attached a marked-up version of the current permit, indicating the appropriate changes to reflect the selected Siemens-Westinghouse combustion turbine. Thank you very much for your assistance in handling this matter and if you have any questions please do not hesitate to call.

Sincerely,

Mike Roddy
Environmental Engineer

cc: SWD
EPA
NPS
Pat Comer, OGC

cc: Al Linero (FDEP)
Hamilton Owen (FDEP)
Mike Opalinski (SECI)



Department of Environmental Protection

12-21-98
wma

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

PERMITTEE:
Seminole Electric Cooperative
Incorporated
P.O. Box 272000
Tampa, FL 33688-2000

Permit Number: PSD-FL-214
(PA-89-25SA)
Expiration Date: January 1, 2000
County: Polk & Hardee
Latitude/Longitude: 27°38'30"N
81°57'45"W
Project: ~~440~~⁴⁸⁸ MW Combined Cycle
Power Plant

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-212 and 62-4. 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 specifically described as follows:

For a ~~440~~⁴⁸⁸ MW (nominal) combined cycle power plant consisting of two ~~150~~^{157.5} MW (nominal) combustion turbines (CTs), two heat recovery steam generators (HRSGs), a ~~140~~¹⁷³ MW steam turbine generator and a 4.4 million gallon fuel oil storage tank. The maximum heat input at 32°F is ~~1,862~~¹⁷⁶² MMBtu/hr/CT (natural gas) and ~~1,965~~¹⁸⁸⁸ MMBtu/hr/CT (oil). The plant will be located at the Polk and Hardee County site near Bowling Green, Florida which is also the site of a 295 MW power plant which is operated by TECO Power Services. The combustion turbines are to be Westinghouse Model 501F or equivalent and equipped with dry low NO_x combustors or an equivalent system for natural gas firing and wet injection for fuel oil firing. The CT will be fired with natural gas and No. 2 low sulfur fuel oil with a sulfur content limit not to exceed 0.05 percent, by weight, as a back-up only. (i.e. SCA)

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:

1. Seminole Electric Cooperative Incorporated's (SECI) application received May 9, 1994.
2. Department's letters dated June 27, September 21, and November 16, 1994.
3. SECI's letters dated August 26, October 6, and November 23, 1994.
4. SECI's letter dated February 9, 1995.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

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, F.S. 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), F.S., 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 acknowledgment 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 F.S. and Department rules, unless specifically authorized by an order from the Department.
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.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

GENERAL CONDITIONS:

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 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 F.S. or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, F.S. 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 F.S. after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by F.S. or Department rules.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

GENERAL CONDITIONS:

11. This permit is transferable only upon Department approval in accordance with Rules 62-4.120 and 62-730.300, 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 (NSPS)

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.
- 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.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

GENERAL CONDITIONS:

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:

The construction and operation of the project shall be in accordance with all applicable provisions of Chapters 62-210 through 62-297 and 62-4, Florida Administrative Code (F.A.C.), and 40 CFR 60, Subpart GG, Appendix A, Appendix B, and Appendix F (1994 version). The following emission limitations and conditions reflect the BACT determinations for the 300 megawatts (MW; two 150 MW combined cycle combustion turbines) of generating capacity. Each combustion turbine (CT) will be connected to a heat recovery steam generator (HRSG), which will recover the waste heat to produce steam for utilization in a single 140 MW (net) steam generator. There is no fuel firing in the associated HRSG. The facility will have a total nominal generating capacity of 440 MW (net). In addition to the foregoing, the project shall comply with the following Specific Conditions:

A. General Requirements

1. Pursuant to Rule 62-212.200(56), F.A.C., Potential to Emit (PTE), the maximum heat input to each Westinghouse 501F CT, or equivalent, at an ambient temperature of 32°F, shall neither exceed 1,862 MMBtu/hr while firing natural gas nor 1,965 MMBtu/hr while firing fuel oil.
2. Pursuant to Rule 62-212.200(56), F.A.C., PTE, the CTs may operate continuously, i.e., 8,760 hrs/year.
3. Pursuant to Rule 62-212.200(56), F.A.C., PTE, only natural gas or No. 2 fuel oil is allowed to be fired in the CTs. The maximum sulfur content limit of the No. 2 fuel oil shall not exceed 0.05 percent, by weight.
4. Pursuant to Rule 62-212.200(56), F.A.C., PTE, the maximum No. 2 fuel oil consumption allowed to be burned is 41,751,000 gallons per year, which is equivalent to 1500 hours per CT per year of operation at full load(not to exceed 3,000 hrs/yr between the two CTs). The No. 2 fuel oil is to be used as a back-up fuel only.
5. Pursuant to Rule 62-296.310(3), F.A.C., Unconfined Emissions of Particulate Matter (PM), the emissions of unconfined PM shall be minimized during the construction period by covering or watering dust generating areas.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

B. Emission Limits

1. Pursuant to Rule 62-212.410, F.A.C., BACT, the maximum allowable emission limitations from two CTs, when firing natural gas or No. 2 fuel oil, shall not exceed the following:

MAXIMUM ALLOWABLE EMISSION LIMITATIONS

<u>POLLUTANT</u>	<u>FUEL</u>	<u>CONCENTRATION</u>	<u>lbs/hr (a)</u>	<u>TPY (b)</u>	<u>TPY (TOTAL) c</u>
NO _x	Gas	~~15~~ ¹² ppmvd(d)	~~106~~ ⁹¹	~~931~~ ⁷⁹⁷	~~1212~~ ¹⁰⁶⁶
	Oil	42 ppmvd(e)	336	504	
CO	Gas	20 ppmvd	71	622	618
	Oil	25 ppmvd	91	136	
PM/PM ₁₀	Gas		7	65	147
	Oil		67	100	
SO ₂	Gas		5	47	182
	Oil		101	152	
VOC	Gas	5 ppmvd	10	88	99
	Oil	10 ppmvd	21	31	
Sulfuric Acid Mist	Gas		1	6	39
	Oil		22	34	
Beryllium	Oil		0.0049	0.007	0.007
Arsenic	Oil		0.0097	0.014	0.014
Visible Emissions	Gas		≤ 10 percent opacity		
	Oil		≤ 10 percent opacity		

(a) The emission limitations in lbs/hr/CT are a 1-hour average as determined pursuant to the Performance Testing conducted pursuant to Condition C.1 below.

(b) The annual emission limitations (TPY) for natural gas are based on two CTs operating at full load for 8,760 hours per year. The annual emission limitations (TPY) for fuel oil are based on the equivalent of full-load operation for a maximum of 1500 hours per year for each of the two CTs (not to exceed 3,000 hrs/yr between the two CTs). The emission calculations are also based at a worst case ambient temperature of 32°F.

(c) Maximum allowable emissions from two CTs if any fuel oil is burned at the facility during the year. The emission calculations are also based at an ambient temperature of 59°F.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-258A)

SPECIFIC CONDITIONS:

- (d) The natural gas NO_x allowable emission limitation of 15 ppmvd is corrected to 15 percent O₂. Compliance shall be determined through the initial and annual compliance tests.
- (e) The fuel oil NO_x allowable emission limitation of 42 ppmvd is corrected to 15 percent oxygen. Compliance shall be determined through the initial and annual compliance tests. The annual compliance test will be required if the fuel oil is fired for more than 400 hours in the preceding 12-months.

For fuel oil firing, NO_x emissions of 42 ppmvd @ 15 percent O₂ are based on fuel bound nitrogen (FBN) content of 0.015 percent by weight or less. When FBN levels are above this percentage, the CTs may produce higher NO_x concentrations due to increased fuel NO_x formation. When FBN levels are above 0.015 percent, the operator shall employ all reasonable measures to maintain the NO_x concentrations below 42 ppmvd. However, NO_x emissions (ppmvd and lb/hr), as calculated from the formula below, shall be allowed if the permittee submits data (FBN levels from most recent fuel shipment or as fired fuel sampling and hourly averages of: fuel rate, heat rate, ambient conditions, and NO_x control system parameters) which demonstrates that emissions (hourly averages) above 42 ppmvd are due solely to FBN levels above 0.015 percent.

The emission level for NO_x is adjusted for higher fuel nitrogen contents up to a maximum of 0.030 percent by weight as follows:

FUEL BOUND NITROGEN %(by weight)	NO _x LEVELS (ppmvd @ 15% O ₂)	NO _x EMISSIONS (lb/hr/CT) ¹	NO _x EMISSIONS INCREASE (TPY) ¹
0.015 or less	42	336.2	0
0.020	44	352.1	0
0.020	46	368.2	0
0.030	48	384.2	0

1 - From 336.2 lb/hr/CT at 32⁰F basis.

For intermediate values of FBN use the formula:

$$STD = 0.0042 + F$$

where,

STD = allowable NO_x emissions (ppmvd @ 15% O₂)

F = NO_x emission allowance for fuel bound nitrogen

and

N (fuel bound nitrogen), is defined as follows:

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

N (% by weight)	F (NO _x % by volume)
0 < N ≤ 0.015	0
0.015 < N ≤ 0.030	0.04 (N-0.015)
0.030 < N	0.0006

2. The following estimated CT emissions are tabulated for PSD tracking purposes only:

ESTIMATED EMISSIONS

<u>POLLUTANT</u>	<u>FUEL</u>	<u>TPY</u>
Lead	Oil(a,b)	0.16
Fluoride	Oil(a,b)	0.090
Mercury	Gas(c)	0.0003
	Oil(a,b)	0.024

- (a) The annual emission limitations (TPY) for fuel oil are based on full-load operation for a total of 3,000 hours per year between the two CTs at an ambient temperature of 59°F.
- (b) The No. 2 fuel oil shall have a maximum sulfur content limit of 0.05 percent, by weight.
- (c) The annual emission limitation (TPY) for natural gas is based on two CTs operating at full-load for 8,760 hours per year at an ambient temperature of 59°F.

3. The permittee ^(12:5CA) will install a dry low-NO_x combustor system or an equivalent system on each CT. The permittee shall make every practicable effort to achieve the lowest possible NO_x emission rate, but must not exceed 15 ppmvd at 15 percent O₂ per CT on a continuous basis when firing natural gas.

4. After the initial compliance tests on the CTs, the permittee shall operate a certified continuous emissions monitor for NO_x emissions and collect 12 months of monitoring data. The monitor will, at a minimum, meet the requirements of 40 CFR 60, Appendix F's quality assurance procedures. Within 18 months after the initial compliance test, the permittee shall prepare and submit

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

for the Department's review an engineering report regarding the collection and the analysis of the data gathered from the monitor. In addition, this report shall include a conclusion regarding the lowest NO_x emission rate that can be consistently achieved with a reasonable operating margin, taking into account long-term performance expectations and assuming good operating and maintenance practices. The report shall also include results of the testing requirements of 40 CFR 60, Appendix F's quality assurance procedures and the actual CEMS data for the period of the study in an acceptable format.

5. The Department will make a determination as to whether to seek to revise the permitted NO_x emission limitation and will base it on the engineering data report submitted by the permittee. ¹²If the data demonstrate that a NO_x emission rate of less than ~~15~~ ppmvd at 15 percent O₂ is consistently achievable, the NO_x emission limit may be adjusted accordingly, but not lower than 9 ppmvd at 15 percent O₂.

6. Excess emissions from a turbine resulting from start up, shutdown, malfunction, fuel switch or load change shall be reported in accordance with 40 CFR 60.334(c) and accepted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24-hour period unless specifically authorized by the Department for a longer duration. The permittee shall provide a general description of the procedures to be followed during periods of start up, shutdown, malfunction, fuel switch or load change to ensure that the best operational practices to minimize emissions will be adhered to and the duration of any excess emissions will be minimized. The description should be submitted to the Department along with the initial compliance test data. The description may be updated as needed by submitting such update to the Department within thirty (30) days of implementation.

7. Excess emissions from fuel switching shall not exceed 15 minutes.

8. Excess emissions due to fuel bound nitrogen levels above 0.015 percent are allowed pursuant to Condition B.1 foot note (e) of the emission limitation table.

C. Performance Testing

1. Initial (I) compliance tests shall be performed on each CT using both fuels. Testing of emissions shall be conducted at

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

95-100% of the manufacturer's rated heat input based on the average ambient air temperature for the CT during the test. Annual (A) compliance tests shall be performed on the CT with the fuel(s) used for more than 400 hours in the preceding 12-month period. Tests at permit renewal shall also be performed on the non-PSD pollutants. Tests and procedures shall be in accordance with 40 CFR 60.335. Tests shall be conducted using EPA reference methods in accordance with 40 CFR 60, Appendix A, as adopted by reference in Chapter 62-297, F.A.C., and follows:

- a. Reference Method 5B for PM (I, A: for oil only; assumption is that all PM is PM₁₀).
- b. Reference Method 9 for VE (I, A).
- c. Reference Method 10 for CO (I, A).
- d. Reference Method 20 for NO_x (I, A) or Method 7E if sampling downstream of the heat recovery steam generator.
- e. Reference Method 18 or 25A for VOC (I, A).
- f. Reference Method 8 for H₂SO₄ Mist (I, A).
- g. Trace elements of Beryllium (Be) and Arsenic (As) shall be tested (I, for oil only) using EMTIC Interim Test Methods. As an alternative, EPA Method 104 for Be may be used; or, Be and As may be determined from fuel analysis using either Method 7090 or 7091 and sample extraction using Method 3040, as described in the EPA solid waste regulations SW 846.
- h. ASTM D4294 (or equivalent) for sulfur content of distillate oil (I and A), which can be used for determining SO₂ emissions annually.
- i. ASTM D1072-80, D3031-81, D4084-82, or D3246-81 (or equivalent) for sulfur content of natural gas (I; and, A if deemed necessary by the Department).
- j. Other U.S. EPA or DEP approved test methods for the permitted facilities may be used for compliance testing after departmental approval. Unless the permittee requests to modify a reference method, or to use a method for which a method was not designed, such approval shall not constitute an alternative test procedure under Section 62-297.620, F.A.C., or otherwise require modification of the permit.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

2. The maximum sulfur content of the fuel oil shall not exceed 0.05 percent, by weight. Compliance shall be demonstrated in accordance with the requirements of 40 CFR 60.334(b).

3. As an alternative to Condition C.1.i above, natural gas supplier data for sulfur content may be submitted. However, the applicant is responsible for ensuring that the procedures above are used for determination of fuel sulfur content. Analysis may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency pursuant to 40 CFR 60.335(e) (1993 version). Any request for a future custom monitoring schedule shall be made in writing to the Department's Bureau of Air Regulation. Any custom schedule approved by the USEPA pursuant to 40 CFR 60.334(b) (1993 version) will be recognized as enforceable provisions of the permit.

D. Monitoring Requirements

Monitoring of operations shall be in accordance with 40 CFR 60.334. Also, and for each CT, the permittee shall install, operate, and maintain a continuous emission monitoring system (CEMS) to monitor nitrogen oxides in accordance with 40 CFR 60, Appendix F, and, if necessary, a diluent gas (CO₂ or O₂). The Federal Acid Rain Program requirements of 40 CFR 75 shall apply when those requirements are adopted and if applicable.

1. Each CEMS shall meet performance specifications of 40 CFR 60, Appendix B.

2. CEMS data shall be recorded and reported in accordance with Rule 62-297.500, F.A.C.; 40 CFR 60; and, 40 CFR 75, if it becomes applicable. The record shall include periods of start up, shutdown, load change, fuel switch, high fuel bound nitrogen, and malfunction.

3. A malfunction means any sudden and unavoidable failure of air pollution control equipment or process equipment to operate in a normal or usual manner. Failures that are caused entirely or in part by poor maintenance, careless operation or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions.

4. The procedures under 40 CFR 60.13 shall be followed for installation, evaluation, and operation of all CEMS. If applicable, 40 CFR 75 shall apply when the Federal Acid Rain Program is adopted.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

5. For purposes of the reports required under this permit, excess emissions, as determined pursuant to Condition B.6 herein, are defined as any calculated average emission rate which exceeds the applicable emission limitation in Condition B.1.

E. Notification, Reporting and Recordkeeping

1. To determine compliance with the natural gas and fuel oil firing heat input limitation, the permittee shall maintain daily records of natural gas and fuel oil consumption for each turbine, and provide the heating value for each fuel during the compliance test. 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.

2. The project shall comply with all the applicable requirements of Chapters 62-210 through 62-297 and 62-4, F.A.C., and 40 CFR 60, Subparts A and GG. The requirements shall include:

- a. 40 CFR 60.7(a)(1) - By postmarking or delivering notification of the start of construction no more than 30 days after such date.
- b. 40 CFR 60.7(a)(2) - By postmarking or delivering notification of the anticipated date of the initial start up of each CT not less than 30 days prior to such date.
- c. 40 CFR 60.7(a)(3) - By postmarking or delivering notification of the actual start up of each turbine within 15 days after such date.
- d. 40 CFR 60.7(a)(5) - By postmarking or delivering notification of the date for demonstrating the CEMS performance, no less than 30 days prior to such date.
- e. 40 CFR 60.7(a)(6) - By postmarking or delivering notification of the anticipated date for conducting the opacity observations no less than 30 days prior to such date.
- f. 40 CFR 60.7(b) - By initiating a recordkeeping system to record the occurrence and duration of any start up, shutdown, load change, fuel switch, high fuel bound nitrogen, and malfunction of a turbine, malfunction of the air pollution control equipment, and the periods when the CEMS is inoperable.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

- g. 40 CFR 60.7(c) - By postmarking or delivering a quarterly excess emissions and monitoring system performance report within 30 days after the end of each calendar quarter. This report shall contain the information specified in 40 CFR 60.7(c) and (d).
- h. 40 CFR 60.8(a) - By conducting all performance tests within 60 days after achieving the maximum turbine and boiler firing rates, but not more than 180 days after the initial start up of each CT.
- i. 40 CFR 60.8(d) - By postmarking or delivering notification of the date of each performance test required by this permit at least 30 days prior to the test date; and,
- j. Rule 62-297.345 - By providing stack sampling facilities for each turbine.
- k. All notifications and reports required by this specific condition shall be submitted to the Department's Southwest District office. Performance test results shall be submitted within 45 days of completion of such test.

3. The following information shall be submitted to the Department's Bureau of Air Regulation within 90 days after the permittee has made the selection of the following:

- a. Description of the final selection of the turbines^{and SCR system} for installation at the facility. The descriptions shall include the specific make and model numbers and any changes in the proposed method of operation, fuels, emissions or equipment.
- b. Description of the CEMS selected. The description shall include the type of sensors and the manufacturer and model numbers of the equipment.

4. The following protocols shall be submitted to the Department's Southwest District office for approval:

- a. CEMS Protocol - Within 120 days after selection of the CEMS, but 180 days prior to the initial startup, a CEMS protocol describing the system, its installation, operating and maintenance characteristics and requirements. The protocol shall meet the requirements of 40 CFR 60.13, Appendix B and Appendix F or 40 CFR 75, and be approved within 60 days.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

- b. Performance Test Protocol - At least 90 days prior to conducting the initial performance tests required by this permit, the permittee shall submit to the Department's Southwest District office a protocol outlining the procedures to be followed, the test methods and any differences between the reference methods and the test methods proposed to be used to verify compliance with the conditions of this permit. The Department shall approve the testing protocol within 60 days provided that it meets the requirements of this permit.
- c. Heat Input Curves - Within 120 days after final selection of the turbine, but 180 days prior to initial startup of the turbine, manufacturer's curves or equations of heat input corrections to other temperatures shall be provided to the Department. Subject to the approval by the Department for technical validity while applying sound engineering principles, the manufacturer's curves shall be used to establish the heat input rates over a range of temperatures for the purposes of compliance determination.

F. Modifications

The permittee shall give written notification to the Department when there is any modification to this facility pursuant to Rule 62-212.200, F.A.C., Definitions - Modifications. This notice shall be submitted sufficiently in advance of any critical date involved to allow sufficient time for review, discussion, and revision of plans, if necessary. Such notice shall include, but not be limited to, information describing the precise nature of the change; modifications to any emission control system; production capacity of the facility before and after the change; and, the anticipated completion date of the change.

G. No. 2 Fuel Oil Storage Tank

The permittee shall be in compliance with the monitoring requirements of 40 CFR 60.116b(a) and (b).

H. Additional General Conditions

- 1. Pursuant to Rule 62-4.090, F.A.C., the permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation prior to 60 days before the expiration of the permit.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

2. An application for an operation permit pursuant to Rule 62-4.220, F.A.C., is not required if the facility is also certified under the Power Plant Siting Act, Chapter 403, Part II, F.S. That certification serves as the operation permit also. The permittee must submit an application for an operation permit for a major source of pollution pursuant to Chapter 62-213, F.A.C.

**STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION**



Howard L. Rhodes, Director
Division of Air Resources
Management



CELEBRATING
YEARS
1948-1998
SERVING OUR MEMBER SYSTEMS

RECEIVED

DEC 14 1998

BUREAU OF
AIR REGULATION

December 9, 1998

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

RE: Seminole Electric Cooperative, Inc.
Hardee Unit 3
PSD-FL-214

Dear Mr. Linero:

Pursuant to our discussions on November 12, 1998 and to the provisions of the PSD permit for Hardee Unit 3, Seminole Electric Cooperative, Inc., hereby submits to the Department information on the combustion turbines and related equipment that are being installed as part of this project in Hardee County, Florida.

As you recall, Specific Condition E.3.a. of the facility's PSD Permit, PSD-FL-214, provides that:

The following information shall be submitted to the Department's Bureau of Air Regulation . . .

- a. Description of the final selection of the turbines for installation at the facility. The descriptions shall include the specific make and model numbers and any changes in the proposed method of operation, fuels, emissions or equipment.

Seminole has selected the Westinghouse 501F(D) Combustion Turbine for this project. Westinghouse (now known as Siemens/Westinghouse Power Corporation) is the same manufacturer and the selected CT is the same class of Westinghouse combustion turbine originally selected for the project. The Westinghouse 501F(D) Combustion Turbine is the specific make and model number of the selected CT. Seminole does not expect there to be any changes either in the proposed method of operation of the combustion turbines or in the project itself. Fuels burned in the facility will continue to be limited to natural gas and low-sulfur fuel oil (equivalent to a Jet A-quality or

better grade No. 2 fuel oil.). The selected combustion turbine will operate within all emission limits established under the PSD Permit.

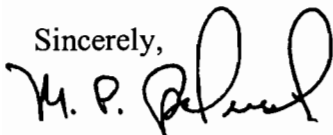
The combustion turbines will be "equipped with dry low NOx combustors or an equivalent system for natural gas firing and wet injection for fuel oil firing" as provided for in the permit. (See page 1 of 15, and page 8 of 15, Specific Condition B.3.) In addition to the dry low NOx combustors, the facility will also include an adequately sized selective catalytic reduction system which is an equivalent NOx control system to the combustors and which will achieve all of the NOx emission limits in the existing PSD permit. Pursuant to Specific Conditions B.4. and 5. of the permit, Seminole will collect twelve months of monitoring data from the facility from the operational date and will submit an engineering report to the Department, which will include our conclusions regarding the lowest NOx emission rate that can be consistently and reasonably achieved for the facility. Based upon this monitoring and report, the Department may amend the facility's permitted NOx emission limit to as low as 9ppm. Each combustion turbine will also be equipped with a carbon monoxide oxidation catalyst control system to meet the established CO limits in the existing PSD Permit.

The provision for heat recovery steam generator (HRSG) by-pass stacks has been eliminated and therefore, the Hardee Unit 3 combustion turbines will only operate in combined cycle mode. In addition, the HRSG stacks have been increased in height from 90 to 175 feet above ground level. Because allowable emission rates remain unchanged and stack heights have increased, maximum air quality impacts will be below the maximum impact levels originally projected for the Hardee Unit 3 Project.

The maximum heat input to each of the two CTs at an ambient temperature of 32° F will increase from 1,862 million Btu per hour to 1,964 million Btu per hour while firing natural gas and decrease from 1,965 million Btu per hour to 1,889 million Btu per hour while firing fuel oil. This slight increase in heat input, while firing gas, from that originally expected will not affect project emissions as all emissions will be at or below current permitted levels for both short-term and long-term periods. Similarly, the electrical output of the plant will be 488 megawatts (nominal) compared to the originally expected 440 megawatt electrical output from the combined cycle power plant. In all respects, the project will comply with all of the other established permit limits and conditions for the Hardee Unit 3 Project.

Seminole will submit the other required notices for the project as we proceed, including those under Specific Condition E.2. Should you have any questions concerning this matter, please do not hesitate to contact either Mike Roddy or myself at (813) 963-0994.

Sincerely,



Michael P. Opalinski
Director of Environmental Affairs

CC: Mr. H. S. Oven (FDEP)



CELEBRATING
YEARS
1948-1998
SERVING OUR MEMBER SYSTEMS

C O V E R
S H E E T

FAX

To: Syed Arif
Company: FDEP
Fax #: (850) 922-6979
Subject: Hardee Unit 3
Date: December 9, 1998
Pages: 3, including this cover sheet.
From: Mike Roddy

If you do not receive all of the pages, please call the Copy Room x1282.

COMMENTS:

Syed: I just noticed that in the letter we sent you on Dec. 1, 1998 had part of a sentence missing on the last line of the 1st page where it carries over to the second page. Attached is a corrected version (with a complete sentence). Sorry about the typo. An original will follow. Thanks, Mike Roddy.

Seminole Electric Cooperative, Inc.

P.O. BOX 272000 ♦ Tampa, Florida 33688-2000 ♦ (813) 963-0994

♦ Fax (813) 264-7906 ♦



CELEBRATING

YEARS

1948-1998

SERVING OUR MEMBER SYSTEMS

December 9, 1998

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

RE: Seminole Electric Cooperative, Inc.
Hardee Unit 3
PSD-FL-214

Dear Mr. Linero:

Pursuant to our discussions on November 12, 1998 and to the provisions of the PSD permit for Hardee Unit 3, Seminole Electric Cooperative, Inc., hereby submits to the Department information on the combustion turbines and related equipment that are being installed as part of this project in Hardee County, Florida.

As you recall, Specific Condition E.3.a. of the facility's PSD Permit, PSD-FL-214, provides that:

The following information shall be submitted to the Department's Bureau of Air Regulation . . .

- a. Description of the final selection of the turbines for installation at the facility. The descriptions shall include the specific make and model numbers and any changes in the proposed method of operation, fuels, emissions or equipment.

Seminole has selected the Westinghouse 501F(D) Combustion Turbine for this project. Westinghouse (now known as Siemens/Westinghouse Power Corporation) is the same manufacturer and the selected CT is the same class of Westinghouse combustion turbine originally selected for the project. The Westinghouse 501F(D) Combustion Turbine is the specific make and model number of the selected CT. Seminole does not expect there to be any changes either in the proposed method of operation of the combustion turbines or in the project itself. Fuels burned in the facility will continue to be limited to natural gas and low-sulfur fuel oil (equivalent to a Jet A-quality or

better grade No. 2 fuel oil.). The selected combustion turbine will operate within all emission limits established under the PSD Permit.

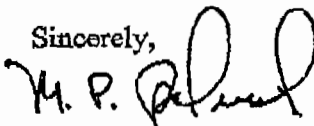
The combustion turbines will be "equipped with dry low NOx combustors or an equivalent system for natural gas firing and wet injection for fuel oil firing" as provided for in the permit. (See page 1 of 15, and page 8 of 15, Specific Condition B.3.) In addition to the dry low NOx combustors, the facility will also include an adequately sized selective catalytic reduction system which is an equivalent NOx control system to the combustors and which will achieve all of the NOx emission limits in the existing PSD permit. Pursuant to Specific Conditions B.4. and 5. of the permit, Seminole will collect twelve months of monitoring data from the facility from the operational date and will submit an engineering report to the Department, which will include our conclusions regarding the lowest NOx emission rate that can be consistently and reasonably achieved for the facility. Based upon this monitoring and report, the Department may amend the facility's permitted NOx emission limit to as low as 9ppm. Each combustion turbine will also be equipped with a carbon monoxide oxidation catalyst control system to meet the established CO limits in the existing PSD Permit.

The provision for heat recovery steam generator (HRSG) by-pass stacks has been eliminated and therefore, the Hardee Unit 3 combustion turbines will only operate in combined cycle mode. In addition, the HRSG stacks have been increased in height from 90 to 175 feet above ground level. Because allowable emission rates remain unchanged and stack heights have increased, maximum air quality impacts will be below the maximum impact levels originally projected for the Hardee Unit 3 Project.

The maximum heat input to each of the two CTs at an ambient temperature of 32° F will increase from 1,862 million Btu per hour to 1,964 million Btu per hour while firing natural gas and decrease from 1,965 million Btu per hour to 1,889 million Btu per hour while firing fuel oil. This slight increase in heat input, while firing gas, from that originally expected will not affect project emissions as all emissions will be at or below current permitted levels for both short-term and long-term periods. Similarly, the electrical output of the plant will be 488 megawatts (nominal) compared to the originally expected 440 megawatt electrical output from the combined cycle power plant. In all respects, the project will comply with all of the other established permit limits and conditions for the Hardee Unit 3 Project.

Seminole will submit the other required notices for the project as we proceed, including those under Specific Condition E.2. Should you have any questions concerning this matter, please do not hesitate to contact either Mike Roddy or myself at (813) 963-0994.

Sincerely,



Michael P. Opalinski
Director of Environmental Affairs

CC: Mr. H. S. Oven (FDEP)



CELEBRATING
YEARS
1948-1998
SERVING OUR MEMBER SYSTEMS

RECEIVED

DEC 03 1998

BUREAU OF
AIR REGULATION

December 1, 1998

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

RE: Seminole Electric Cooperative, Inc.
Hardee Unit 3
PSD-FL-214

Dear Mr. Linero:

Pursuant to our discussions on November 12, 1998 and to the provisions of the PSD permit for Hardee Unit 3, Seminole Electric Cooperative, Inc., hereby submits to the Department information on the combustion turbines and related equipment that are being installed as part of this project in Hardee County, Florida.

As you recall, Specific Condition E.3.a. of the facility's PSD Permit, PSD-FL-214, provides that:

The following information shall be submitted to the Department's Bureau of Air Regulation . . .

- a. Description of the final selection of the turbines for installation at the facility. The descriptions shall include the specific make and model numbers and any changes in the proposed method of operation, fuels, emissions or equipment.

Seminole has selected the Westinghouse 501F(D) Combustion Turbine for this project. Westinghouse (now known as Siemens/Westinghouse Power Corporation) is the same manufacturer and the selected CT is the same class of Westinghouse combustion turbine originally selected for the project. The Westinghouse 501F(D) Combustion Turbine is the specific make and model number of the selected CT. Seminole does not expect there to be any changes either in the proposed method of operation of the combustion turbines or in the project itself. Fuels burned in the facility

better grade No. 2 fuel oil.). The selected combustion turbine will operate within all emission limits established under the PSD Permit.

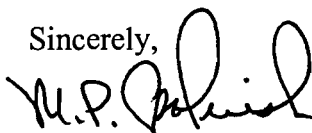
The combustion turbines will be "equipped with dry low NOx combustors or an equivalent system for natural gas firing and wet injection for fuel oil firing" as provided for in the permit. (See page 1 of 15, and page 8 of 15, Specific Condition B.3.) In addition to the dry low NOx combustors, the facility will also include an adequately sized selective catalytic reduction system which is an equivalent NOx control system to the combustors and which will achieve all of the NOx emission limits in the existing PSD permit. Pursuant to Specific Conditions B.4. and 5. of the permit, Seminole will collect twelve months of monitoring data from the facility from the operational date and will submit an engineering report to the Department, which will include our conclusions regarding the lowest NOx emission rate that can be consistently and reasonably achieved for the facility. Based upon this monitoring and report, the Department may amend the facility's permitted NOx emission limit to as low as 9ppm. Each combustion turbine will also be equipped with a carbon monoxide oxidation catalyst control system to meet the established CO limits in the existing PSD Permit.

The provision for heat recovery steam generator (HRSG) by-pass stacks has been eliminated and therefore, the Hardee Unit 3 combustion turbines will only operate in combined cycle mode. In addition, the HRSG stacks have been increased in height from 90 to 175 feet above ground level. Because allowable emission rates remain unchanged and stack heights have increased, maximum air quality impacts will be below the maximum impact levels originally projected for the Hardee Unit 3 Project.

The maximum heat input to each of the two CTs at an ambient temperature of 32° F will increase from 1,862 million Btu per hour to 1,964 million Btu per hour while firing natural gas and decrease from 1,965 million Btu per hour to 1,889 million Btu per hour while firing fuel oil. This slight increase in heat input, while firing gas, from that originally expected will not affect project emissions as all emissions will be at or below current permitted levels for both short-term and long-term periods. Similarly, the electrical output of the plant will be 488 megawatts (nominal) compared to the originally expected 440 megawatt electrical output from the combined cycle power plant. In all respects, the project will comply with all of the other established permit limits and conditions for the Hardee Unit 3 Project.

Seminole will submit the other required notices for the project as we proceed, including those under Specific Condition E.2. Should you have any questions concerning this matter, please do not hesitate to contact either Mike Roddy or myself at (813) 963-0994.

Sincerely,



Michael P. Opalinski
Director of Environmental Affairs

CC: Mr. H. S. Oven (FDEP)

cc: Syed Arief, BAE
Buck Owen, PPS
Scott Garland, OGC
Pat Corner, OGC
EPA
NPS
SWD



CELEBRATING
YEARS
1948-1998
SERVING OUR MEMBER SYSTEMS

C O V E R

FAX

S H E E T

To: Mr. Al Linero
Company: FDEP
Fax #: (850) 922-6979
Subject: Hardee Unit 3
Date: December 1, 1998
Pages: 5, including this cover sheet.
From: Mike Roddy

If you do not receive all of the pages, please call the Copy Room x1282.

COMMENTS:

Al : Attached is a draft letter based on our recent meeting concerning the Hardee Unit 3 Project. Would you please review and get back with me or Mike Roddy this week concerning any changes / corrections. Thanks for your help in this matter - it's been greatly appreciated.

Mike Opalinski

Seminole Electric Cooperative, Inc.

P.O. BOX 272000 ♦ Tampa, Florida 33688-2000 ♦ (813) 963-0994

♦ Fax (813) 264-7906 ♦

December 1, 1998

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

RE: Seminole Electric Cooperative, Inc.
Hardee Unit 3
PSD-FL-214

Dear Mr. Linero:

Pursuant to our discussions on November 12, 1998 and to the provisions of the PSD permit for Hardee Unit 3, Seminole Electric Cooperative, Inc., hereby submits to the Department information on the combustion turbines and related equipment that are being installed as part of this project in Hardee County, Florida.

As you recall, Specific Condition E.3.a. of the facility's PSD Permit, PSD-FL-214, provides that:

The following information shall be submitted to the Department's Bureau of Air
Regulation

a Description of the final selection of the turbines for installation at the facility. The descriptions shall include the specific make and model numbers and any changes in the proposed method of operation, fuels, emissions or equipment.

Seminole has selected the Westinghouse 501F(D) Combustion Turbine for this project. Westinghouse (now known as Siemens/Westinghouse Power Corporation) is the same manufacturer and the selected CT is the same class of Westinghouse combustion turbine originally selected for the project. The Westinghouse 501F(D) Combustion Turbine is the specific make and model number of the selected CT. Seminole does not expect there to be any changes either in the proposed method of operation of the combustion turbines or in the project itself. Fuels burned in the facility will continue to be limited to natural gas and low-sulfur fuel oil (equivalent to a Jet A-quality or better grade No. 2 fuel oil). The selected combustion turbine will operate within all emission limits established under the PSD Permit.

The combustion turbines will be "equipped with dry low NOx combustors or an equivalent system for natural gas firing and wet injection for fuel oil firing" as provided for in the permit. (See page 1 of 15, and page 8 of 15, Specific Condition B.3.) In addition to the dry low NOx combustors, the facility will also include an adequately sized selective catalytic reduction system which is an equivalent NOx control system to the combustors and which will achieve all of the NOx emission limits in the existing PSD permit. Pursuant to Specific Conditions B.4. and 5. of the permit, Seminole will collect twelve months of monitoring data from the facility from the operational date and will submit an engineering report to the Department, which will include our conclusions

regarding the lowest NOx emission rate that can be consistently and reasonably achieved for the facility. Based upon this monitoring and report, the Department may amend the facility's permitted NOx emission limit to as low as 9ppm. Each combustion turbine will also be equipped with a carbon monoxide oxidation catalyst control system to meet the established CO limits in the existing PSD Permit.

The provision for heat recovery steam generator (HRSG) by-pass stacks has been eliminated and therefore, the Hardee Unit 3 combustion turbines will only operate in combined cycle mode. In addition, the HRSG stacks have been increased in height from 90 to 175 feet above ground level. Because allowable emission rates remain unchanged and stack heights have increased, maximum air quality impacts will be below the maximum impact levels originally projected for the Hardee Unit 3 Project.

The maximum heat input to each of the two CTs at an ambient temperature of 32 F will increase from 1,862 million Btu per hour to 1,964 million Btu per hour while firing natural gas and decrease from 1,965 million Btu per hour to 1,889 million Btu per hour while firing fuel oil. This slight increase in heat input, while firing gas, from that originally expected will not affect project emissions as all emissions will be at or below current permitted levels for both short-term and long-term periods. Similarly, the electrical output of the plant will be 488 megawatts (nominal) compared to the originally expected 440 megawatt electrical output from the combined cycle power plant. In all respects, the project will comply with all of the other established permit limits and conditions for the Hardee Unit 3 Project.

Seminole will submit the other required notices for the project as we proceed, including those under Specific Condition E.2. Should you have any questions concerning this matter, please do not hesitate to contact either Mike Roddy or myself at (813) 963-0994.

Sincerely,

Michael P. Opalinski

Director of Environmental Affairs

HOPPING GREEN SAMS & SMITH

PROFESSIONAL ASSOCIATION

ATTORNEYS AND COUNSELORS

123 SOUTH CALHOUN STREET

POST OFFICE BOX 6526

TALLAHASSEE, FLORIDA 32314

(850) 222-7500

FAX (850) 224-8551

FAX (850) 425-3415

JAMES S. ALVES
BRIAN H. BIBEAU
KATHLEEN BLIZZARD
RICHARD S. BRIGHTMAN
KEVIN B. COVINGTON
PETER C. CUNNINGHAM
RALPH A. DEMEO
THOMAS M. DEROSE
RANDOLPH M. GIDDINGS
WILLIAM H. GREEN
KIMBERLY A. GRIPPA
WADE L. HOPPING
GARY K. HUNTER, JR.
JONATHAN T. JOHNSON
ROBERT A. MANNING
FRANK E. MATTHEWS
RICHARD D. MELSON

ANGELA R. MORRISON
GABRIEL E. NIETO
GARY V. PERKO
MICHAEL P. PETROVICH
DAVID L. POWELL
WILLIAM D. PRESTON
CAROLYN S. RAEPPEL
DOUGLAS S. ROBERTS
GARY P. SAMS
TIMOTHY G. SCHOENWALDER
ROBERT P. SMITH
CHERYL G. STUART
W. STEVE SYKES
T. KENT WETHERELL, II
OF COUNSEL
ELIZABETH C. BOWMAN

Writer's Direct Dial No.

(850) 425-2329

November 11, 1998

Michael P. Opalinski
Director, Environmental Affairs
Seminole Electric Cooperative
Post Office Box 272000
Tampa, Florida 33688

RE: Seminole Electric Cooperative Hardee Unit 3;
PSD Permit Validity

Dear Mike:

The FDEP Bureau of Air Regulation has recently suggested that Seminole Electric Cooperative's authority to commence construction of the Hardee Unit 3 Project has expired due to the passage of eighteen (18) months since the issuance of the PSD permit for that power plant. In effect, this means the PSD permit has expired, under his view. As the basis for this conclusion, FDEP has cited to a federal regulation found at 40 CFR §52.21(r)(2), which provides that the approval to construct under a PSD permit issued under the federal PSD permitting rules expires after 18 months, unless the permittee requests an extension of that expiration date.

As discussed below, research and review of the FDEP's rules indicate that this particular federal rule has not been adopted by FDEP for application in Florida to FDEP-issued PSD permits. Nor is this rule or its provisions referenced in the Hardee Unit 3 PSD permit. Further, Seminole Electric Cooperative has received no formal notice from either FDEP or USEPA, and has had no reason to be on notice, that this federal provision applied to the state-issued PSD permit for Hardee Unit 3. Accordingly, the PSD permit for Hardee Unit 3 remains in full force and effect today.

PERMIT VALIDITY

As you recall, on September 28, 1995, FDEP issued a PSD permit to Seminole for the construction of Hardee Unit 3. The first page of that permit indicates an expiration date of January 1, 2000.

Mike Opalinski
November 11, 1998
Page 2

The permit contains no separate indication that the permit, the BACT determination or any other portion of the PSD permit would expire before that date. Nor is there any statement in the permit that construction must commence within a specified period of time.

The first page of the permit indicates that "this permit is issued under the provisions of Chapter 403, Florida Statutes, and Administrative Code Chapters 62-212 and 62-4," which are the Florida PSD rules. There is no reference or indication that the permit was being issued pursuant to the federal PSD permitting rules under 40 CFR §52.21, that would put Seminole on notice that the approval to construct would become invalid in 18 months under the federal rule.¹ The permit contains no express reference to that federal rule or recitation of the rule's substantive provisions that construction must commence within 18 months of the permit's issuance.

Quite to the contrary of this federal rule, Specific Condition H-1 of the Hardee Unit 3 PSD permit provides that "pursuant to Rule 62-4.090, F.A.C., the permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation prior to sixty (60) days before the expiration of the permit," which would be approximately November 1, 1999. See page 14 of 15 of PSD Permit. By its terms, the PSD permit sets a much later expiration date than FDEP now claims applies. The permit expressly establishes the deadline for requesting an extension of the "construction permit" which is 60 days before January 1, 2000. This express language of the permit controls over any other authority which FDEP may now wish to cite. If FDEP had intended that the federal rules applied to this PSD permit, then this provision on extending the permit should not have been included in the Hardee Unit 3 permit.

There is no statement in the permit that this permit was also a state air construction permit (in addition to a PSD permit.) The separate PPSA certification for the Hardee Unit 3 Project also serves as the state-required air construction and operation permit under FDEP rules. Thus, there is no basis to suggest that the PSD permit's expiration date only applied to any state-only portion of that permit.

¹ Compare the March 1, 1994, FDEP PSD permit for the FPC Polk County Project, which contains express language that construction must commence within 18 months, or an extension must be requested, to preserve the BACT determination, and which expressly cites 40 CFR 52.21(r)(2). PSD-FL-195, Specific Condition A.8, (at page 7 of 20). Also a similar provision appears in the recent FDEP PSD permit for the City of Tallahassee's Purdom Repowering Project.

Mike Opalinski
November 11, 1998
Page 3

A review of the FDEP's air regulations contained in Chapters 62-204 to 62-297, F.A.C. does not reveal any provision stating that a PSD permit or a BACT determination issued by FDEP would expire within eighteen (18) months if the project's construction has not commenced.

FDEP is apparently basing this conclusion that the BACT has expired upon the recent conclusion by USEPA Region IV that the Florida PSD permit program for power plants certified under the Florida Power Plant Siting Act is a "delegated" PSD permit program as opposed to an "approved" PSD permit program. For this group of PSD permits, the federal PSD permitting rules in 40 CFR 52.21 would presumably control the issuance of PSD permits for plants such as the Hardee Unit 3 if they are also permitted under the Power Plant Siting Act. Under this theory, since the permit is a "delegated" permit issued by FDEP, then apparently the 18 month deadline to commence construction for PSD permits in 40 CFR 52.21(r) applies as well (which requires disregarding the express expiration date set forth by FDEP on the face of the Hardee Unit 3 permit.)

However, USEPA Region IV reviewed and commented on the preliminary BACT determination and draft PSD permit for Hardee Unit 3 which contained the January 1, 2000 expiration date. USEPA did not comment that this expiration date was incorrect. USEPA did not indicate that the PSD permit for Hardee Unit 3 was to be issued pursuant to the federal PSD rules in 40 CFR §52.21, and not pursuant to the FDEP rules cited by FDEP on the permit's first page. FDEP sent USEPA a copy of the final PSD permit. To my knowledge, USEPA did not advise FDEP that the permit's expiration date was incorrect, based upon this now-cited federal rule, or that the federal PSD permitting rules controlled the permit.

Thus, both FDEP and USEPA by their actions have led Seminole to believe that the PSD permit and the authority to commence construction was valid at least until January 1, 2000. They have given no prior indication to Seminole of their belief that the permit or any portion of it expired at any earlier date. Those agencies cannot now take a contrary position to Seminole's disadvantage, after Seminole has acted in reliance on the expiration date set forth in the permit. If Seminole had been aware of this belief and if the PSD permit and applicable rules indicated such an earlier expiration date, Seminole would have requested an extension of the commence construction date. Ever since this unit was initially deferred, Seminole has advised the agencies that it still intend to construct the unit. Preservation of valid permits for the Project was an integral part of Seminole's plans for this facility.

Thus, for these reasons the PSD permit for Hardee Unit 3 remains valid and in effect today. Further, the authority to

Mike Opalinski
November 11, 1998
Page 4

commence construction under that permit lasts until January 1, 2000.

PERMIT REVISIONS

Since the PSD permit for Hardee Unit 3 remains valid, Seminole need not apply for an entirely new PSD permit for the facility, and undertake a detailed PSD permitting analysis. Instead, an amendment or revision of the current and valid PSD permit is the required permit action.

First, the expected need to install SCR, in addition to low NOx burners, to potentially meet the established NOx emission rates requires a permit revision to reflect this possible change in the method of operation, pursuant to Specific Conditions E.3 and F of the PSD permit. FDEP made a similar change to the PSD permit for Florida Power Corporation's (FPC) initial 470 MW unit in Polk County. FPC obtained a PSD permit modification for its facility on the premise that SCR would be used, on either an interim or permanent basis, to meet the permitted NOx emission limits in place of the originally-proposed dry low-NOx combustors. This was characterized as an alternative compliance method to achieve the NOx emission limits in the PSD permit. Other permit changes were made to reflect the final unit selected for FPC's Polk County facility. In its August 4, 1998 Technical Evaluation for FPC's permit change, FDEP determined the "adjustments to emission limits [of the FPC unit] have been less than PSD significant amounts." Since there was no significant increase in emissions, FDEP did not conduct an updated BACT evaluation or other PSD review. The permit modification did not highlight or even cite to the fact the FPC unit had been constructed and placed in operation as a basis for the FDEP's permit modification.

This action in the FPC permit is consistent with a USEPA PSD permitting guidance memorandum addressing a facility which was constructed but unable to meet its NOx and several other emission limits. In USEPA Office of Air Quality Planning and Standards, Memorandum from Gary McCutchen, Request for Determination of Best Available Control Technology (BACT) Issues--Ogden Martin Tulsa Municipal Waste Incinerator Facility (Nov. 19, 1987.), it was concluded, when a facility could not meet its emission limits at startup, that:

prior to any attempt to revise or readjust any existing BACT limit, the source has an initial obligation to comply with the permit. At a minimum the source should be required to investigate and report to the permitting agency all available options to reduce emissions to a lower (if not the permitted) level. If compliance with the permit can be reasonably achieved, the source should

Mike Opalinski
November 11, 1998
Page 5

be required to take steps to reduce emissions. If sufficient emission reductions down to the permitted level cannot be reasonably achieved, then a reevaluation of the permit may be warranted.

Memorandum, at p. 2. (emphasis added). A significant factor in this Memorandum was the finding that the initial BACT determination was found later to be erroneous, but without any misrepresentations or concealment by the permittee. This clearly suggests that a permittee, unsuccessful in meeting emission limits with the original equipment or methods, may chose other methods to achieve the BACT emission limits (i.e, SCR) without triggering PSD review including renewed BACT evaluation, where there is no significant increase in those emissions.

If, as it appears from the Westinghouse data, that all or most of the permitted emission limits for the Hardee Unit 3 can be achieved or even lowered in part by using SCR, then as in the case of FPC and the Ogden Martin facility discussed in the USEPA guidance memorandum, Seminole should be allowed to install SCR as an alternative method to achieve the permitted emission limits, consistent with the provisions of the PSD permit.

If there will be no increase in permitted emissions using SCR, then FDEP should be prepared to revise the PSD permit to reflect the alternative control equipment without subjecting the plant to further or detailed PSD review. (Public notice and opportunities for agency and public consent may be necessary for the permit revision.) If however, regulated emissions will increase by significant amounts, then FDEP can be expected to undertake some degree of PSD review, including possibly a reconsideration of BACT, for those increased emissions only.

In sum, the PSD permit for Hardee Unit 3 remains valid, and the authorization to commence construction extends until January 1, 2000, as expressly provided in the FDEP-issued permit. Changes to the project based on the final selection of the generating equipment and to address alternate emission control methods will necessitate revision of the PSD permit as provided by the permit conditions. However, only if there are significant increases in regulated emissions will the need to conduct detailed PSD review for those emission increases be justified.

Should you have any questions concerning this matter, please contact me.

Sincerely,



Douglas S. Roberts



Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

August 10, 1998

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Mike Opalinski
Director of Environmental Affairs
Seminole Electric Cooperative, Inc.
16313 North Dale Mabry Highway
Tampa, Florida 33618

Re: Permit Expiration - Commencement of Construction

Dear Mr. Opalinski:

Per our discussion, attached is a memorandum summarizing EPA's policy regarding extension of the 18-month commencement of construction deadline given in 40 CFR 52.21(r)(2). For reference, it has been approximately 36 months since the permit for the Hardee Unit 3 was issued. It will expire on January 1, 2000.

Both the Federal rules in 40 CFR 52.21 and the State rules in 62-212.400, F.A.C. apply to PSD permits issued to projects reviewed under the Florida Power Plant Siting Act.

If you have any questions regarding this matter, please call me at (850)921-9523.

Sincerely,

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

AAL/kt

cc: B. Oven, PPS

Is your RETURN 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):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Mike Opalinski
Director of Env. affairs
Seminole Electric Corp
16313 N. Dale Mabry
Tampa, FL 33618

4a. Article Number

P 265 659 405

4b. Service Type

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

7. Date of Delivery

8-13-98

5. Received By: (Print Name)

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

6. Signature: (Addressee or Agent)

X *William R. [Signature]*

PS Form 3811, December 1994

102595-97-B-0179

Domestic Return Receipt

Thank you for using Return Receipt Service.

P 265 659 405

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent <i>Mike Opalinski</i>	
Street & Number <i>Seminole Electric</i>	
Post Office, State, & ZIP Code <i>Tampa FL</i>	
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	8-11-98

PS Form 3800, April 1995

THE TEXT YOU ARE VIEWING IS A COMPUTER-GENERATED OR RETYPED VERSION OF A PAPER PHOTOCOPY OF THE ORIGINAL. ALTHOUGH CONSIDERABLE EFFORT HAS BEEN EXPENDED TO QUALITY ASSURE THE CONVERSION, IT MAY CONTAIN TYPOGRAPHICAL ERRORS. TO OBTAIN A LEGAL COPY OF THE ORIGINAL DOCUMENT, AS IT CURRENTLY EXISTS, THE READER SHOULD CONTACT THE OFFICE THAT ORIGINATED THE CORRESPONDENCE OR PROVIDED THE RESPONSE.

11.12

TRANSMITTAL NOTICE: 2-88

September 8, 1988

MEMORANDUM

SUBJECT: EPA Region IX Policy on PSD Permit Extensions

FROM: Wayne Blackard, Chief
New Source Section

TO: Region IX States and Districts
NSR/PSD Permitting Contacts

Attached for your information is a copy of a guidance document prepared by my staff addressing EPA Region IX's policy on PSD permit extensions. The purpose of this document is to clarify the criteria EPA examines prior to extending the 18-month commencement of construction deadline found in 40 CFR 52.21 (r)(2). At the heart of these requirements are assurances of current BACT determinations and continued public participation when permits are extended. Our hope is that this policy will enhance agreement among permitting agencies in implementing PSD regulations.

We hope you will find this document helpful. If you have any questions, please contact me at (415) 974-8249.

EPA Region IX
New Source Section
Guidance Document: 1-88
Date: 3/23/88 (PMF)
Revised: 7/6/88

EPA REGION IX POLICY

ON

PSD PERMIT EXTENSIONS

The following is EPA Region IX's policy regarding Prevention of Significant Deterioration (PSD) permit extensions. This policy clarifies the subject of extensions of the 18-month commencement of construction deadline found in 40 CFR 52.21 (r) (2).

The intent of this policy is to grant a permit extension of the 18-month deadline to any good faith application, provided the following requirements are met. If these requirements are not met or if the extension request is denied, the permit will become invalid after its expiration date. The applicant,

however, may choose to file a project application for consideration as a new permit. In general, the import of this policy is to ensure that the proposed permit meets the current EPA requirements, and that the public is kept apprised of the proposed action (i.e. through the 30-day public comment period).

I. ADMINISTRATIVE REQUIREMENTS

(1) Submittal

An extension request must be submitted and received by EPA- Region IX prior to the expiration date of the permit.

(2) Justification

The extension request must include an acceptable justification why the commencement of construction did not commence as scheduled. The request must also include a revised construction schedule which assures that construction will be initiated during the extension period and that construction will be continuous.

(3) Certification

The extension request must be signed by a responsible representative of the company proposing the project.

II. TECHNICAL REQUIREMENTS

(1) BACT Analysis

A BACT reanalysis is required in all permit extension requests, as in an application for a new PSD

permit. It should also be noted that, according to a recent EPA policy, any new BACT determination being prescribed for any regulated pollutant must also consider the impact of the proposed BACT on the emissions of unregulated or toxic pollutants.

(2) Additional PSD Review Requirement

A reanalysis of the PSD increment consumption and air quality impacts is required. Interim source growth in the area may have occurred and caused significant degradation of air quality. Therefore, the review agency is responsible for ensuring that the source requesting an extension would not cause or contribute to a PSD increment or NAAQS exceedances.

(3) New PSD Regulations or Requirements

It is not the intent of this policy to exempt projects from meeting new requirements. Therefore, all new or interim PSD requirements will be applied as in an application for a new PSD permit

III. PROCEDURAL ISSUES

(1) Duration of Extensions

Due to concerns of growth rights and public participation, EPA may limit an extension to 12 months, or less, from the initial date the permit was to expire. This allows for an extension, if necessary, while ensuring that impacted States, Districts and the public have control of their own air resources and growth rights and that state-of-the-art BACT will be employed.

(2) Public Comment

EPA will require the same public comment procedure for extension requests as for permit modifications including a 30-day public comment period. Requests for public hearings and petitions for permit appeals shall follow the applicable procedures of 40 CFR Part 124.

(3) Extensions of Later Units of Phased Multi-Unit Projects

Determinations for phased multi-unit projects are very complex involving the independence or dependence of a project and often different construction dates. Therefore, please consult with EPA regarding any questions addressing phased construction projects.

EPA Staff Contact:

Peter Fickenscher (415) 974-8226 (FTS 454-8226)

Section Chief:

Wayne Blackard (415) 974-8249 (FTS 454-8249)

Memorandum

Florida Department of Environmental Protection

TO: Clair Fancy

FROM: A. A. Linero, P.E. *aa Lin 7/30*

DATE: July 30, 1998

SUBJECT: Seminole Electric Hardee Unit 3
PSD-FL-214

The subject permit issued in 1995 will expire on January 1, 2000. According to the ten year Site Plan filed by Seminole Electric with the Public Service Commission, field construction will begin on January 2000 with a planned in-service date of January 2002.

The permit NO_x conditions require achievement of a lb/hr limit based on 15 ppm by Dry Low NO_x technology. There is a provision requiring that the BACT be reset to a level as low as 9 ppm based on the result of initial testing of the Dry Low NO_x combustors.

Seminole originally planned to purchase the unit from Westinghouse and is still negotiating with them on various technical issues. I originally sealed the technical evaluation on this permit. I no longer have reasonable assurance that the facility as designed will comply with our permit conditions, rules and regulations based on Westinghouse projects in Florida, Georgia and Missouri. I am concerned that if the facility resorts to SCR, they will specify a system capable of achieving a NO_x rate of 15 ppm at full capacity and a limit as high as 30 ppm at low load. This would not represent the limits I would have required had SCR been considered feasible when the unit was permitted.

Because construction was discontinued for at least 18 months, the approval to construct has become invalid according to the EPA Rules for delegated PSD programs at 40CFR52.21(r)(1), Source Obligation. This period can be extended by the "Administrator" upon a satisfactory showing that an extension is justified.

I believe there is good reason to require (by a permit modification) the facility to achieve a lower NO_x limit through SCR if it cannot achieve 15 ppm by Dry Low NO_x. Our most recent evaluation of NO_x removal costs by SCR are approximately \$2,500 per ton when installed following Westinghouse's commercially demonstrated Dry Low NO_x combustors capable of reducing NO_x to about 40 ppm.

A project with a completion date of 2002 would have typically been permitted in 1998 or 1999. At this time SCR technology for such projects should be 7.5 ppm as specified for the Lakeland project upon conversion to combined cycle.

I plan to call Seminole and advise them of the matter so that Westinghouse can design a proper SCR system should they be awarded the final contract for the project.

AAI/aal

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

B. Emission Limits

1. Pursuant to Rule 62-212.410, F.A.C., BACT, the maximum allowable emission limitations from two CTs, when firing natural gas or No. 2 fuel oil, shall not exceed the following:

MAXIMUM ALLOWABLE EMISSION LIMITATIONS

<u>POLLUTANT</u>	<u>FUEL</u>	<u>CONCENTRATION</u>	<u>lbs/hr (a)</u>	<u>TPY (b)</u>	<u>TPY (TOTAL) c</u>
NO _x	Gas	15 ppmvd (d)	106	931	1212
	Oil	42 ppmvd (e)	336	504	
CO	Gas	20 ppmvd	71	622	618
	Oil	25 ppmvd	91	136	
PM/PM ₁₀	Gas		7	65	147
	Oil		67	100	
SO ₂	Gas		5	47	182
	Oil		101	152	
VOC	Gas	5 ppmvd	10	88	99
	Oil	10 ppmvd	21	31	
Sulfuric Acid Mist	Gas		1	6	39
	Oil		22	34	
Beryllium	Oil		0.0049	0.007	0.007
Arsenic	Oil		0.0097	0.014	0.014
Visible Emissions	Gas		≤ 10 percent opacity		
	Oil		≤ 10 percent opacity		

- (a) The emission limitations in lbs/hr/CT are a 1-hour average as determined pursuant to the Performance Testing conducted pursuant to Condition C.1 below.
- (b) The annual emission limitations (TPY) for natural gas are based on two CTs operating at full load for 8,760 hours per year. The annual emission limitations (TPY) for fuel oil are based on the equivalent of full-load operation for a maximum of 1500 hours per year for each of the two CTs (not to exceed 3,000 hrs/yr between the two CTs). The emission calculations are also based at a worst case ambient temperature of 32°F.
- (c) Maximum allowable emissions from two CTs if any fuel oil is burned at the facility during the year. The emission calculations are also based at an ambient temperature of 59°F.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

for the Department's review an engineering report regarding the collection and the analysis of the data gathered from the monitor. In addition, this report shall include a conclusion regarding the lowest NO_x emission rate that can be consistently achieved with a reasonable operating margin, taking into account long-term performance expectations and assuming good operating and maintenance practices. The report shall also include results of the testing requirements of 40 CFR 60, Appendix F's quality assurance procedures and the actual CEMS data for the period of the study in an acceptable format.

5. The Department will make a determination as to whether to seek to revise the permitted NO_x emission limitation and will base it on the engineering data report submitted by the permittee. If the data demonstrate that a NO_x emission rate of less than 15 ppmvd at 15 percent O₂ is consistently achievable, the NO_x emission limit may be adjusted accordingly, but not lower than 9 ppmvd at 15 percent O₂.

6. Excess emissions from a turbine resulting from start up, shutdown, malfunction, fuel switch or load change shall be reported in accordance with 40 CFR 60.334(c) and accepted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24-hour period unless specifically authorized by the Department for a longer duration. The permittee shall provide a general description of the procedures to be followed during periods of start up, shutdown, malfunction, fuel switch or load change to ensure that the best operational practices to minimize emissions will be adhered to and the duration of any excess emissions will be minimized. The description should be submitted to the Department along with the initial compliance test data. The description may be updated as needed by submitting such update to the Department within thirty (30) days of implementation.

7. Excess emissions from fuel switching shall not exceed 15 minutes.

8. Excess emissions due to fuel bound nitrogen levels above 0.015 percent are allowed pursuant to Condition B.1 foot note (e) of the emission limitation table.

C. Performance Testing

1. Initial (I) compliance tests shall be performed on each CT using both fuels. Testing of emissions shall be conducted at

Best Available Copy

DEPARTMENT OF
ENVIRONMENTAL PROTECTION

MAY 15 1998

SITING COORDINATION

SEMINOLE ELECTRIC COOPERATIVE, INC.

1998 TEN YEAR SITE PLAN

APRIL 1998

Schedule 9
Status Report and Specifications of Proposed Generating Facilities

- (1) Plant Name & Unit Number: Hardee Power Station Unit 3
- (2) Capacity
a. Summer: 451 MW
b. Winter: 527 MW
- (3) Technology Type: Advanced Combined Cycle
- (4) Anticipated Construction Timing
a. Field construction start-date: Jan. 2000
b. Commercial in-service date: Jan. 2002
- (5) Fuel
a. Primary fuel: Natural Gas
b. Alternate fuel: Distillate Oil
- (6) Air Pollution Control Strategy: Dry Low NOx Combustors, Natural Gas, Low Sulfur #2 Oil
- (7) Cooling Method: Cooling Reservoir
- (8) Total Site Area: 1,280 Acres
- (9) Construction Status: N/A
- (10) Certification Status: Certification received 08/15/1995
- (11) Status With Federal Agencies
EPA: Approval received 9/11/1995
RUS: Record of Decision received 9/14/1995
- (12) Projected Unit Performance Data
Planned Outage Factor (POF): 5.75%
Forced Outage Factor (FOF): 6.50%
Equivalent Availability Factor (EAF): 87.75%
Resulting Capacity Factor (%): 31% - 54%
Average Net Operating Heat Rate (ANOHR): 7,430
- (13) Projected Unit Financial Data
Book Life (Years): 30
Total Installed Cost (In-Service Year \$/kW): 723.71
Direct Construction Cost (\$/kW): 518.81
AFUDC Amount (\$/kW): 74.43
Escalation (\$/kW): 57.43
Fixed O&M (\$/kW-Yr): 13.20
Variable O&M (\$/MWH): 1.23
K Factor: N/A



40 CFR Ch. I (7-1-97 Edition)

fication may demonstrate to the Federal Land Manager that the emissions from such source or modification would have no adverse impact on the air quality related values of any such lands (including visibility), notwithstanding that the change in air quality resulting from emissions from such source or modification would cause or contribute to concentrations which would exceed the maximum allowable increases for a Class I area. If the Federal land manager concurs with such demonstration and he so certifies, the State may authorize the Administrator: *Provided*, That the applicable requirements of this section are otherwise met, to issue the permit with such emission limitations as may be necessary to assure that emissions of sulfur dioxide, particulate matter, and nitrogen oxides would not exceed the following maximum allowable increases over minor source baseline concentration for such pollutants:

Pollutant	Maximum allowable increase (micrograms per cubic meter)
Particulate matter:	
PM-10, annual arithmetic mean	17
PM-10, 24-hr maximum	30
Sulfur dioxide:	
Annual arithmetic mean	20
24-hr maximum	91
3-hr maximum	325
Nitrogen dioxide:	
Annual arithmetic mean	25

(6) *Sulfur dioxide variance by Governor with Federal Land Manager's concurrence.* The owner or operator of a proposed source or modification which cannot be approved under paragraph (q)(4) of this section may demonstrate to the Governor that the source cannot be constructed by reason of any maximum allowable increase for sulfur dioxide for a period of twenty-four hours or less applicable to any Class I area and, in the case of Federal mandatory Class I areas, that a variance under this clause would not adversely affect the air quality related values of the area (including visibility). The Governor, after consideration of the Federal Land Manager's recommendation (if any) and subject to his concurrence, may, after notice and public hearing, grant a variance from such maximum

Best Available Copy

Environmental Protection Agency

allowable increase. If such variance is granted, the Administrator shall issue a permit to such source or modification pursuant to the requirements of paragraph (q)(7) of this section: *Provided*, That the applicable requirements of this section are otherwise met.

(7) *Variance by the Governor with the President's concurrence.* In any case where the Governor recommends a variance in which the Federal Land Manager does not concur, the recommendations of the Governor and the Federal Land Manager shall be transmitted to the President. The President may approve the Governor's recommendation if he finds that the variance is in the national interest. If the variance is approved, the Administrator shall issue a permit pursuant to the requirements of paragraph (q)(7) of this section: *Provided*, That the applicable requirements of this section are otherwise met.

(8) *Emission limitations for Presidential or gubernatorial variance.* In the case of a permit issued pursuant to paragraph (q) (5) or (6) of this section the source or modification shall comply with such emission limitations as may be necessary to assure that emissions of sulfur dioxide from the source or modification would not (during any day on which the otherwise applicable maximum allowable increases are exceeded) cause or contribute to concentrations which would exceed the following maximum allowable increases over the baseline concentration and to assure that such emissions would not cause or contribute to concentrations which exceed the otherwise applicable maximum allowable increases for periods of exposure of 24 hours or less for more than 18 days, not necessarily consecutive, during any annual period:

MAXIMUM ALLOWABLE INCREASE
(Micrograms per cubic meter)

Period of exposure	Terrain areas	
	Low	High
24-hr maximum	36	62
3-hr maximum	130	221

(q) *Public participation.* The Administrator shall follow the applicable procedures of 40 CFR part 124 in processing applications under this section. The

On point and applicable for delegated programs.

\$52.21

Administrator shall follow the procedures at 40 CFR 52.21(r) as in effect on June 19, 1979, to the extent that the procedures of 40 CFR part 124 do not apply.

(c) *Source obligation.* (1) Any owner or operator who constructs or operates a source or modification not in accordance with the application submitted pursuant to this section or with the terms of any approval to construct, or any owner or operator of a source or modification subject to this section who commences construction after the effective date of these regulations without applying for and receiving approval hereunder, shall be subject to appropriate enforcement action.

(2) Approval to construct shall become invalid if construction is not commenced within 18 months after receipt of such approval, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. The Administrator may extend the 18-month period upon a satisfactory showing that an extension is justified. This provision does not apply to the time period between construction of the approved phases of a phased construction project; each phase must commence construction within 18 months of the projected and approved commencement date.

(3) Approval to construct shall not relieve any owner or operator of the responsibility to comply fully with applicable provisions of the State implementation plan and any other requirements under local, State, or Federal law.

(4) At such time that a particular source or modification becomes a major stationary source or major modification solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements or paragraphs (j) through (s) of this section shall apply to the source or modification as though construction had not yet commenced on the source or modification.

Best Available Copy

Related but not precisely
Applicable

40 CFR Ch. I (7-1-97 Edition)

Environmental Protection Agency

\$52.21

52.21 as in effect on June 19, 1978, if the owner or operator of the source or modification submits an application for a permit under this section on or before June 8, 1981, and the Administrator subsequently determines that the application as submitted before that date was complete with respect to the requirements of this section other than those in paragraphs (m)(1) (i) through (iv) of this section, and with respect to the requirements for such analyses at 40 CFR 52.21(m)(2) as in effect on June 19, 1978. Instead, the latter requirements shall apply to any such source or modification.

(i) The requirements for air quality monitoring in paragraphs (m)(1) (i) through (iv) of this section shall not apply to a particular source or modification that was not subject to 40 CFR 52.21 as in effect on June 19, 1978, if the owner or operator of the source or modification submits an application for a permit under this section on or before June 8, 1981, and the Administrator subsequently determines that the application as submitted before that date was complete, except with respect to the requirements in paragraphs (m)(1) (i) through (iv).

(1)(i) At the discretion of the Administrator, the requirements for air quality monitoring of PM₁₀ in paragraphs (m)(1) (i) through (iv) of this section may not apply to a particular source or modification when the owner or operator of the source or modification submits an application for a permit under this section on or before June 1, 1988 and the Administrator subsequently determines that the application as submitted before that date was complete, except with respect to the requirements for monitoring particulate matter in paragraphs (m)(1) (i) through (iv).

(ii) The requirements for air quality monitoring of PM₁₀ in paragraphs (m)(1), (ii) and (iv) and (m)(3) of this section shall apply to a particular source or modification if the owner or operator of the source or modification submits an application for a permit under this section after June 1, 1988 and no later than December 1, 1988. The data shall have been gathered over at least the period from February 1, 1988 to the date the application becomes otherwise complete in accordance with

the provisions set forth under paragraph (m)(1)(viii) of this section, except that if the Administrator determines that a complete and adequate analysis can be accomplished with monitoring data over a shorter period (not to be less than 4 months), the data that paragraph (m)(1)(iii) requires shall have been gathered over a shorter period.

(12) The requirements of paragraph (k)(2) of this section shall not apply to a stationary source or modification with respect to any maximum allowable increase for nitrogen oxides if the owner or operator of the source or modification submitted an application for a permit under this section before the provisions embodying the maximum allowable increase took effect as part of the applicable implementation plan and the Administrator subsequently determined that the application as submitted before that date was complete.

(13) The requirements in paragraph (k)(2) of this section shall not apply to a stationary source or modification with respect to any maximum allowable increase for PM-10 if (i) the owner or operator of the source or modification submitted an application for a permit under this section before the provisions embodying the maximum allowable increases for PM-10 took effect in an implementation plan to which this section applies, and (ii) the Administrator subsequently determined that the application as submitted before that date was otherwise complete. Instead, the requirements in paragraph (k)(2) shall apply with respect to the maximum allowable increases for TSP as in effect on the date the application was submitted.

~~(14) Control technology review.~~ (1) A major stationary source or major modification shall meet each applicable emissions limitation under the State Implementation Plan and each applicable emissions standard and standard of performance under 40 CFR parts 60 and 61.

(2) A new major stationary source shall apply best available control technology for each pollutant subject to regulation under the Act that it would have the potential to emit in significant amounts.

(3) A major modification shall apply best available control technology for each pollutant subject to regulation under the Act for which it would result in a significant net emissions increase at the source. This requirement applies to each proposed emissions unit at which a net emissions increase in the pollutant would occur as a result of a physical change or change in the method of operation in the unit.

(4) For phased construction projects, the determination of best available control technology shall be reviewed and modified as appropriate at the latest reasonable time which occurs no later than 18 months prior to commencement of construction of each independent phase of the project. At such time, the owner or operator of the applicable stationary source may be required to demonstrate the adequacy of any previous determination of best available control technology for the source.

~~(k) Source impact analysis.~~ The owner or operator of the proposed source or modification shall demonstrate that allowable emission increases from the proposed source or modification, in conjunction with all other applicable emissions increases or reductions (including secondary emissions), would not cause or contribute to air pollution in violation of:

(1) Any national ambient air quality standard in any air quality control region; or

(2) Any applicable maximum allowable increase over the baseline concentration in any area.

(1) *Air quality models.* (i) All estimates of ambient concentrations required under this paragraph shall be based on applicable air quality models, data bases, and other requirements specified in appendix W of part 51 of this chapter (Guideline on Air Quality Models).

(2) Where an air quality model specified in appendix W of part 51 of this chapter (Guideline on Air Quality Models) is inappropriate, the model may be modified or another model substituted. Such a modification or substitution of a model may be made on a case-by-case basis or, where appropriate, on a generic basis for a specific state program. Written approval of the Administrator must be obtained for any modification



RECEIVED

OCT 16 1995

BUREAU OF
AIR REGULATION

October 12, 1995

Mr. A. A. Linero, P.E.
Administrator
New Source Review Section
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: PSD-FL-214, Hardee Unit No. 3
Dear Mr. Linero:

On October 12, 1995, the Seminole Board of Trustees approved a new three-year purchase power agreement with Florida Power Corporation. Under the terms of the agreement, Seminole and Florida Power Corporation have agreed to re-structure 150 MW of an existing long-term agreement, at the same time expanding Seminole's purchases by an additional 455 MW from January 1999 through the end of 2001. This agreement will allow Seminole to delay the planned January 1999 in-service date of a 440 MW combined cycle unit at the Hardee County site (Hardee Unit #3).

At this time, it does not appear to be necessary to revise or amend either the Power Plant Siting Act certification or any of the other permits issued to the Hardee Unit #3 Project to accommodate this delay. We will be contacting you in the very near future related to any specific follow up which may be required. We appreciate your cooperation in this matter and look forward to your continued support on this Project.

Sincerely,

A handwritten signature in dark ink, appearing to read 'M.P. Opalinski', is written over a faint, larger version of the same signature.

M. P. Opalinski
Director of Environmental Affairs

dc



HARDEE POWER PARTNERS LIMITED

RECEIVED

OCT 10 1995

Via Express Mail

Division of Air
Resources Management

October 9, 1995

CLAIM

Mr. Howard Rhodes
Director
Division of Air Resource Management
Florida Department of Environmental
Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RE: Hardee Power Partners
Hardee Power Station
Annual Compliance Test Notification
Conditions of Certification PA 89-25

Dear Mr. Rhodes:

Pursuant to Condition II.A.15 of the Conditions of Certification for Hardee Power Station, please be advised that the annual compliance test will begin on Tuesday, October 24, 1995. In accordance with this condition, after the required testing is completed, a written report of the test results will be submitted to the Department within 45 days of test completion. We will notify you if there are any changes in our testing schedule.

If you need further information concerning this, please call me at (813) 228-4858.

Sincerely,

Paul L. Carpinone
Project Services Manager

PLC/gdb

cc: H. L. Oven, FDEP - Tallahassee

Final Determination

Seminole Electric Cooperative Incorporated
Hardee & Polk Counties, Florida

440 MW COMBINED CYCLE POWER PLANT

Department File No.: PSD-FL-214
(PA-89-25SA)

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

September 21, 1995

Final Determination

The Technical Evaluation and Preliminary Determination for the permits to construct a 440 megawatt (MW) combined cycle power plant consisting of two gas turbine generators, associated heat recovery steam generators, and a single steam turbine-generator at an electrical power plant site near Bowling Green, Hardee County, Florida, was distributed on February 21, 1995. The Notice of Intent to Issue was published in the Herald-Advocate on March 2, 1995. Copies of the evaluation were available for public inspection at the Department offices in Tampa and Tallahassee.

Comments on the evaluation and proposed permits were submitted by the applicant. No comments were submitted by the National Park Service and the U.S. Environmental Protection Agency.

Applicant's Comment:

The applicant requested a higher heat input rate for the combustion turbines and a corresponding increase in the mass emission rates for several of the pollutant, while maintaining the proposed emission concentrations in ppm for NO_x, etc. The applicant also requested an allowance for fuel bound nitrogen of up to 12 ppm for NO_x emissions when firing fuel oil. There were several other editorial changes that were also requested by the applicant.

Department of Environmental Protection (DEP) Response:

DEP concurs with the applicant in granting a higher heat input rate for the combustion turbines together with a corresponding increase in pollutant emissions. This is based on the need for a higher heat input rate in order to maintain the 440 MW electrical power production rate under the most adverse meteorological conditions (high temperature and humidity). The Department agrees that the applicant should get an allowance for fuel bound nitrogen but not to the extent that the applicant requested. The emission limit will remain 42 ppm NO_x. The Department is willing to provide an allowance of up to 6 ppm for NO_x emissions while firing fuel oil. The applicant must be able to substantiate, by fuel testing and continuous monitoring the reasons for excess emissions explainable by fuel-bound nitrogen. The Department agrees with the applicant on editorial changes.

The final action of the Department will be to issue the PSD permit (PSD-FL-214) with the changes noted above.

State of Florida
Department of Environmental Protection
Notice of Permit

In the matter of an
Application for Permit by:

DEP File No. PSD-FL-214
Polk and Hardee Counties

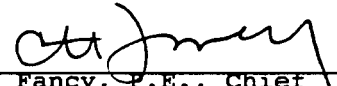
Mr. William C. Walbridge
Executive Vice President
Seminole Electric Cooperative Inc.
Post Office Box 272000
Tampa, Florida 33688-2000

Enclosed is Permit PSD-FL-214 to construct a power plant facility at County Road 663, Hardee County, Fort Green, Florida. This permit is issued pursuant to Section 403, Florida Statutes.

Any party to this Order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 14 days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION


C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF PERMIT and all copies were mailed by certified mail before the close of business on 9-28-95 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to \$120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.


Clerk
9-28-95
Date

Copies furnished to:

W. Thomas, SWD
R. Harwood, PC
J. Harper, EPA
J. Bunyak, NPS
D. Roberts, HGSS
K. Kosky, KBN



Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

PERMITTEE:
Seminole Electric Cooperative
Incorporated
P.O. Box 272000
Tampa, FL 33688-2000

Permit Number: PSD-FL-214
(PA-89-25SA)
Expiration Date: January 1, 2000
County: Polk & Hardee
Latitude/Longitude: 27°38'30"N
81°57'45"W
Project: 440 MW Combined Cycle
Power Plant

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-212 and 62-4. 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 specifically described as follows:

For a 440 MW combined cycle power plant consisting of two 150 MW combustion turbines (CTs), two heat recovery steam generators (HRSGs), a 140 MW steam turbine generator and a 4.4 million gallon fuel oil storage tank. The maximum heat input at 32°F is 1,862 MMBtu/hr/CT (natural gas) and 1,965 MMBtu/hr/CT (oil). The plant will be located at the Polk and Hardee County site near Bowling Green, Florida which is also the site of a 295 MW power plant which is operated by TECO Power Services. The combustion turbines are to be Westinghouse Model 501F or equivalent and equipped with dry low NO_x combustors or an equivalent system for natural gas firing and wet injection for fuel oil firing. The CT will be fired with natural gas and No. 2 low sulfur fuel oil with a sulfur content limit not to exceed 0.05 percent, by weight, as a back-up only.

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:

1. Seminole Electric Cooperative Incorporated's (SECI) application received May 9, 1994.
2. Department's letters dated June 27, September 21, and November 16, 1994.
3. SECI's letters dated August 26, October 6, and November 23, 1994.
4. SECI's letter dated February 9, 1995.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-258A)

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, F.S. 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), F.S., 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 acknowledgment 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 F.S. and Department rules, unless specifically authorized by an order from the Department.

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.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

GENERAL CONDITIONS:

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 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 F.S. or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, F.S. 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 F.S. after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by F.S. or Department rules.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

GENERAL CONDITIONS:

11. This permit is transferable only upon Department approval in accordance with Rules 62-4.120 and 62-730.300, 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 (NSPS)

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.
- 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.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

GENERAL CONDITIONS:

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:

The construction and operation of the project shall be in accordance with all applicable provisions of Chapters 62-210 through 62-297 and 62-4, Florida Administrative Code (F.A.C.), and 40 CFR 60, Subpart GG, Appendix A, Appendix B, and Appendix F (1994 version). The following emission limitations and conditions reflect the BACT determinations for the 300 megawatts (MW; two 150 MW combined cycle combustion turbines) of generating capacity. Each combustion turbine (CT) will be connected to a heat recovery steam generator (HRSG), which will recover the waste heat to produce steam for utilization in a single 140 MW (net) steam generator. There is no fuel firing in the associated HRSG. The facility will have a total nominal generating capacity of 440 MW (net). In addition to the foregoing, the project shall comply with the following Specific Conditions:

A. General Requirements

1. Pursuant to Rule 62-212.200(56), F.A.C., Potential to Emit (PTE), the maximum heat input to each Westinghouse 501F CT, or equivalent, at an ambient temperature of 32°F, shall neither exceed 1,862 MMBtu/hr while firing natural gas nor 1,965 MMBtu/hr while firing fuel oil.
2. Pursuant to Rule 62-212.200(56), F.A.C., PTE, the CTs may operate continuously, i.e., 8,760 hrs/year.
3. Pursuant to Rule 62-212.200(56), F.A.C., PTE, only natural gas or No. 2 fuel oil is allowed to be fired in the CTs. The maximum sulfur content limit of the No. 2 fuel oil shall not exceed 0.05 percent, by weight.
4. Pursuant to Rule 62-212.200(56), F.A.C., PTE, the maximum No. 2 fuel oil consumption allowed to be burned is 41,751,000 gallons per year, which is equivalent to 1500 hours per CT per year of operation at full load(not to exceed 3,000 hrs/yr between the two CTs). The No. 2 fuel oil is to be used as a back-up fuel only.
5. Pursuant to Rule 62-296.310(3), F.A.C., Unconfined Emissions of Particulate Matter (PM), the emissions of unconfined PM shall be minimized during the construction period by covering or watering dust generating areas.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

B. Emission Limits

1. Pursuant to Rule 62-212.410, F.A.C., BACT, the maximum allowable emission limitations from two CTs, when firing natural gas or No. 2 fuel oil, shall not exceed the following:

MAXIMUM ALLOWABLE EMISSION LIMITATIONS

<u>POLLUTANT</u>	<u>FUEL</u>	<u>CONCENTRATION</u>	<u>lbs/hr (a)</u>	<u>TPY (b)</u>	<u>TPY (TOTAL) c</u>
NO _x	Gas	15 ppmvd(d)	106	931	1212
	Oil	42 ppmvd(e)	336	504	
CO	Gas	20 ppmvd	71	622	618
	Oil	25 ppmvd	91	136	
PM/PM ₁₀	Gas		7	65	147
	Oil		67	100	
SO ₂	Gas		5	47	182
	Oil		101	152	
VOC	Gas	5 ppmvd	10	88	99
	Oil	10 ppmvd	21	31	
Sulfuric Acid Mist	Gas		1	6	39
	Oil		22	34	
Beryllium	Oil		0.0049	0.007	0.007
Arsenic	Oil		0.0097	0.014	0.014
Visible Emissions	Gas		≤ 10 percent opacity		
	Oil		≤ 10 percent opacity		

(a) The emission limitations in lbs/hr/CT are a 1-hour average as determined pursuant to the Performance Testing conducted pursuant to Condition C.1 below.

(b) The annual emission limitations (TPY) for natural gas are based on two CTs operating at full load for 8,760 hours per year. The annual emission limitations (TPY) for fuel oil are based on the equivalent of full-load operation for a maximum of 1500 hours per year for each of the two CTs (not to exceed 3,000 hrs/yr between the two CTs). The emission calculations are also based at a worst case ambient temperature of 32°F.

(c) Maximum allowable emissions from two CTs if any fuel oil is burned at the facility during the year. The emission calculations are also based at an ambient temperature of 59°F.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

- (d) The natural gas NO_x allowable emission limitation of 15 ppmvd is corrected to 15 percent O₂. Compliance shall be determined through the initial and annual compliance tests.
- (e) The fuel oil NO_x allowable emission limitation of 42 ppmvd is corrected to 15 percent oxygen. Compliance shall be determined through the initial and annual compliance tests. The annual compliance test will be required if the fuel oil is fired for more than 400 hours in the preceding 12-months.

For fuel oil firing, NO_x emissions of 42 ppmvd @ 15 percent O₂ are based on fuel bound nitrogen (FBN) content of 0.015 percent by weight or less. When FBN levels are above this percentage, the CTs may produce higher NO_x concentrations due to increased fuel NO_x formation. When FBN levels are above 0.015 percent, the operator shall employ all reasonable measures to maintain the NO_x concentrations below 42 ppmvd. However, NO_x emissions (ppmvd and lb/hr), as calculated from the formula below, shall be allowed if the permittee submits data (FBN levels from most recent fuel shipment or as fired fuel sampling and hourly averages of: fuel rate, heat rate, ambient conditions, and NO_x control system parameters) which demonstrates that emissions (hourly averages) above 42 ppmvd are due solely to FBN levels above 0.015 percent.

The emission level for NO_x is adjusted for higher fuel nitrogen contents up to a maximum of 0.030 percent by weight as follows:

FUEL BOUND NITROGEN %(by weight)	NO _x LEVELS (ppmvd @ 15% O ₂)	NO _x EMISSIONS (lb/hr/CT) ¹	NO _x EMISSIONS INCREASE (TPY) ¹
0.015 or less	42	336.2	0
0.020	44	352.1	0
0.020	46	368.2	0
0.030	48	384.2	0

1 - From 336.2 lb/hr/CT at 32⁰F basis.

For intermediate values of FBN use the formula:

$$STD = 0.0042 + F$$

where,

STD = allowable NO_x emissions (ppmvd @ 15% O₂)

F = NO_x emission allowance for fuel bound nitrogen

and

N (fuel bound nitrogen), is defined as follows:

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

N (% by weight)	F (NO _x % by volume)
0<N≤ 0.015	0
0.015<N≤ 0.030	0.04 (N-0.015)
0.030<N	0.0006

2. The following estimated CT emissions are tabulated for PSD tracking purposes only:

ESTIMATED EMISSIONS

<u>POLLUTANT</u>	<u>FUEL</u>	<u>TPY</u>
Lead	Oil(a,b)	0.16
Fluoride	Oil(a,b)	0.090
Mercury	Gas(c)	0.0003
	Oil(a,b)	0.024

(a) The annual emission limitations (TPY) for fuel oil are based on full-load operation for a total of 3,000 hours per year between the two CTs at an ambient temperature of 59°F.

(b) The No. 2 fuel oil shall have a maximum sulfur content limit of 0.05 percent, by weight.

(c) The annual emission limitation (TPY) for natural gas is based on two CTs operating at full-load for 8,760 hours per year at an ambient temperature of 59°F.

3. The permittee will install a dry low-NO_x combustor system or an equivalent system on each CT. The permittee shall make every practicable effort to achieve the lowest possible NO_x emission rate, but must not exceed 15 ppmvd at 15 percent O₂ per CT on a continuous basis when firing natural gas.

4. After the initial compliance tests on the CTs, the permittee shall operate a certified continuous emissions monitor for NO_x emissions and collect 12 months of monitoring data. The monitor will, at a minimum, meet the requirements of 40 CFR 60, Appendix F's quality assurance procedures. Within 18 months after the initial compliance test, the permittee shall prepare and submit

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

for the Department's review an engineering report regarding the collection and the analysis of the data gathered from the monitor. In addition, this report shall include a conclusion regarding the lowest NO_x emission rate that can be consistently achieved with a reasonable operating margin, taking into account long-term performance expectations and assuming good operating and maintenance practices. The report shall also include results of the testing requirements of 40 CFR 60, Appendix F's quality assurance procedures and the actual CEMS data for the period of the study in an acceptable format.

5. The Department will make a determination as to whether to seek to revise the permitted NO_x emission limitation and will base it on the engineering data report submitted by the permittee. If the data demonstrate that a NO_x emission rate of less than 15 ppmvd at 15 percent O₂ is consistently achievable, the NO_x emission limit may be adjusted accordingly, but not lower than 9 ppmvd at 15 percent O₂.

6. Excess emissions from a turbine resulting from start up, shutdown, malfunction, fuel switch or load change shall be reported in accordance with 40 CFR 60.334(c) and accepted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24-hour period unless specifically authorized by the Department for a longer duration. The permittee shall provide a general description of the procedures to be followed during periods of start up, shutdown, malfunction, fuel switch or load change to ensure that the best operational practices to minimize emissions will be adhered to and the duration of any excess emissions will be minimized. The description should be submitted to the Department along with the initial compliance test data. The description may be updated as needed by submitting such update to the Department within thirty (30) days of implementation.

7. Excess emissions from fuel switching shall not exceed 15 minutes.

8. Excess emissions due to fuel bound nitrogen levels above 0.015 percent are allowed pursuant to Condition B.1 foot note (e) of the emission limitation table.

C. Performance Testing

1. Initial (I) compliance tests shall be performed on each CT using both fuels. Testing of emissions shall be conducted at

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

95-100% of the manufacturer's rated heat input based on the average ambient air temperature for the CT during the test. Annual (A) compliance tests shall be performed on the CT with the fuel(s) used for more than 400 hours in the preceding 12-month period. Tests at permit renewal shall also be performed on the non-PSD pollutants. Tests and procedures shall be in accordance with 40 CFR 60.335. Tests shall be conducted using EPA reference methods in accordance with 40 CFR 60, Appendix A, as adopted by reference in Chapter 62-297, F.A.C., and follows:

- a. Reference Method 5B for PM (I, A: for oil only; assumption is that all PM is PM₁₀).
- b. Reference Method 9 for VE (I, A).
- c. Reference Method 10 for CO (I, A).
- d. Reference Method 20 for NO_x (I, A) or Method 7E if sampling downstream of the heat recovery steam generator.
- e. Reference Method 18 or 25A for VOC (I, A).
- f. Reference Method 8 for H₂SO₄ Mist (I, A).
- g. Trace elements of Beryllium (Be) and Arsenic (As) shall be tested (I, for oil only) using EMTIC Interim Test Methods. As an alternative, EPA Method 104 for Be may be used; or, Be and As may be determined from fuel analysis using either Method 7090 or 7091 and sample extraction using Method 3040, as described in the EPA solid waste regulations SW 846.
- h. ASTM D4294 (or equivalent) for sulfur content of distillate oil (I and A), which can be used for determining SO₂ emissions annually.
- i. ASTM D1072-80, D3031-81, D4084-82, or D3246-81 (or equivalent) for sulfur content of natural gas (I; and, A if deemed necessary by the Department).
- j. Other U.S. EPA or DEP approved test methods for the permitted facilities may be used for compliance testing after departmental approval. Unless the permittee requests to modify a reference method, or to use a method for which a method was not designed, such approval shall not constitute an alternative test procedure under Section 62-297.620, F.A.C., or otherwise require modification of the permit.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

2. The maximum sulfur content of the fuel oil shall not exceed 0.05 percent, by weight. Compliance shall be demonstrated in accordance with the requirements of 40 CFR 60.334(b).

3. As an alternative to Condition C.1.i above, natural gas supplier data for sulfur content may be submitted. However, the applicant is responsible for ensuring that the procedures above are used for determination of fuel sulfur content. Analysis may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency pursuant to 40 CFR 60.335(e) (1993 version). Any request for a future custom monitoring schedule shall be made in writing to the Department's Bureau of Air Regulation. Any custom schedule approved by the USEPA pursuant to 40 CFR 60.334(b) (1993 version) will be recognized as enforceable provisions of the permit.

D. Monitoring Requirements

Monitoring of operations shall be in accordance with 40 CFR 60.334. Also, and for each CT, the permittee shall install, operate, and maintain a continuous emission monitoring system (CEMS) to monitor nitrogen oxides in accordance with 40 CFR 60, Appendix F, and, if necessary, a diluent gas (CO₂ or O₂). The Federal Acid Rain Program requirements of 40 CFR 75 shall apply when those requirements are adopted and if applicable.

1. Each CEMS shall meet performance specifications of 40 CFR 60, Appendix B.

2. CEMS data shall be recorded and reported in accordance with Rule 62-297.500, F.A.C.; 40 CFR 60; and, 40 CFR 75, if it becomes applicable. The record shall include periods of start up, shutdown, load change, fuel switch, high fuel bound nitrogen, and malfunction.

3. A malfunction means any sudden and unavoidable failure of air pollution control equipment or process equipment to operate in a normal or usual manner. Failures that are caused entirely or in part by poor maintenance, careless operation or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions.

4. The procedures under 40 CFR 60.13 shall be followed for installation, evaluation, and operation of all CEMS. If applicable, 40 CFR 75 shall apply when the Federal Acid Rain Program is adopted.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

5. For purposes of the reports required under this permit, excess emissions, as determined pursuant to Condition B.6 herein, are defined as any calculated average emission rate which exceeds the applicable emission limitation in Condition B.1.

E. Notification, Reporting and Recordkeeping

1. To determine compliance with the natural gas and fuel oil firing heat input limitation, the permittee shall maintain daily records of natural gas and fuel oil consumption for each turbine, and provide the heating value for each fuel during the compliance test. 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.

2. The project shall comply with all the applicable requirements of Chapters 62-210 through 62-297 and 62-4, F.A.C., and 40 CFR 60, Subparts A and GG. The requirements shall include:

- a. 40 CFR 60.7(a)(1) - By postmarking or delivering notification of the start of construction no more than 30 days after such date.
- b. 40 CFR 60.7(a)(2) - By postmarking or delivering notification of the anticipated date of the initial start up of each CT not less than 30 days prior to such date.
- c. 40 CFR 60.7(a)(3) - By postmarking or delivering notification of the actual start up of each turbine within 15 days after such date.
- d. 40 CFR 60.7(a)(5) - By postmarking or delivering notification of the date for demonstrating the CEMS performance, no less than 30 days prior to such date.
- e. 40 CFR 60.7(a)(6) - By postmarking or delivering notification of the anticipated date for conducting the opacity observations no less than 30 days prior to such date.
- f. 40 CFR 60.7(b) - By initiating a recordkeeping system to record the occurrence and duration of any start up, shutdown, load change, fuel switch, high fuel bound nitrogen, and malfunction of a turbine, malfunction of the air pollution control equipment, and the periods when the CEMS is inoperable.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

- g. 40 CFR 60.7(c) - By postmarking or delivering a quarterly excess emissions and monitoring system performance report within 30 days after the end of each calendar quarter. This report shall contain the information specified in 40 CFR 60.7(c) and (d).
 - h. 40 CFR 60.8(a) - By conducting all performance tests within 60 days after achieving the maximum turbine and boiler firing rates, but not more than 180 days after the initial start up of each CT.
 - i. 40 CFR 60.8(d) - By postmarking or delivering notification of the date of each performance test required by this permit at least 30 days prior to the test date; and,
 - j. Rule 62-297.345 - By providing stack sampling facilities for each turbine.
 - k. All notifications and reports required by this specific condition shall be submitted to the Department's Southwest District office. Performance test results shall be submitted within 45 days of completion of such test.
3. The following information shall be submitted to the Department's Bureau of Air Regulation within 90 days after the permittee has made the selection of the following:
- a. Description of the final selection of the turbines for installation at the facility. The descriptions shall include the specific make and model numbers and any changes in the proposed method of operation, fuels, emissions or equipment.
 - b. Description of the CEMS selected. The description shall include the type of sensors and the manufacturer and model numbers of the equipment.
4. The following protocols shall be submitted to the Department's Southwest District office for approval:
- a. CEMS Protocol - Within 120 days after selection of the CEMS, but 180 days prior to the initial startup, a CEMS protocol describing the system, its installation, operating and maintenance characteristics and requirements. The protocol shall meet the requirements of 40 CFR 60.13, Appendix B and Appendix F or 40 CFR 75, and be approved within 60 days.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

- b. Performance Test Protocol - At least 90 days prior to conducting the initial performance tests required by this permit, the permittee shall submit to the Department's Southwest District office a protocol outlining the procedures to be followed, the test methods and any differences between the reference methods and the test methods proposed to be used to verify compliance with the conditions of this permit. The Department shall approve the testing protocol within 60 days provided that it meets the requirements of this permit.
- c. Heat Input Curves - Within 120 days after final selection of the turbine, but 180 days prior to initial startup of the turbine, manufacturer's curves or equations of heat input corrections to other temperatures shall be provided to the Department. Subject to the approval by the Department for technical validity while applying sound engineering principles, the manufacturer's curves shall be used to establish the heat input rates over a range of temperatures for the purposes of compliance determination.

F. Modifications

The permittee shall give written notification to the Department when there is any modification to this facility pursuant to Rule 62-212.200, F.A.C., Definitions - Modifications. This notice shall be submitted sufficiently in advance of any critical date involved to allow sufficient time for review, discussion, and revision of plans, if necessary. Such notice shall include, but not be limited to, information describing the precise nature of the change; modifications to any emission control system; production capacity of the facility before and after the change; and, the anticipated completion date of the change.

G. No. 2 Fuel Oil Storage Tank

The permittee shall be in compliance with the monitoring requirements of 40 CFR 60.116b(a) and (b).

H. Additional General Conditions

- 1. Pursuant to Rule 62-4.090, F.A.C., the permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation prior to 60 days before the expiration of the permit.

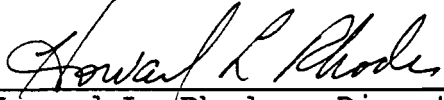
PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-258A)

SPECIFIC CONDITIONS:

2. An application for an operation permit pursuant to Rule 62-4.220, F.A.C., is not required if the facility is also certified under the Power Plant Siting Act, Chapter 403, Part II, F.S. That certification serves as the operation permit also. The permittee must submit an application for an operation permit for a major source of pollution pursuant to Chapter 62-213, F.A.C.

**STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION**



Howard L. Rhodes, Director
Division of Air Resources
Management

Best Available Control Technology (BACT) Determination
Seminole Electric Cooperative Incorporated (SECI)
Hardee and Polk Counties
PSD-FL-214
PA89-25SA

The applicant proposes to install two combined cycle combustion turbine (CT) generators and associated steam cycle at a facility adjacent to the Hardee Power Station's existing units located in Hardee and Polk Counties. The facility, referred to as Hardee Unit 3, will consist of two 150 megawatt (MW) Westinghouse Model 501F, or equivalent, advanced CTs. Each CT will be connected to a heat recovery steam generator (HRSG), which will recover the waste heat to produce steam for utilization in a single 140 MW (net) steam turbine. The facility will have a total nominal generating capacity of 440 MW (net). The primary fuel for the CTs will be natural gas, with distillate fuel oil containing a maximum sulfur content of 0.05 percent, by weight, designated as the backup fuel. Natural gas will be transported to the facility via pipeline and fuel oil will be delivered by truck and stored on site in a 4.4 million gallon above ground storage tank.

In 1990, the Hardee Power Station was certified for 660 MW of generation in a phased construction schedule as follows:

1. TECO Power Services - 295 MW (1993) (Phase 1A).
2. TECO Power Services - 145 MW (future unit) (Phase 1B).
3. SECI - 220 MW (date unspecified) (Phase 2).

This new certification does not change Phases 1A and 1B, above, but will increase the SECI certified generation (Phase 2) from 220 MW to 440 MW, with an inservice date of January, 1999. A simplified flow diagram of Hardee Unit 3 is shown in Figure 1. Because of the phased construction activity, the Department looked at the total emissions from the Phase 2 project to see if any additional pollutants (i.e., Hg, Pb, etc.) should be reviewed from the BACT determination process.

The applicant has indicated the maximum annual air pollutant emission rates associated with the facility, based on 100 percent capacity factor and type of fuel fired, to be as follows:

Emissions (TPY)					PSD Significant Emission Rate (TPY)	Subject to PSD Review?
Pollutant	Fuel Oil	Natural Gas	Natural Gas- Steam for Power Augmentation	Total		
<u>Potential Emissions^a</u>						
SO ₂	145	36.7	NA	182	40	Yes
PM/PM ₁₀	95.4	51.5	NA	147	25/15	Yes
NO _x	479.9	732.6	NA	1,212	40	Yes
CO	128	489.5	NA	618	100	Yes
VOC	29.2	69.9	NA	99	40	Yes
Lead	0.16	NA	NA	0.16	0.6	No
Arsenic	0.014	NA	NA	0.014	Any	Yes
Beryllium	0.007	NA	NA	0.007	0.0004	Yes
Fluoride	0.090	NA	NA	0.090	3	No
Mercury	0.025	0.00035	NA	0.025	0.1	No
Sulfuric Acid Mist	32.2	7.24	NA	39	7	Yes

Note: NA = not applicable.

^a Emission rates are based on two CTs firing fuel oil for 1,500 hours each and natural gas for 7,260 hours at ambient temperature of 59°F (without power augmentation) and relative humidity of 60 percent.

Rule 62-212.400, Florida Administrative Code (F.A.C.), Stationary Source Preconstruction Review, requires a BACT review for all regulated pollutants emitted in an amount equal to or greater than the significant emission rates listed in the previous table.

Date of Receipt of a BACT Application
 May 9, 1994.

BACT Determination Requested by the Applicant

BEST AVAILABLE COPY

FIGURE 1

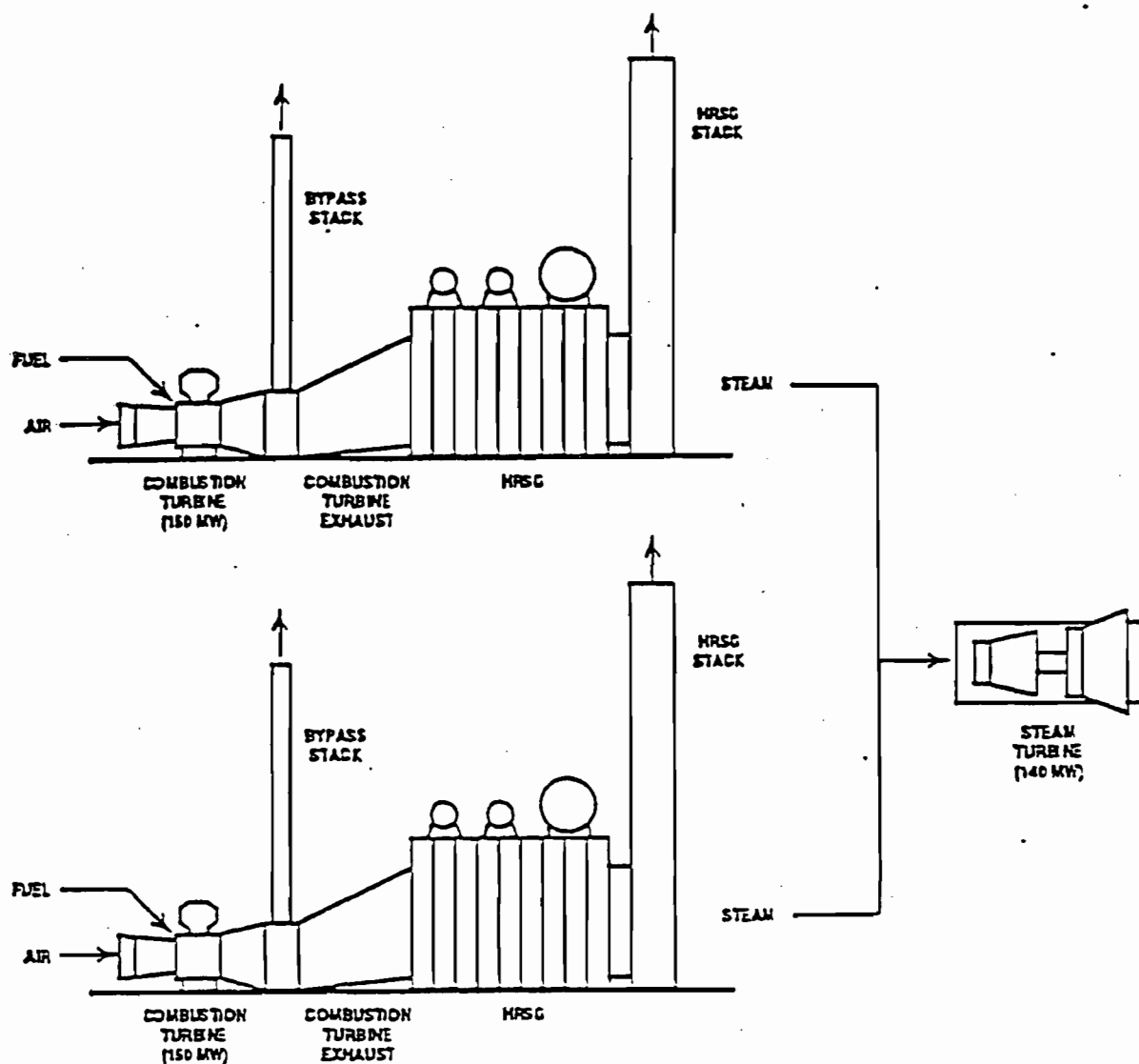


Figure 2-4
Schematic Flow Diagram of Hardee Unit 3 Facility



SEMINOLE
ELECTRIC
COOPERATIVE
INCORPORATED

Combined Cycle Combustion Turbines

<u>Pollutant</u>	<u>Fuel</u>	
	<u>Natural Gas</u>	<u>Fuel Oil</u>
NO _x	15 ppmvd @ 15% O ₂ at ISO 25 ppmvd @ 15% O ₂ at ISO (power augmentation mode) Dry Low NO _x Burners	42 ppmvd @ 15 % O ₂ & 0.0015% FBN at ISO Water Injection Limited Fuel Oil Operation
SO ₂	Firing with Natural Gas	Low Sulfur Fuel Oil (0.05 %, by weight) Limited Fuel Oil Operation
CO	20 ppmvd 50 ppmvd (power augmentation mode) Combustion Control	25 ppmvd Combustion Control Limited Fuel Oil Operation
VOC	5 ppmvd Combustion Control	10 ppmvd Combustion Control
PM/PM ₁₀	Combustion Control	Combustion Control Limited Fuel Oil Operation
Beryllium	Good Quality Fuel	Good Quality Fuel Limited Fuel Oil Operation
Inorganic Arsenic	Good Quality Fuel	Good Quality Fuel Limited Fuel Oil Operation
Benzene	Combustion Control	N/A

BACT Determination Procedure

In accordance with Rule 62-212.410, F.A.C., BACT Review, Stationary Source - Preconstruction Review, the BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department, on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that in making the BACT determination the Department shall give consideration to:

- (a) Any Environmental Protection Agency determination of BACT pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 (Standards of Performance for New Stationary Sources) or 40 CFR Part 61 (National Emission Standards for Hazardous Air Pollutants).

- (b) All scientific, engineering, and technical material and other information available to the Department.
- (c) The emission limiting standards or BACT determinations of any other state.
- (d) The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine for the emission source in question the most stringent control available for a similar or identical source or source category. If it is shown that this level of control is technically or economically infeasible for the source in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

The air pollutant emissions from combined cycle power plants can be grouped into categories based upon what control equipment and techniques are available to control emissions from these facilities. Using this approach, the emissions can be classified as follows:

- o Combustion Products (e.g., particulate matter and trace metals). Controlled generally by good combustion of clean fuels.
- o Products of Incomplete Combustion (e.g., CO and VOCs). Control is largely achieved by proper combustion techniques.
- o Acid Gases (e.g., SO₂, NO_x). Controlled generally by gaseous control devices and fuel quality.

Grouping the pollutants in this manner facilitates the BACT analysis because it enables the equipment available to control the type or group of pollutants emitted and the corresponding energy, economic, and environmental impacts to be examined on a common basis. Although all of the pollutants addressed in the BACT analysis may be subject to a specific emission limiting standard as a result of PSD review, the control of "nonregulated" air pollutants is considered in imposing a more stringent BACT limit on a "regulated" pollutant (i.e., particulate matter, sulfur dioxide, fluorides, sulfuric acid mist, etc.), if a reduction in "nonregulated" air pollutants can be directly attributed to the control device selected as BACT for the abatement of the "regulated" pollutants.

BACT POLLUTANT ANALYSIS

COMBUSTION PRODUCTS

Particulate Matter (PM/PM₁₀)

The design of the CT system ensures that PM/PM₁₀ will be minimized by combustion control and the use of clean fuels. The PM/PM₁₀ emissions from the CTs, when burning natural gas and fuel oil, will not exceed 7 lbs/hr/CT (gas) and 67 lbs/hr/CT (oil) for the Westinghouse 501F, or equivalent, (with no power augmentation) at 100% load. The assumption is that all PM emissions are PM₁₀ emissions.

Beryllium and Inorganic Arsenic (Be, As)

The Department agrees with the applicant's rationale that there are no feasible methods to control Be, As, and other trace pollutants, except by requiring good quality fuel. Limiting the fuel sulfur content to a maximum of 0.05%, by weight, assures good quality fuel and minimizes any concerns for these pollutants.

PRODUCTS OF INCOMPLETE COMBUSTION

Carbon Monoxide (CO) and Volatile Organic Compounds (VOC)

The emissions of CO exceed the PSD significant emission rate of 100 TPY with the Westinghouse 501F CT. The applicant has indicated that the CO emissions from the proposed combined cycle CTs with dry low-NO_x combustors are 20 ppmvd for natural gas firing (50 ppmvd during power augmentation) and 25 ppmvd for fuel oil firing with water injection. VOC emissions have been based on exhaust concentrations of 5 & 10 ppmvd for natural gas and fuel oil firing, respectively.

The majority of BACT emissions limitations have been based on combustion controls for CO and VOC minimization. Additional control is achievable through the use of catalytic oxidation. Catalytic oxidation is a post-combustion control that has been employed in CO nonattainment areas where regulations have required CO emission levels to be less than those associated with wet injection. These installations have been required to use LAER technology and typically have CO limits in the 10 ppmvd range.

In an oxidation catalyst control system, CO emissions are reduced by allowing unburned CO to react with oxygen at the surface of a precious metal catalyst, such as platinum. Oxidation of CO starts at about 300°F, with efficiencies above 90 percent occurring at temperatures above 600°F. Catalytic oxidation occurs at

temperatures 50 percent lower than that of thermal oxidation, which reduces the amount of thermal energy required. For CT/HRSG combinations, the oxidation catalyst can be located directly after the CT or in the HRSG. Catalyst size depends upon the exhaust flow, temperature, and desired efficiency.

The application of oxidation catalyst is not technically feasible for gas turbines fired with fuel oil due to the oxidation of sulfur compounds and excessive formation of H_2SO_4 mist emissions. Catalytic oxidation has not been demonstrated on a continuous basis when using fuel oil.

Use of oxidation catalyst technology would be feasible for a natural gas-fired unit; however, the cost effectiveness of \$4,000 per ton of CO removed for the Westinghouse 501F CT unit will have an economic impact on this project.

ACID GASES

Nitrogen Oxides (NO_x)

The emissions of NO_x represent a significant portion of the total emissions generated by this project and need to be controlled, if deemed appropriate. As such, the applicant presented an extensive analysis of the different available technologies for NO_x control.

The applicant has stated that BACT for NO_x will be met by using dry low- NO_x combustors to limit emissions to 15 ppmvd (corrected to 15% O_2 at ISO conditions) when burning natural gas (25 ppmvd corrected to 15% O_2 at ISO conditions during power augmentation) and 42 ppmvd (corrected to 15% O_2 at ISO conditions) with water injection and when burning fuel oil.

A review of the EPA's BACT/LAER Clearinghouse indicates that the lowest NO_x emission limit established to date for a combustion turbine is 4.5 ppmvd at 15% oxygen. This level of control was accomplished through the use of water injection and a selective catalytic reduction (SCR) system.

SCR is a post-combustion method for control of NO_x emissions. The SCR process combines vaporized ammonia with NO_x in the presence of a catalyst to form nitrogen and water. The vaporized ammonia is injected into the exhaust gases prior to passage through the catalyst bed. The SCR process can achieve up to 90% reduction of NO_x with a new catalyst. As the catalyst ages, the NO_x reduction efficiency, while holding ammonia slip emissions constant, will decrease.

The effect of exhaust gas temperature on NO_x reduction depends on the specific catalyst formulation and reactor design. Generally, SCR units can be designed to achieve effective NO_x control over a 100-300°F operating window within the bounds of 450-800°F. The preferable operating window is within the bounds of 600-750°F for effective NO_x control.

Most commercial SCR systems operate over a temperature range of about 600-750°F. At levels above and below this window, the specific catalyst formulation will not be effective and NO_x reduction will decrease. Operating at high temperatures can permanently damage the catalyst through sintering of surfaces. Increased water vapor content in the exhaust gas (as would result from water or steam injection in the gas turbine combustor) can shift the operating temperature window of the SCR reactor to slightly higher levels.

As stated by the applicant, the exhaust temperatures of the proposed combined cycle CTs for this site are between 950°F to 1100°F. However, catalyst can be located in the appropriate temperature range in the HRSG, but the applicant has stated that effective SCR operation will be difficult to maintain under significant load and ambient temperature variations. In this case, application of an SCR system appears to be technically feasible.

Although technically feasible, the applicant has rejected using SCR on the combined cycle units because of economic, energy, and environmental impacts. The applicant has identified the following limitations:

- a) Reduced power output.
- b) Emissions of unreacted ammonia (slip).
- c) Increased H₂SO₄ mist emissions.
- d) Disposal of hazardous waste generated (spent catalyst).
- e) Ammonium bisulfate and ammonium sulfate particulate matter emissions (ammonium salts) due to the reaction of NH₃ with SO₃ present in the exhaust gases.
- f) Cost effectiveness for the application of SCR technology to the project was considered to be \$6,802 per ton of NO_x removed when compared to the use of dry low-NO_x combustors.

Since SCR has been determined to be BACT for several combined cycle facilities, the EPA has clearly stated that there must be unique circumstances to consider the rejection of such control on the basis of economics.

In a recent letter from EPA Region IV to the Department regarding the permitting of a combined cycle facility (Tropicana Products, Inc.), the following statement was made:

"In order to reject a control option on the basis of economic considerations, the applicant must show why the costs associated with the control are significantly higher for this specific project than for other similar projects that have installed this control system or in general for controlling the pollutant."

For fuel oil firing, the cost associated with controlling NO_x emissions must take into account the potential operating problems that can occur with using SCR in the oil firing mode.

A concern associated with the use of SCR on combined cycle projects is the formation of ammonium bisulfate. For the SCR process, ammonium bisulfate can be formed due to the reaction of sulfur in the fuel and the ammonia injected. The ammonium bisulfate formed has a tendency to plug the tubes of the HRSG, thus leading to operational problems. As this is the case, SCR has been judged to be technically infeasible for oil firing in some previous BACT determinations.

The latest information available now indicates that SCR can be used for oil firing provided that adjustments are made in the ammonia to NO_x injection ratio. For natural gas firing operation, NO_x emissions can be controlled with up to a 90 percent efficiency using a 1 to 1 or greater ammonia injection ratio. By lowering the injection ratio for oil firing, testing has indicated that NO_x can be controlled with efficiencies ranging from 60 to approximately 75 percent. When the injection ratio is lowered, there is not a problem with ammonium bisulfate formation since essentially all of the ammonia is able to react with the NO_x present in the combustion gases. Furthermore, by using low sulfur fuel oil with low metal content and limiting excess air, the amount of sulfur trioxide available to form ammonium bisulfate is minimized. Based on this strategy SCR has been both proposed and established as BACT for oil fired combined cycle facilities with NO_x emission limits ranging from 11.7 to 25 ppmvd depending on the efficiency of control established.

The applicant has indicated that the total levelized annual operating cost to install SCR for this project at 100 percent capacity factor and burning natural gas is \$4,544,600. Taking into consideration the total annual cost, a cost/benefit analysis of using SCR can now be developed.

For the Westinghouse 501F combined cycle CT and based on the information supplied by the applicant, it is estimated that the maximum annual NO_x emissions using dry low-NO_x combustors will be 1,212 tons/year (assuming 7,260 and 1,500 hours of operation per year while firing natural gas and fuel oil, respectively). Assuming that SCR would reduce the NO_x emissions from 15 ppmvd to 9 ppmvd when firing natural gas, and from 42 ppmvd to 15 ppmvd when firing fuel oil, 610 tons of NO_x would be emitted annually. When this reduction of 602 TPY is compared with the application of dry low-NO_x combustors and considering the total levelized annual operating cost differential to be \$4,544,600, the cost per ton of controlling NO_x is \$7,549. These calculated costs are higher than has previously been approved as BACT.

A review of the latest Department BACT determinations show limits of 15 ppmvd (natural gas) using low-NO_x combustor technology for combined cycle CTs. Combustion turbine manufacturers are currently developing programs using both steam/water injection and dry low-NO_x combustor technology to achieve a NO_x emission control level of 9 ppmvd when firing natural gas.

Sulfur Dioxide (SO₂)

The applicant has stated that SO₂ emissions will be controlled by using fuel oil with a maximum sulfur content of 0.05%, by weight. This will result in an annual emissions rate of 140 TPY of SO₂ (each CT operating at 1,500 hours per year on fuel oil) plus 37 TPY of SO₂ when firing natural gas.

In accordance with the "top down" BACT review approach, only two alternatives exist that would result in lower SO₂ emissions. These include the use of a lower sulfur content fuel oil or the use of wet lime injection or limestone-based scrubbers, otherwise known as flue gas desulfurization (FGD).

In developing the NSPS for stationary gas turbines, EPA recognized that FGD technology was inappropriate to apply to these combustion units. EPA acknowledged in the preamble of the proposed NSPS that "Due to the high volumes of exhaust gases, the cost of flue gas desulfurization (FGD) to control SO₂ emissions from stationary gas turbines is considered unreasonable." EPA reinforced this point when, later on in the preamble, they stated that "FGD... would cost about two to three times as much as the gas turbine." The economic impact of applying FGD today would be no different.

Furthermore, the application of FGD would have negative environmental and energy impacts. Sludge would be generated that would have to be disposed of properly, and there would be increased

utility (electricity and water) costs associated with the operation of a FGD system. Finally, there is no information in the literature to indicate that FGD has ever been applied to stationary gas turbines burning distillate oil.

The elimination of flue gas control as a BACT option then leaves the use of low sulfur fuel oil as the next option to be investigated. The use of No. 2 fuel oil with a maximum sulfur content limit of 0.05%, by weight, as proposed by the applicant, is acceptable as BACT for this project.

BACT Determination by the Department

Combined Cycle CTs

NO_x Control

The information that the applicant presented indicates that the cost per ton of controlling NO_x for these turbines is \$6,802, which is significantly higher when compared with other BACT determinations that require SCR. Operational experience of utilities elsewhere indicates that catalysts are lasting longer than expected. Therefore the Department believes the costs are somewhat lower. Based on the information presented by the applicant, the Department accepts the applicants conclusion that the use of SCR for NO_x control is not justifiable as BACT at this time.

A review of the permitting activities for combined cycle proposals across the nation indicates that SCR has been required and most recently proposed for installations with a variety of operating conditions (i.e., natural gas, fuel oil, coal and various capacity factors). The cost and other concerns expressed by the applicant are accepted and the Department determines that water injection and dry low-NO_x burner design as BACT for NO_x for this project for fuel oil and natural gas, respectively.

The applicant has proposed a NO_x emission limit of 106 lbs/hr/CT (15 ppmvd for natural gas) without power augmentation. CT manufacturers are currently offering NO_x guarantees of approximately 9 ppmvd. However, these CT manufacturers have no commercial operating experience to validate this guarantee basis. Considering the uncertainty regarding the basis of CT manufacturer's guarantees and the lack of commercial operating experience at this lower emission level, the Department has determined that a NO_x emission limit of 15 ppmvd @ 15% O₂ (106 lbs/hr/CT) for continuous compliance [1-hour average, not corrected to ISO conditions], is required. Several prior CT projects have already been permitted at 15 ppmvd @ 15% O₂ (natural gas) and 42 ppmvd @ 15% O₂ (No. 2 fuel oil). In those prior BACT

determinations, no allowances have been made for fuel bound nitrogen or for power augmentation operation. Measured NO_x concentrations shall not be corrected to ISO conditions to determine compliance with these BACT standards. Based on the first 12 months of actual operating data using natural gas, the Department may seek to revise and lower the NO_x emissions standard from 15 ppmvd @ 15% O₂ to no lower than 9 ppmvd @ 15% O₂; again, the NO_x emissions standard will not be ISO corrected.

SO₂ Control

BACT for SO₂ is the burning of No. 2 fuel oil with a maximum sulfur content limit of 0.05%, by weight. The Department accepts the applicant's proposal as BACT for this project.

VOC and CO Control

The Department is in agreement with the applicant's proposal of good combustion and operating practices as BACT for CO and VOCs for this project.

Other Emissions Control

The emission limitations for PM/PM₁₀, Visible Emissions, Be, and As are based on previous BACT determinations for similar facilities. Although the emissions of these pollutants could be controlled by particulate matter control devices, such as a baghouse or scrubber, the amount of emission reductions would not warrant the added expense. The Department accepts the applicant's proposed strategy of requiring good quality fuel for controlling these pollutants as BACT for the two combined cycle CT units.

The BACT emission limits for the Hardee Unit 3 project of two CTs for generating 300 MW and a single 140 MW steam turbine are as follows:

440 MW TOTAL COMBINED CYCLE COMBUSTION TURBINES

Pollutant	Emission Standards/Limitations		Method of Control
	Oil(a)	Gas(b)	
NO _x	42 ppmvd @ 15% O ₂	15 ppmvd(c) @ 15% O ₂	Water Injection on oil; Dry Low-NO _x Combustor on gas
CO	25 ppmvd	20 ppmvd	Combustion controls; Limited Fuel Oil Operation
PM & PM ₁₀	67 lbs/hr	7 lbs/hr	Combustion controls; Limited Fuel Oil Operation
Visible Emissions	≤ 10% Opacity ≤ 10% Opacity		Natural Gas No. 2 Fuel Oil
SO ₂	0.05% S	1 gr S/100 scf	No. 2 Fuel Oil (max. 0.05% sulfur content limit, by weight)
VOC	10 ppmvd	5 ppmvd	Combustion controls
Be	--	--	Fuel Quality
As	--	--	Fuel Quality
Benzene	--	--	Fuel Quality

- (a) No. 2 fuel oil with a maximum limit of 0.05% sulfur content, by weight. Fuel oil firing shall not exceed an equivalent of 1,500 hours per year per CT at full load (not to exceed 3,000 hrs/yr between the two CTs).
- (b) Natural gas firing of up to 8,760 hours per year.
- (c) Interim limit. May be retained or lowered (as low as 9 ppmvd at 15% O₂) based on the results of a study of the first 12 months of commercial operation.

BACT: Hardee Unit 3
PSD-FL-214
PA-89-25SA
Page 13

Details of the Analysis May be Obtained by Contacting:

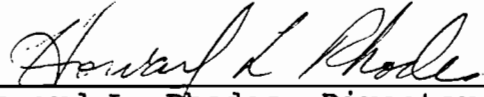
Mr. A. A. Linero, P.E., Administrator
New Source Review Section
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended by:


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

9/27 1995
Date

Approved by:


Howard L. Rhodes, Director
Division of Air Resources Management

9/27 1995
Date

2 127 632 526



Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to	
William Walbridge	
Street and No.	
Seminole Electric	
P.O., State and ZIP Code	
Tampa, FL	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	
9-28-95	
PSD-FI-214	

PS Form 3800, March 1993

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- 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.

3. Article Addressed to:
William C. Walbridge
Seminole Electric Corp.
P.O. Box 272000
Tampa, FL 33688-2000

5. Signature (Addressee)

6. Signature (Agent)

[Signature]

I also wish to receive the following services (for an extra fee):

- 1 ☐ Addressee's Address
2 ☐ Restricted Delivery

Consult postmaster for fee.

4a. Article Number

2 127 632 526

4b. Service Type

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

7. Date of Delivery

10-2-95

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

PS Form 3811, December 1991

GPO: 1993-352-714

DOMESTIC RETURN RECEIPT

Thank you for using Return Receipt Service.

Memorandum

Florida Department of
Environmental Protection

(al)

TO: Howard L. Rhodes
THROUGH: Clair Fancy *CTA*
FROM: A. A. Linero *AAL* *Lead* 9/18
DATE: September 18, 1995
SUBJECT: Approval of Permit
Seminole/Hardee Unit 3

Attached for your approval is an air construction permit and BACT determination for Hardee Unit 3 to be built by Seminole Electric Cooperative Inc. (SECI).

The project is for a combined cycle unit consisting of two 150 MW combustion turbines and a 140 MW heat recovery steam generator.

Emissions controls include firing natural gas with very low sulfur fuel oil as backup. Other controls include dry low-NOx to limit NOx concentrations to 15 ppm under gas operation and steam injection to limit NOx concentrations to 42 ppm while firing fuel oil.

The Site Certification with these same conditions was already approved by the Governor. There are no outstanding issues.

AAL/sa/t

HOPPING GREEN SAMS & SMITH

PROFESSIONAL ASSOCIATION

ATTORNEYS AND COUNSELORS

123 SOUTH CALHOUN STREET

POST OFFICE BOX 6526

TALLAHASSEE, FLORIDA 32314

(904) 222-7500

FAX (904) 224-8551

FAX (904) 425-3415

March 30, 1995

JAMES S. ALVES
BRIAN H. BIBEAU
KATHLEEN BLIZZARD
ELIZABETH C. BOWMAN
RICHARD S. BRIGHTMAN
PETER C. CUNNINGHAM
RALPH A. DeMEO
THOMAS M. DeROSE
WILLIAM H. GREEN
WADE L. HOPPING
FRANK E. MATTHEWS
RICHARD D. MELSON
DAVID L. POWELL
WILLIAM D. PRESTON
CAROLYN S. RAEPPLE
GARY P. SAMS
ROBERT P. SMITH
CHERYL G. STUART

KRISTIN M. CONROY
CONNIE C. DURRENCE
JONATHAN S. FOX
JAMES C. GOODLETT
GARY K. HUNTER, JR.
JONATHAN T. JOHNSON
ROBERT A. MANNING
ANGELA R. MORRISON
GARY V. PERKO
KAREN M. PETERSON
MICHAEL P. PETROVICH
DOUGLAS S. ROBERTS
LISA K. RUSHTON
R. SCOTT RUTH
JULIE R. STEINMEYER

OF COUNSEL
CARLOS ALVAREZ
W. ROBERT FOKES

BY HAND DELIVERY

Kenneth Plante, Esquire
Office of General Counsel
Department of Environmental Protection
2600 Blair Stone Road, Room 654
Tallahassee, FL 32399-2400

RECEIVED

MAR 30 1995

Bureau of
Air Regulation

Re: Seminole Electric Cooperative, Inc.
Hardee Unit 3
PSD Permit No. PSD-FL-214
Hardee County

Dear Mr. Plante:

Seminole Electric Cooperative, Inc. ("Seminole") received the Department's notice of intent to issue the above-referenced Prevention of Significant Deterioration ("PSD") permit for the construction of a nominal 440 MW combined cycle unit at the Hardee Power Station Site. The notice of intent to issue was received by Seminole on February 24, 1995. On March 7, 1995, Seminole, through undersigned counsel, requested an extension of time in which to file a petition for administrative hearing on the proposed PSD permit, pursuant to Rule 62-103.070, F.A.C. The Department has not yet entered an order granting that extension request. In its previous request, Seminole requested an extension until April 3, 1995, to file a petition for an administrative hearing regarding the permit.

On behalf of Seminole, I hereby request, pursuant to Rule 62-103.070, Florida Administrative Code, an additional extension to and including April 12, 1995, in which to file a petition for administrative proceedings regarding the permit. As good cause for granting the request for extension of time for filing, Seminole states the following:

1. The proposed permit and attached Technical Evaluation and Preliminary Determination contain numerous Specific Conditions and other matters, several of which appear to warrant clarification or correction.

Kenneth Plante, Esquire
March 31, 1995
Page 2

2. Over the last several months, Seminole has conferred and corresponded with the appropriate representatives of the Department regarding this permit and these conditions. Most of the issues have been resolved in concept, but several conditions remain of concern for Seminole. Seminole will continue to work with the Department in an attempt to reach final resolution of this matter.

3. This request is filed simply as a protective measure to avoid waiver of Seminole's right to challenge the proposed permit. Grant of this request will not prejudice either party, but will further their mutual interest and likely avoid the need to initiate formal administrative proceedings.

4. I hereby certify that I have consulted with Charles Collette of the Department's Office of General Counsel about this request. He indicated he did not anticipate any Department objections to this request.

Accordingly, I hereby request that you formally extend the time for filing of a petition for administrative proceedings in regards to Department PSD Permit No. PSD-FL-214 to and including April 12, 1995.

Sincerely,



Douglas S. Roberts

DSR/gs

cc: Clair Fancy, DEP, Bureau of Air Regulation
Douglas Beason, Esq., DEP OGC
Richard T. Donelan, Esq., DEP OGC
Charles T. Collette, Esq., DEP OGC
Steve Palmer, DEP Siting Coordination

HOPPING GREEN SAMS & SMITH

PROFESSIONAL ASSOCIATION

ATTORNEYS AND COUNSELORS

123 SOUTH CALHOUN STREET

POST OFFICE BOX 6526

TALLAHASSEE, FLORIDA 32314

(904) 222-7500

FAX (904) 224-8551

FAX (904) 425-3415

March 29, 1995

KRISTIN M. CONROY
CONNIE C. DURRENCE
JONATHAN S. FOX
JAMES C. GOODLETT
GARY K. HUNTER, JR.
JONATHAN T. JOHNSON
ROBERT A. MANNING
ANGELA R. MORRISON
GARY V. PERKO
KAREN M. PETERSON
MICHAEL P. PETROVICH
DOUGLAS S. ROBERTS
LISA K. RUSHTON
R. SCOTT RUTH
JULIE R. STEINMEYER

OF COUNSEL
CARLOS ALVAREZ
W. ROBERT FOKES

RECEIVED

MAR 30 1995

Bureau of
Air Regulation

JAMES S. ALVES
BRIAN H. BIBEAU
KATHLEEN BLIZZARD
ELIZABETH C. BOWMAN
RICHARD S. BRIGHTMAN
PETER C. CUNNINGHAM
RALPH A. DEMEO
THOMAS M. DEROSE
WILLIAM H. GREEN
WADE L. HOPPING
FRANK E. MATTHEWS
RICHARD D. MELSON
DAVID L. POWELL
WILLIAM D. PRESTON
CAROLYN S. RAEPPLE
GARY P. SAMS
ROBERT P. SMITH
CHERYL G. STUART

Al Linero
Bureau of Air Regulation
Department of Environmental Protection
Magnolia Courtyard
Tallahassee, FL 32399

RE: Seminole Electric Cooperative
PSD Permit PSD-FL-214

Dear Mr. Linero:

I wish to supplement my letter of March 24, 1995, commenting on the above draft PSD permit with one minor change to the air emissions table in the permit. That change is reflected in the attached table for page 6 of 13 from the permit. It changes the permitted tons per year for gas firing from 44 TPY to 47 TPY, due to the change in the CT combustor to remove the need for steam augmentation.

Please incorporate this additional comment along with the other contained in the earlier letter. Should you have any questions concerning this, please contact me.

Sincerely,



Douglas S. Roberts

cc: Said Arif
Steve Palmer
Ken Bachor

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

B. Emission Limits

1. Pursuant to Rule 62-212.410, F.A.C., BACT, the maximum allowable emission limitations from two CTs, when firing natural gas or No. 2 fuel oil, shall not exceed the following:

MAXIMUM ALLOWABLE EMISSION LIMITATIONS

<u>POLLUTANT</u>	<u>FUEL</u>	<u>CONCENTRATION</u>	<u>lbs/hr(a)</u>	<u>TPY(b)</u>	<u>TPY(TOTAL)C</u>
NO _x	Gas	15 ppmvd(d)	104 / 06	911 ~~938~~ 938	1139 / 212
	Oil	42 ppmvd(e)	350-326	525 504	
CO	Gas	20 ppmvd	71	622	614 618
	Oil	25 ppmvd	91	136	
PM/PM ₁₀	Gas		7	61 65	145 147
	Oil		67	100	
SO ₂	Gas		5	44 47	175 182
	Oil		100-101	150-152	
VOC	Gas	5 ppmvd	10	88	99
	Oil	10 ppmvd	21	31	
Sulfuric Acid Mist	Gas		1	2 6	38 39
	Oil		22	33-34	
Beryllium	Oil		0.0049	0.007	0.007
Arsenic	Oil		0.0097	0.014	0.014
Visible Emissions	Gas		≤ 10 percent opacity		
	Oil		≤ 10 percent opacity		

(a) The emission limitations in lbs/hr/CT are a 1-hour average. ~~as determined~~ ^{as determined}

(b) The annual emission limitations (TPY) for natural gas are to the based on two CTs operating at full load for 8,760 hours per year. ^{Performance} The annual emission limitations (TPY) for fuel oil are based on the equivalent of full-load operation for a maximum of 1500 hours per year for each of the two CTs (not to exceed 3,000 hrs/yr between ^{Testing} the two CTs). The emission calculations are also based at a worst ^{conducted} case ambient temperature of 32°F. ^{pursuant to}

(c) Maximum allowable emissions from two CTs if any fuel oil is burned at the facility during the year. The emission calculations are also based at an ambient temperature of 59°F. ^{Specific Condition} ^{C. below}

HOPPING GREEN SAMS & SMITH

PROFESSIONAL ASSOCIATION

ATTORNEYS AND COUNSELORS

123 SOUTH CALHOUN STREET

POST OFFICE BOX 6526

TALLAHASSEE, FLORIDA 32314

(904) 222-7500

FAX (904) 224-8551

FAX (904) 425-3415

March 24, 1995

JAMES S. ALVES
BRIAN H. BIBEAU
KATHLEEN BLIZZARD
ELIZABETH C. BOWMAN
RICHARD S. BRIGHTMAN
PETER C. CUNNINGHAM
RALPH A. DEMEO
THOMAS M. DEROSE
WILLIAM H. GREEN
WADE L. HOPPING
FRANK E. MATTHEWS
RICHARD D. MELSON
DAVID L. POWELL
WILLIAM D. PRESTON
CAROLYN S. RAEPPEL
GARY P. SAMS
ROBERT P. SMITH
CHERYL G. STUART

KRISTIN M. CONROY
CONNIE C. DURRENCE
JONATHAN S. FOX
JAMES C. GOODLETT
GARY K. HUNTER, JR.
JONATHAN T. JOHNSON
ROBERT A. MANNING
ANGELA R. MORRISON
GARY V. PERKO
KAREN M. PETERSON
MICHAEL P. PETROVICH
DOUGLAS S. ROBERTS
LISA K. RUSHTON
R. SCOTT RUTH
JULIE R. STEINMEYER

OF COUNSEL
CARLOS ALVAREZ
W. ROBERT FOKES

RECEIVED

MAR 24 1995

Mr. Al Linero
Bureau of Air Regulation
Department of Environmental Protection
Magnolia Courtyard
Tallahassee, FL 32399

Bureau of
Air Regulation

RE: Seminole Electric Cooperative, Inc.;
Hardee Unit 3;
Comments on Proposed PSD Permit PSD-FL-214

Dear Mr. Linero:

On behalf of Seminole Electric Cooperative, Inc. (Seminole), I wish to offer the following comments on the Department's proposed prevention of significant deterioration (PSD) permit and the supporting preliminary BACT determination for Seminole's Hardee Unit 3 Project. These written comments supplement the oral and preliminary comments Seminole provided at our meeting on March 7, 1995. Attached to this letter is a marked-up copy of the proposed PSD permit and the preliminary determination with suggested changes. Several of these proposed changes are discussed below.

Steam Augmentation

As we explained in the recent meeting, Westinghouse is developing a dry low NOx combustor that will allow each CT to maintain its minimum output of 150 MW (and the entire unit to achieve 440 MW) during all ambient conditions without the use of steam augmentation. Therefore, Seminole no longer requests a different emission rate for NOx and other emissions for that condition. However, to accommodate the minimum power output throughout the range of ambient conditions, the combustor requires the use of more fuel, thus increasing the heat input rate for the CTs and the emissions of several pollutants. This increased heat input is reflected on the attached markup. The heat input for natural gas changes from 1,799 MMBtu/hr to 1,862 MMBtu/hr and for oil firing, from 1,972 MMBtu/hr to 1,965 MMBtu/hr.

Mr. Al Linero
March 24, 1995
Page 2

This change in gas turbine design maintains the proposed emission concentrations (in PPM, i.e., 15 PPM for NOx) in the proposed PSD permit, but because of the increased heat input, the emissions of several pollutants in pounds per hour and tons per year increase marginally. These emissions changes are also reflected in the enclosed revised emissions table under Specific Condition B.1., on page 6 of 13 of the proposed permit. Even with this minor increase in total emissions, Seminole's analysis indicates that the outcome of the air quality impact analysis will not significantly change and that all air quality standards will be maintained, and no PSD increments will be exceeded.

Fuel Bound Nitrogen

While Westinghouse has been able to eliminate the need for steam augmentation for the selected CTs, these combustion turbines will only be able to meet the proposed maximum nitrogen oxide emission rate of 42 ppm with a fuel oil containing up to 0.015% nitrogen. For fuel oil containing a greater level of nitrogen, Westinghouse and Seminole continue to request that an allowance for fuel bound nitrogen (FBN) be granted of up to an additional 12 ppm based upon a fuel with a maximum fuel bound nitrogen level of 0.03%. As previously explained to the Department, both orally and through a February 9, 1995 letter from Seminole to Bruce Mitchell, the new dry low NOx combustors are optimized to control nitrogen oxide formation while firing natural gas, the primary fuel, limiting control techniques for NOx formation during oil firing. This dual fuel combustor design makes it impossible for Westinghouse to achieve a thermal NOx level low enough that can accommodate a FBN of 12 ppm while staying within the proposed 42 ppm concentration during oil firing, regardless of fuel nitrogen content.

Like most recent CT projects with DLN combustors and dual fuel capability, the Hardee Unit 3 is being permitted before the combustor design is finalized, constructed and tested. Thus, the Department's permitting levels are well in advance of currently demonstrated technology. It may well be that when placed in operation in 1999, the Westinghouse DLN combustor will be able to achieve a NOx emission rate for all levels of FBN lower than the requested 54 ppm maximum. Also, by 1999, fuel oil with a maximum FBN content of 0.015% may be readily available without an unnecessary extra cost burden to Seminole's consumers. But at this time, those assurances cannot be given by Westinghouse or the fuel suppliers. Without the requested FBN allowance of up to 12 ppm, based upon measured FBN levels, Seminole will be forced to forego oil firing in order to assure compliance with the permit limits or be forced to pay a premium for guaranteed FBN levels of 0.015% from the fuel oil suppliers. However, Seminole's analysis, based upon

Mr. Al Linero
March 24, 1995
Page 3

surveys of fuel oil suppliers, indicates that such a premium is not BACT when considering the required BACT factors.

The Department's proposed conditions allow the Department to seek to revise the permitted NOx emission rates and levels based upon actual levels achieved during initial operation of the new unit. Seminole is willing to accept that condition. However, Seminole restates its request for a FBN allowance of up to 12 ppm for fuel oil with a maximum FBN of 0.03%.

Other Permit Provisions

Most of the other comments are reflected in the handwritten comments on the attached permit package which the Department issued. Several items warrant particular discussion as follows.

The identified changes in emission rates and levels throughout these marked-up documents are due to the change in the fuel usage and heat input rate as explained above.

At page 6 of 13 of the proposed PSD permit, footnote A to Specific Condition B.1. has been revised to reflect that the 1-hour averaging time for emissions is applied during required compliance testing.

At page 8 of 13, in Specific Condition 6., Seminole requests that approved periods of excess emissions include periods of switching between fuels (natural gas and fuel oil). Experience with CTs suggests that there can be short spikes in emissions when switching fuels and engaging different emission control systems, such as water injection to control NOx. If periods of excess emissions for fuel switching are not authorized, the alternative would be to shutdown the CT and restart it on the second fuel, which would result in even greater total emissions during that shutdown and startup process. Thus, from an emissions standpoint, the requested authorization would result in lower emissions. The Department's excess emissions rules, 62-210.700(5), FAC, authorize the Department to approve periods of excess emissions in such a circumstance based upon "operational variations in types of industrial equipment operations. . .to provide reasonable and practical regulatory controls consistent with the public interest."

At page 9 of 13 in the permit, Seminole proposes revising Specific Condition C.1.i. to allow submittal of natural gas vendor data as a custom fuel sampling procedure for monitoring the sulfur content of natural gas and fuel oil. We understand USEPA must approve such a procedure, but recognizing it in the permit as a possibility would avoid any future need for a permit modification.

Mr. Al Linero
March 24, 1995
Page 4

At page 9 of 13 in the permit, Seminole proposes revising Specific Condition C.1.j. to allow the use of other EPA approved test methods for compliance tests on CTs without having to seek approval as an alternate test method or a permit modification.

We appreciate the opportunity to provide these comments. Should you or your staff have any questions concerning these comments, please do not hesitate to contact either Ken Bachor at Seminole at 813/963-0994 or me. Following your review of these comments, we also request a meeting with your staff and Clair Fancy to discuss any and all outstanding issues in an effort to resolve these issues prior to the scheduled certification hearing on April 17th. I will call you to set up this meeting.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Doug S. Roberts', written in a cursive style.

Douglas S. Roberts

Encls.

cc: Said Arif, BAR
Steve Palmer, Siting Coord.
Richard Donelan, OGC

HOPPING GREEN SAMS & SMITH

PROFESSIONAL ASSOCIATION

ATTORNEYS AND COUNSELORS

123 SOUTH CALHOUN STREET

POST OFFICE BOX 6526

TALLAHASSEE, FLORIDA 32314

(904) 222-7500

FAX (904) 224-8551

FAX (904) 425-3415

March 23, 1995

JAMES S. ALVES
BRIAN H. BIBEAU
KATHLEEN BLIZZARD
ELIZABETH C. BOWMAN
RICHARD S. BRIGHTMAN
PETER C. CUNNINGHAM
RALPH A. DEMEO
THOMAS M. DEROSE
WILLIAM H. GREEN
WADE L. HOPPING
FRANK E. MATTHEWS
RICHARD D. MELSON
DAVID L. POWELL
WILLIAM D. PRESTON
CAROLYN S. RAEPPEL
GARY P. SAMS
ROBERT P. SMITH
CHERYL G. STUART

KRISTIN M. CONROY
CONNIE C. DURRENCE
JONATHAN S. FOX
JAMES C. GOODLETT
GARY K. HUNTER, JR.
JONATHAN T. JOHNSON
ROBERT A. MANNING
ANGELA R. MORRISON
GARY V. PERKO
KAREN M. PETERSON
MICHAEL P. PETROVICH
DOUGLAS S. ROBERTS
LISA K. RUSHTON
R. SCOTT RUTH
JULIE R. STEINMEYER

OF COUNSEL
CARLOS ALVAREZ
W. ROBERT FOKES

Said Arif
Bureau of Air Regulation
Department of Environmental Protection
Magnolia Courtyard
Tallahassee, FL 32399

RECEIVED

MAR 23 1995

Bureau of
Air Regulation

Re: Seminole Electric Cooperative
Hardee Unit 3

Dear Said:

Pursuant to your request, attached is a letter from Westinghouse Electric Corp. transmitting the revised air emission for the Hardee Unit 3 project. These tables are for both natural gas firing and oil firing at the increased heat input levels.

Should you have any questions concerning this matter, please call me.

Sincerely,



Douglas S. Roberts

DSR/gs
Encls.

cc: Ken Bachor



RECEIVED

MAR 21 1995

GEN. SERV.

Westinghouse
Electric Corporation

Power Generation
Business Unit

Generation Systems
Divisions

The Quadrangle
4400 Alafaya Trail
Orlando Florida 32826-2399

24 January, 1995

CTW-SEM-95-0018

Seminole Electric Cooperative Inc.
16313 North Dale Mabry Highway
Tampa, FL 33618
ATTENTION: MR. JOE WELBORN

SUBJECT: Seminole Electric Cooperative, Inc.
Hardee power Station Unit 3
EMISSIONS

Dear Mr. Welborn:

Attached please find the expected emissions performance for the uprated 501FC combustion turbine for the Hardee Power Station Unit 3. Please note, with the increased output of the 501FC combustion turbine, steam injection for power augmentation will no longer be required to meet the Hardee Power Station's required 440 megawatt output.

Please call if you have any questions.

Regards,

A handwritten signature in black ink, appearing to read 'Tom O'Hanlon'.

Tom O'Hanlon
Project Manager
Seminole - Hardee #3 Project

cc: K. Trout, B&V.

Seminole Electric Cooperative -- Hardee Power Station Unit 3
Emissions and Stack Exit Parameters -- 501FC
Natural Gas Fuel, 15 ppm NOx without SCR

Fuel:	Natural Gas		HRSG	BYPASS
HHV:	23,170	Btu/lb	19	23
Sulfur:	1.0	grains/100 scf	90	75
Fuel Density:	0.0486	lb/scf		

Parameters:	Base Load					75% CT Load					50% CT Load				
Ambient Temperature (deg F)	95	80	72	59	32	95	72	59	32		95	72	59	32	
Relative Humidity (%)	80	80	80	60	30	80	80	60	30		80	80	60	30	
Barometric Pressure (PSIA)	14.630	14.630	14.630	14.630	14.630	14.630	14.630	14.630	14.630		14.630	14.630	14.630	14.630	
Load Condition (% CT Load)	100	100	100	100	100	75	75	75	75		50	50	50	50	
CT Megawatts (Net)	145.7	151.0	157.6	166.5	177.8	109.1	118.1	124.8	133.4		72.3	78.4	82.8	88.6	
Heat Input (million Btu/hr, HHV)	1,611	1,650	1,703	1,770	1,862	1,296	1,367	1,421	1,491		971	1,016	1,053	1,096	
Heat Input (million Btu/hr, LHV)	1,453	1,488	1,536	1,596	1,679	1,169	1,233	1,281	1,344		876	916	950	988	
Estimated CT Heat Rate (Btu/kwh, LHV)	9,973	9,852	9,743	9,589	9,441	10,713	10,438	10,271	10,082		12,103	11,690	11,463	11,156	
Fuel Flow (lb/hour)	69,530	71,213	73,500	76,392	80,363	55,934	58,999	61,329	64,350		41,908	43,850	45,447	47,303	
Evaporative Cooler On?	Yes	Yes	Yes	Yes	No	No	No	No	No		No	No	No	No	
Steam Augmentation Flow (lb/hour)	0	0	0	0	0	0	0	0	0		0	0	0	0	
Exhaust Flow (lb/hour)	3,229,880	3,331,400	3,425,220	3,552,690	3,714,120	2,696,350	2,793,470	2,868,360	2,938,440		2,395,940	2,496,130	2,551,930	2,656,260	
CT Exhaust Temperature (deg F)	1158	1145	1137	1125	1112	1160	1160	1160	1160		1063	1049	1048	1022	
HRSG Exhaust Temperature (deg F)	190	190	190	190	190	190	190	190	190		190	190	190	190	
Exhaust Moisture (%)	11.52	9.72	9.26	8.33	7.37	11.04	8.96	8	7.38		10.07	7.88	6.9	6.11	
Exhaust O2 (% wet)	12	12.38	12.44	12.59	12.72	12.39	12.66	12.76	12.71		13.52	13.9	14.02	14.17	
Exhaust O2 (% dry)	13.56	13.71	13.71	13.73	13.73	13.93	13.91	13.87	13.72		15.03	15.09	15.06	15.09	
Exhaust Mol. Wt.	28.0	28.2	28.3	28.4	28.5	28.1	28.3	28.4	28.5		28.1	28.4	28.5	28.6	
HRSG Stack Exhaust Flow (ACFM)	915,100	937,259	961,856	994,004	1,035,248	762,883	783,774	801,650	819,081		676,505	698,720	711,562	738,408	
Bypass Stack Exhaust Flow (ACFM)	2,277,895	2,314,308	2,363,206	2,423,842	2,503,707	1,901,340	1,953,407	1,997,958	2,041,401		1,585,103	1,622,106	1,650,824	1,683,571	
Exhaust Flow (DSCFM)	643,347	672,330	693,490	724,014	761,952	539,243	566,963	586,009	602,786		483,400	511,433	526,373	550,868	
Bypass Stack Exit Velocity (ft/sec)	91.4	92.8	94.8	97.2	100.4	76.3	78.4	80.1	81.9		63.6	65.1	66.2	67.5	
CC Stack Exit Velocity (ft/sec)	53.8	55.1	56.5	58.4	60.9	44.8	46.1	47.1	48.1		39.8	41.1	41.8	43.4	
NOx (ppmvd at 15 % O2)	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0		15.0	15.0	15.0	15.0	
NOx (ppmvd)	18.7	18.3	18.3	18.2	18.2	17.7	17.8	17.9	18.2		14.9	14.8	14.8	14.8	
NOx (lb/hour)	89.9	92.0	95.0	98.8	104.0	71.6	75.5	78.5	82.4		54.0	56.6	58.6	60.9	
NOx (lb/million Btu, HHV)	0.056	0.056	0.056	0.056	0.056	0.055	0.055	0.055	0.055		0.056	0.056	0.056	0.056	
CO (ppmvd at 15 % O2)	8.0	8.2	8.2	8.2	8.2	16.9	16.9	16.8	16.4		30.2	30.5	30.3	30.5	
CO (ppmvd)	10	10	10	10	10	20	20	20	20		30	30	30	30	
CO (lb/hour)	29.3	30.7	31.6	33.0	34.7	49.2	51.7	53.4	55.0		66.1	70.0	72.0	75.4	
CO (lb/million Btu, HHV)	0.018	0.019	0.019	0.019	0.019	0.038	0.038	0.038	0.037		0.068	0.069	0.068	0.069	
SO2 (ppmvd at 15 % O2)	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52		0.52	0.52	0.52	0.52	
SO2 (ppmvd)	0.64	0.63	0.63	0.63	0.63	0.62	0.62	0.62	0.64		0.52	0.51	0.51	0.51	
SO2 (lb/hour)	4.2	4.3	4.4	4.6	4.9	3.4	3.6	3.7	3.9		2.5	2.7	2.7	2.9	
SO2 (lb/million Btu, HHV)	0.0026	0.0026	0.0026	0.0026	0.0026	0.0026	0.0026	0.0026	0.0026		0.0026	0.0026	0.0026	0.0026	
Total HCs (ppmvd at 15 % O2)	4.0	4.1	4.1	4.1	4.1	4.2	4.2	4.2	4.1		30.2	30.5	30.3	30.5	
Total HCs (ppmvd)	5	5	5	5	5	5	5	5	5		30	30	30	30	
Total HCs (lb/hour)	8.4	8.8	9.0	9.4	9.9	7.0	7.4	7.6	7.9		37.8	40.0	41.1	43.1	
Total HCs (lb/million Btu, HHV)	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005		0.039	0.039	0.039	0.039	

Seminole Electric Cooperative -- Hardee Power Station Unit 3
Emissions and Stack Exit Parameters -- 501FC
Natural Gas Fuel, 15 ppm NOx without SCR

Fuel:	Natural Gas		HRSG	BYPASS
HHV:	23,170	Btu/lb	Stack Dia.: 19	23
Sulfur:	1.0	grains/100 scf	Stack Ht: 90	75
Fuel Density:	0.0486	lb/scf		

Parameters:	Base Load					75% CT Load					50% CT Load				
Ambient Temperature (deg F)	95	80	72	59	32	95	72	59	32		95	72	59	32	
Relative Humidity (%)	80	80	80	60	30	80	80	60	30		80	80	60	30	
Barometric Pressure (PSIA)	14.630	14.630	14.630	14.630	14.630	14.630	14.630	14.630	14.630		14.630	14.630	14.630	14.630	
Load Condition (% CT Load)	100	100	100	100	100	75	75	75	75		50	50	50	50	
CT Megawatts (Net)	145.7	151.0	157.6	166.5	177.8	109.1	118.1	124.8	133.4		72.3	78.4	82.8	88.6	
Heat Input (million Btu/hr, HHV)	1,611	1,650	1,703	1,770	1,862	1,296	1,367	1,421	1,491		971	1,016	1,053	1,096	
Heat Input (million Btu/hr, LHV)	1,453	1,488	1,536	1,596	1,679	1,169	1,233	1,281	1,344		876	916	950	988	
Estimated CT Heat Rate (Btu/kwh, LHV)	9,973	9,852	9,743	9,589	9,441	10,713	10,438	10,271	10,082		12,103	11,690	11,463	11,156	
Fuel Flow (lb/hour)	69,530	71,213	73,500	76,392	80,363	55,934	58,999	61,329	64,350		41,908	43,850	45,447	47,303	
Evaporative Cooler On?	Yes	Yes	Yes	Yes	No	No	No	No	No		No	No	No	No	
Steam Augmentation Flow (lb/hour)	0	0	0	0	0	0	0	0	0		0	0	0	0	
Exhaust Flow (lb/hour)	3,229,880	3,331,400	3,425,220	3,552,690	3,714,120	2,696,350	2,793,470	2,868,360	2,938,440		2,395,940	2,496,130	2,551,930	2,656,260	
CT Exhaust Temperature (deg F)	1158	1145	1137	1125	1112	1160	1160	1160	1160		1063	1049	1048	1022	
HRSG Exhaust Temperature (deg F)	190	190	190	190	190	190	190	190	190		190	190	190	190	
Exhaust Moisture (%)	11.52	9.72	9.26	8.33	7.37	11.04	8.96	8	7.38		10.07	7.88	6.9	6.11	
Exhaust O2 (% wet)	12	12.38	12.44	12.59	12.72	12.39	12.66	12.76	12.71		13.52	13.9	14.02	14.17	
Exhaust O2 (% dry)	13.56	13.71	13.71	13.73	13.73	13.93	13.91	13.87	13.72		15.03	15.09	15.06	15.09	
Exhaust Mol. Wt.	28.0	28.2	28.3	28.4	28.5	28.1	28.3	28.4	28.5		28.1	28.4	28.5	28.6	
HRSG Stack Exhaust Flow (ACFM)	915,100	937,259	961,856	994,004	1,035,248	762,883	783,774	801,650	819,081		676,505	698,720	711,562	738,408	
Bypass Stack Exhaust Flow (ACFM)	2,277,895	2,314,308	2,363,206	2,423,842	2,503,707	1,901,340	1,953,407	1,997,958	2,041,401		1,585,103	1,622,106	1,650,824	1,683,571	
Exhaust Flow (DSCFM)	643,347	672,330	693,490	724,014	761,952	539,243	566,963	586,009	602,786		483,400	511,433	526,373	550,868	
Bypass Stack Exit Velocity (ft/sec)	91.4	92.8	94.8	97.2	100.4	76.3	78.4	80.1	81.9		63.6	65.1	66.2	67.5	
CC Stack Exit Velocity (ft/sec)	53.8	55.1	56.5	58.4	60.9	44.8	46.1	47.1	48.1		39.8	41.1	41.8	43.4	
VOC's (ppmvd at 15 % O2)	3.2	3.3	3.3	3.3	3.3	3.4	3.4	3.4	3.3		10.1	10.2	10.1	10.2	
VOC's (ppmvd)	4	4	4	4	4	4	4	4	4		10	10	10	10	
VOC's (lb/hour)	6.7	7.0	7.2	7.5	7.9	5.6	5.9	6.1	6.3		12.6	13.3	13.7	14.4	
VOC (lb/million Btu, HHV)	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004		0.013	0.013	0.013	0.013	
Particulates, excludes H2SO4															
TSP & PM-10 (lb/hour)	5.6	5.8	5.9	6.1	6.4	5.0	5.2	5.3	5.4		4.4	4.6	4.7	4.8	
TSP & PM-10 (lb/million Btu, HHV)	0.0035	0.0035	0.0035	0.0034	0.0034	0.0039	0.0038	0.0037	0.0036		0.0045	0.0045	0.0045	0.0044	
Particulates, includes H2SO4															
TSP & PM-10 (lb/hour)	7.2	7.4	7.6	7.8	8.2	6.3	6.5	6.7	6.9		5.3	5.6	5.7	5.9	
TSP & PM-10 (lb/million Btu, HHV)	0.0045	0.0045	0.0044	0.0044	0.0044	0.0048	0.0048	0.0047	0.0046		0.0055	0.0055	0.0054	0.0054	
H2SO4 Mist (lb/hour)	1.57	1.61	1.66	1.72	1.81	1.26	1.33	1.38	1.45		0.95	0.99	1.03	1.07	
H2SO4 Mist (lb/million Btu)	0.00097	0.00097	0.00097	0.00097	0.00097	0.00097	0.00097	0.00097	0.00097		0.00097	0.00097	0.00097	0.00097	
CO2 (lb/hour)	196,935	201,703	208,092	216,745	228,096	156,793	165,549	172,063	180,468		118,627	124,512	128,826	134,106	
CO2 (lb/million Btu, HHV)	122.2	122.2	122.2	122.5	122.5	121.0	121.1	121.1	121.0		122.2	122.6	122.3	122.4	
Opacity (%)	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	<10	<10	<10	

Seminole Electric Cooperative – Hardee Power Station Unit 3
Emissions and Stack Exit Parameters – 501FC
Oil Fuel, 42 ppm NOx without SCR

	#2 Oil		Stack Dia.:	HRSG	BYPASS	
	19,360	Btu/lb	Stack Ht:	19	23	feet
Sulfur:	0.05	% by weight		90	75	feet

Parameters:	Base Load				75% CT Load				50% CT Load			
Ambient Temperature (deg F)	95	72	59	32	95	72	59	32	95	72	59	32
Relative Humidity (%)	80	80	60	30	80	80	60	30	80	80	60	30
Barometric Pressure (PSIA)	14.63	14.63	14.63	14.63	14.63	14.63	14.63	14.63	14.63	14.63	14.63	14.63
Load Condition (% CT Load)	100	100	100	100	75	75	75	75	50	50	50	50
CT Megawatts (Net)	151.5	163.7	172.7	184.0	113.3	122.5	129.3	138.2	75.0	81.1	85.7	91.6
Water Injection (lb/hour)	96,690	102,190	106,360	111,650	77,870	82,040	85,270	89,430	36,140	37,820	39,190	40,800
Evaporative Cooler On?	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No
Heat Input (million Btu/hr, HHV)	1,702	1,799	1,872	1,965	1,370	1,444	1,501	1,574	999	1,046	1,084	1,128
Heat Input (million Btu/hr, LHV)	1,598	1,689	1,758	1,845	1,286	1,356	1,409	1,478	938	982	1,018	1,059
Estimated CT Heat Rate (Btu/kwh, LHV)	10,549	10,320	10,178	10,028	11,352	11,067	10,899	10,698	12,510	12,106	11,878	11,562
Fuel Flow (lb/hour)	87,913	92,924	96,694	101,498	70,764	74,587	77,531	81,302	51,601	54,029	55,992	58,264
W/F Ratio	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.7	0.7	0.7	0.7
Exhaust Flow (lb/hour)	3,343,500	3,546,250	3,679,200	3,846,950	2,717,940	2,816,720	2,892,980	2,968,460	2,441,550	2,544,010	2,601,640	2,708,020
CT Exhaust Temperature (deg F)	1,129	1,110	1,099	1,086	1,160	1,160	1,160	1,160	1,063	1,048	1,047	1,022
HRSG Exhaust Temperature (deg F)	285	285	285	285	285	285	285	285	285	285	285	285
Exhaust Moisture (%)	13.47	11.3	10.42	9.5	13.15	11.19	10.3	9.77	10.37	8.21	7.25	6.47
Exhaust O2 (% wet)	10.99	11.41	11.54	11.67	11.18	11.42	11.49	11.41	12.99	13.37	13.47	13.62
Exhaust O2 (% dry)	12.70	12.86	12.88	12.90	12.87	12.86	12.81	12.65	14.49	14.57	14.52	14.56
Exhaust Mol. Wt.	28.1	28.3	28.4	28.5	28.1	28.3	28.4	28.5	28.3	28.5	28.6	28.7
HRSG Stack Exhaust Flow (ACFM)	1,085,392	1,141,404	1,180,009	1,229,204	881,539	906,180	927,209	948,989	786,093	812,099	827,236	858,448
Bypass Stack Exhaust Flow (ACFM)	2,315,018	2,405,376	2,469,307	2,550,805	1,916,904	1,970,485	2,016,213	2,063,573	1,607,007	1,643,819	1,673,349	1,707,677
Exhaust Flow (DSCFM)	651,092	701,862	732,799	771,190	530,762	557,911	576,579	593,609	488,446	516,765	531,903	556,613
Bypass Stack Exit Velocity (ft/sec)	92.9	96.5	99.1	102.3	76.9	79.0	80.9	82.8	64.5	65.9	67.1	68.5
CC Stack Exit Velocity (ft/sec)	63.8	67.1	69.4	72.3	51.8	53.3	54.5	55.8	46.2	47.7	48.6	50.5
NOx (ppmvd at 15 % O2)	42	42	42	42	42	42	42	42	42	42	42	42
NOx (ppmvd)	58.4	57.2	57.1	57.0	57.1	57.2	57.6	58.8	45.6	45.1	45.4	45.1
NOx (lb/hour)	290.8	307.2	320.0	336.2	232.1	244.3	254.1	266.9	170.5	178.3	184.7	192.1
NOx (lb/million Btu, HHV)	0.171	0.171	0.171	0.171	0.169	0.169	0.169	0.170	0.171	0.170	0.170	0.170
CO (ppmvd at 15 % O2)	14.4	14.7	14.7	14.7	22.0	22.0	21.9	21.4	41.4	41.9	41.6	41.9
CO (ppmvd)	20	20	20	20	30	30	30	30	45	45	45	45
CO (lb/hour)	60.6	65.4	68.3	71.8	74.2	78.0	80.6	82.9	102.4	108.3	111.5	116.7
CO (lb/million Btu, HHV)	0.036	0.036	0.036	0.037	0.054	0.054	0.054	0.053	0.102	0.104	0.103	0.103
SO2 (ppmvd at 15 % O2)	9.6	9.6	9.6	9.6	9.7	9.7	9.7	9.7	9.6	9.6	9.6	9.6
SO2 (ppmvd)	13.3	13.1	13.0	13.0	13.2	13.2	13.3	13.5	10.4	10.3	10.4	10.3
SO2 (lb/hour) [no margin]	87.9	92.9	96.7	101.5	70.8	74.6	77.5	81.3	51.6	54.0	56.0	58.3
SO2 (lb/million Btu, HHV)	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052
Total HC's (ppmvd at 15 % O2)	14.4	14.7	14.7	14.7	14.7	14.7	14.6	14.3	27.6	27.9	27.8	27.9
Total HC's (ppmvd)	20	20	20	20	20	20	20	20	30	30	30	30
Total HC's (lb/hour)	34.7	37.4	39.0	41.0	28.3	29.7	30.7	31.6	39.0	41.3	42.5	44.4
Total HC's (lb/million Btu, HHV)	0.020	0.021	0.021	0.021	0.021	0.021	0.020	0.020	0.039	0.039	0.039	0.039

Seminole Electric Cooperative – Hardee Power Station Unit 3
Emissions and Stack Exit Parameters – 501FC
Oil Fuel, 42 ppm NOx without SCR

	#2 Oil		Stack Dia.:	HRSG	BYPASS	
	19,360			19	23	feet
		Btu/lb	Stack Ht:	90	75	feet
Sulfur:	0.05	% by weight				

Parameters:	Base Load				75% CT Load				50% CT Load			
Ambient Temperature (deg F)	95	72	59	32	95	72	59	32	95	72	59	32
Relative Humidity (%)	80	80	60	30	80	80	60	30	80	80	60	30
Barometric Pressure (PSIA)	14.63	14.63	14.63	14.63	14.63	14.63	14.63	14.63	14.63	14.63	14.63	14.63
Load Condition (% CT Load)	100	100	100	100	75	75	75	75	50	50	50	50
CT Megawatts (Net)	151.5	163.7	172.7	184.0	113.3	122.5	129.3	138.2	75.0	81.1	85.7	91.6
Water Injection (lb/hour)	96,690	102,190	106,360	111,650	77,870	82,040	85,270	89,430	36,140	37,820	39,190	40,800
Evaporative Cooler On?	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No
Heat Input (million Btu/hr, HHV)	1,702	1,799	1,872	1,965	1,370	1,444	1,501	1,574	999	1,046	1,084	1,128
Heat Input (million Btu/hr, LHV)	1,598	1,689	1,758	1,845	1,286	1,356	1,409	1,478	938	982	1,018	1,059
Estimated CT Heat Rate (Btu/kwh, LHV)	10,549	10,320	10,178	10,028	11,352	11,067	10,899	10,698	12,510	12,106	11,878	11,562
Fuel Flow (lb/hour)	87,913	92,924	96,694	101,498	70,764	74,587	77,531	81,302	51,601	54,029	55,992	58,264
W/F Ratio	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.7	0.7	0.7	0.7
Exhaust Flow (lb/hour)	3,343,500	3,546,250	3,679,200	3,846,950	2,717,940	2,816,720	2,892,980	2,968,460	2,441,550	2,544,010	2,601,640	2,708,020
CT Exhaust Temperature (deg F)	1,129	1,110	1,099	1,086	1,160	1,160	1,160	1,160	1,063	1,048	1,047	1,022
HRSG Exhaust Temperature (deg F)	285	285	285	285	285	285	285	285	285	285	285	285
Exhaust Moisture (%)	13.47	11.3	10.42	9.5	13.15	11.19	10.3	9.77	10.37	8.21	7.25	6.47
Exhaust O2 (% wet)	10.99	11.41	11.54	11.67	11.18	11.42	11.49	11.41	12.99	13.37	13.47	13.62
Exhaust O2 (% dry)	12.70	12.86	12.88	12.90	12.87	12.86	12.81	12.65	14.49	14.57	14.52	14.56
Exhaust Mol. Wt.	28.1	28.3	28.4	28.5	28.1	28.3	28.4	28.5	28.3	28.5	28.6	28.7
HRSG Stack Exhaust Flow (ACFM)	1,085,392	1,141,404	1,180,009	1,229,204	881,539	906,180	927,209	948,989	786,093	812,099	827,236	858,448
Bypass Stack Exhaust Flow (ACFM)	2,315,018	2,405,376	2,469,307	2,550,805	1,916,904	1,970,485	2,016,213	2,063,573	1,607,007	1,643,819	1,673,349	1,707,677
Exhaust Flow (DSCFM)	651,092	701,862	732,799	771,190	530,762	557,911	576,579	593,609	488,446	516,765	531,903	556,613
Bypass Stack Exit Velocity (ft/sec)	92.9	96.5	99.1	102.3	76.9	79.0	80.9	82.8	64.5	65.9	67.1	68.5
CC Stack Exit Velocity (ft/sec)	63.8	67.1	69.4	72.3	51.8	53.3	54.5	55.8	46.2	47.7	48.6	50.5
VOC's (ppmvd at 15 % O2)	3.6	3.7	3.7	3.7	3.7	3.7	3.6	3.6	9.2	9.3	9.3	9.3
VOC's (ppmvd)	5	5	5	5	5	5	5	5	10	10	10	10
VOC's (lb/hour)	8.7	9.3	9.8	10.3	7.1	7.4	7.7	7.9	13.0	13.8	14.2	14.8
VOC (lb/million Btu, HHV)	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.013	0.013	0.013	0.013
Particulates, excludes H2SO4												
TSP & PM-10 (lb/hour); 0.01% ash in fuel	37.6	40.3	42.1	44.2	30.6	32.2	33.3	34.4	26.8	28.3	29.1	30.4
TSP & PM-10 (lb/million Btu, HHV)	0.0221	0.0224	0.0225	0.0225	0.0223	0.0223	0.0222	0.0219	0.0268	0.0271	0.0268	0.0270
Particulates, includes H2SO4												
TSP & PM-10 (lb/hour)	56.3	60.1	62.7	65.9	45.7	48.1	49.8	51.8	37.8	39.8	41.0	42.8
TSP & PM-10 (lb/million Btu, HHV)	0.0331	0.0334	0.0335	0.0335	0.0333	0.0333	0.0332	0.0329	0.0378	0.0381	0.0379	0.0380
H2SO4 Mist (lb/hour)	18.7	19.8	20.6	21.6	15.1	15.9	16.5	17.3	11.0	11.5	11.9	12.4
H2SO4 Mist (lb/million Btu)	0.01101	0.01101	0.01101	0.01101	0.01101	0.01101	0.01101	0.01101	0.01101	0.01101	0.01101	0.01101
CO2 (lb/hour)	293514	310399	322693	339264	233915	246890	256383	269146	172295	180467	186769	194687
CO2 (lb/million Btu, HHV)	172	173	172	173	171	171	171	171	172	173	172	173
Opacity	10	10	10	10	10	10	10	10	10	10	10	10

Meeting Sign-In Sheet

Re: Seminole Electric Cooperative

Date: 3-7-95

[illegible]

Patty
all

HOPPING GREEN SAMS & SMITH
PROFESSIONAL ASSOCIATION
ATTORNEYS AND COUNSELORS

JAMES S. ALVES
BRIAN H. BIBEAU
KATHLEEN BLIZZARD
ELIZABETH C. BOWMAN
RICHARD S. BRIGHTMAN
PETER C. CUNNINGHAM
RALPH A. DEMEO
THOMAS M. DEROSE
WILLIAM H. GREEN
WADE L. HOPPING
FRANK E. MATTHEWS
RICHARD D. NELSON
DAVID L. POWELL
WILLIAM D. PRESTON
CAROLYN S. RAEPPLE
GARY P. SAMS
ROBERT P. SMITH
CHERYL G. STUART

123 SOUTH CALHOUN STREET
POST OFFICE BOX 6526
TALLAHASSEE, FLORIDA 32314

(904) 222-7500
FAX (904) 224-8551
FAX (904) 425-3415

March 7, 1995

KRISTIN M. CONROY
CONNIE C. DURRENCE
JONATHAN S. FOX
JAMES C. GOODLETT
GARY K. HUNTER, JR.
JONATHAN T. JOHNSON
ROBERT A. MANNING
ANGELA R. MORRISON
GARY V. PERKO
KAREN M. PETERSON
MICHAEL P. PETROVICH
DOUGLAS S. ROBERTS
LISA K. RUSHTON
R. SCOTT RUTH
JULIE R. STEINMEYER

OF COUNSEL
CARLOS ALVAREZ
W. ROBERT FOKES

RECEIVED

MAR 7 1995

BY HAND DELIVERY

Kenneth Plante, Esquire
Office of General Counsel
Department of Environmental Protection
2600 Blair Stone Road, Room 654
Tallahassee, FL 32399-2400

Bureau of
Air Regulation

Re: Seminole Electric Cooperative, Inc.
Hardee Unit 3
PSD Permit No. PSD-FL-214
Hardee County

Dear Mr. Plante:

Seminole Electric Cooperative, Inc. ("Seminole") received the Department's notice of intent to issue the above-referenced Prevention of Significant Deterioration ("PSD") permit for the construction of a nominal 440 MW combined cycle unit at the Hardee Power Station Site. The notice of intent to issue was received by Seminole on February 24, 1995. The notice of intent was issued by the Department's Bureau of Air Regulation and signed by Mr. Clair Fancy, Bureau Chief. Pursuant to the notice of intent, Seminole has until March 10, 1995, to file a petition for an administrative hearing regarding the permit.

On behalf of Seminole, I hereby request, pursuant to Rule 62-103.070, Florida Administrative Code, an extension to and including April 3, 1995, in which to file a petition for administrative proceedings regarding the permit. As good cause for granting the request for extension of time for filing, Seminole states the following:

1. The proposed permit and attached Technical Evaluation and Preliminary Determination contain numerous Specific Conditions and other matters, several of which appear to warrant clarification or correction.

Kenneth Plante, Esquire
March 7, 1995
Page 2

2. Over the last several months, Seminole has conferred and corresponded with the appropriate representatives of the Department regarding this permit and these conditions. Most of the issues have been resolved in concept, but several conditions remain of concern for Seminole. Seminole will continue to work with the Department in an attempt to reach final resolution of this matter.

3. This request is filed simply as a protective measure to avoid waiver of Seminole's right to challenge the proposed permit. Grant of this request will not prejudice either party, but will further their mutual interest and likely avoid the need to initiate formal administrative proceedings.

4. I hereby certify that I have attempted to contact, without success, Douglas Beason and Richard Donelan of the Department's Office of General Counsel to discuss any objections they may have to this request.

Accordingly, I hereby request that you formally extend the time for filing of a petition for administrative proceedings in regards to Department PSD Permit No. PSD-FL-214 to and including April 3, 1995.

Sincerely,

A handwritten signature in black ink, appearing to read "Douglas S. Roberts", written in a cursive style.

Douglas S. Roberts

DSR/gs

cc: Clair Fancy, DEP, Bureau of Air Regulation
Douglas Beason, Esq., DEP OGC
Richard T. Donelan, Esq., DEP OGC
Steve Palmer, DEP Siting Coordination



RECEIVED

OVERNIGHT

FEB 23 1995

February 9, 1995

Bureau of
Air Regulation

Bruce Mitchell
Bureau of Air Regulation
Department of Environmental Protection
Magnolia Courtyard
111 So. Magnolia
Tallahassee, FL 32399

Re: Seminole Electric Coop. Inc.; Hardee Unit 3 -
Proposed BACT and Permit Conditions

Dear Bruce:

Seminole Electric Cooperative, Inc. (Seminole) appreciated the opportunity to meet with you and Syed Arif to discuss the Bureau's draft BACT analysis and proposed conditions of certification for Seminole's Hardee Unit 3 project. As we discussed in our meeting on January 31, 1995, the two principal issues associated with the permits for this project are the request for higher emission rates for nitrogen oxides (NO_x) and carbon monoxide (CO) during periods of steam augmentation and an increase in NO_x emissions based upon the fuel bound nitrogen content of the low sulfur fuel oil delivered to the project. As explained below, Seminole believes that these requests are justified and consistent with the objective of achieving the lowest emissions from this project, while considering economic and environmental issues.

The Hardee Unit 3 project is a 440 megawatt facility. It will be comprised of 2 150-megawatt Westinghouse 501F combustion turbines, with each CT connected to a single heat recovery steam generator (HRSG). The electrical output from this Seminole-owned facility will replace electricity Seminole currently purchases from other Florida utilities. The project will therefore supply existing demand for electricity by the members of Seminole's 11 electrical cooperatives in Florida. Unlike many recently permitted projects, the Hardee Unit 3 project is not being undertaken to meet future growth and demand. The demand exists today and will continue to exist at a level of 440 megawatts on the planned in-service date of January 1, 1999. The proposed project with the Westinghouse CTs has therefore been sized to best meet this 440 megawatt demand.

Steam Augmentation

As Westinghouse representatives explained in our meeting, during those times when the ambient temperature is above approximately 80°F, the electrical output of the combustion turbines during natural gas firing drops due to the decreased density of the air which is forced through the CT. High ambient temperatures cause the air to expand beyond the abilities of the CT's compressors and evaporative chillers to maintain a minimum air density passing through the CT to achieve the 440 megawatt output.

To compensate for the reduced power output during hot, humid days, high pressure steam must be injected into the combustor, mixing with the high pressure air from the CT compressor, to increase the mass flow through the CT. However, the moisture content of the injected steam affects the stability of the combustor pilot flame. To maintain flame stability, additional fuel is fed to the combustor pilot, resulting in an increase in NO_x emissions. The presence of moisture from the steam also causes carbon monoxide to increase to 50ppm levels.

With dry low NO_x combustors operating on natural gas fuel, the NO_x formed in the combustion process is minimized by designing the combustors to operate at very lean fuel to air ratios, an inherently less stable combustion point than occurs in conventional combustors. Thus, dry low NO_x combustors are less tolerant to the reduction in flame stability caused by steam injection. Power or steam augmentation is achieved differently than with conventional combustors by injecting the steam into the combustor casing rather than directly into the combustor. This form of injection disseminates the steam throughout the internal passages rather than focusing it on the flame, although much of the steam still enters the flame zone. Since the thermal NO_x levels are already so low in these DLN designs, there is not a significant further reduction in NO_x from the steam. In the Westinghouse DLN combustor, a central pilot is used in the design to add stability to the lean premix regions of the combustor. The central pilot operates similar to a conventional combustor and thus impacts the NO_x level of the combustor. As steam augmentation is brought on, the percentage of the total fuel that is injected through the central pilot is increased, thus increasing the NO_x levels from the CT from 15ppm to 25ppm.

While steam augmentation increases NO_x emissions, Seminole believes that this is the most acceptable alternative available to provide the needed 440 megawatts of output, considering both environmental and economic factors. Westinghouse and other CT manufacturers do not have CTs that are incrementally larger in output to provide the needed power during these meteorological conditions. Combustion turbines come in standard megawatt capacities or classes and CT manufacturers therefore are unable to exactly size a CT to a given utility's needs in many circumstances.

The other alternatives available to Seminole to meet its 440 megawatt need in these circumstances include installing a stand-alone 20 to 25 megawatt CT to provide the power during the identified meteorological conditions or to purchase power from another utility. As indicated in the analysis by Ken Kosky of KBN, a simple cycle 25 megawatt CT would cost approximately \$15.8 million, with an annualized incremental operating cost of \$1,993,320 for both capital and fuel costs. Assuming this standalone CT also achieved an emission rate of 15ppm, the cost effectiveness of removing the incremental 83.3 tons of NO_x by installing a small CT would be \$23,930 per ton of NO_x removed. This cost effectiveness value greatly exceeds the value the Department has previously established for NO_x removal.

The second alternative available to Seminole to provide the incremental 20 megawatts would involve contracting with another Florida utility to provide power during these periods. Since all other baseload units with relatively low NO_x rates would already be on line when ambient temperatures reach 80°F and greater, it is most likely that the incremental power Seminole needs would be generated from an existing power plant at a much greater NO_x emission rate. Seminole expects that it would cost Seminole \$2.8 million per year to contract with another utility (most likely TECO Energy) to provide this incremental power. With the Hardee Unit 3 operating with steam augmentation, total annual emissions are expected to be 212 tons per year. However, if Hardee Unit 3 is denied steam augmentation and replacement power must be purchased by Seminole from another existing plant, Seminole estimates that total NO_x from the Hardee Unit 3 and the other plant would be at least 226 tons per year. Thus, without steam augmentation, NO_x emissions would increase by 14 tons per year while costing Seminole at least \$2.8 million. Thus, Seminole would be forced to pay more money to meet its 440 megawatts of need, while increasing total NO_x emissions when compared to the steam augmentation scenario.

Thus, Seminole believes that the PSD permit and conditions of certification should authorize use of steam augmentation at emission rates of 25ppm for NO_x and 50ppm for CO during natural gas firing of the Hardee Unit 3 during those periods when ambient temperatures exceed 80°F, which is estimated to occur 2,000 hours per year.

Fuel Bound Nitrogen

Based upon the information provided by Westinghouse, Seminole continues in its request that it be granted up to an additional 12ppm for NO_x emissions based on the nitrogen content of the fuel oil delivered to the project. Westinghouse has optimized the new dry low NO_x combustors on the large F class CTs to produce the lowest NO_x levels attainable on natural gas, while still maintaining oil firing capability. In order to achieve low NO_x emissions during natural gas firing, the DLN design limits the options for water injection during oil firing and therefore, the ability to achieve lower NO_x levels. Westinghouse has therefore

based its guaranteed NO_x rate of 42ppm during oil firing upon a maximum fuel bound nitrogen content of 0.15% nitrogen.

DLN combustors can only control formation of thermal NO_x; fuel bound nitrogen (FBN) is not subject to combustion controls and is, therefore, "passed" through the machine. To meet the proposed 42ppm NO_x level for fuels with an FBN above 0.015% in fuel oil, the unit operator would be forced to over-control thermal NO_x by adding additional water injection during oil firing. While this may be achievable with conventional combustors or with single fuel (oil only) combustors on smaller CTs, Westinghouse does not believe that can be accomplished with the planned DLN combustor for this F class machine. The DLN is not expected to have any margin in the NO_x rate during oil firing that could be used to buffer the fuel bound nitrogen present in oil. Westinghouse is concerned that to attempt to inject additional water will create stress on the CT components and reduce unit efficiency by increasing the heat rate. Also, operating data during tests on CTs suggest that increasing water injection beyond a water to fuel ratio of 1.0 does not substantially reduce thermal NO_x formation but may significantly increase CO emissions well above proposed allowable levels.

Fuel bound nitrogen is solely a function of the oil refining and supply process. Seminole's investigation indicates that oil refiners are not refining or controlling for nitrogen content in fuel oil. While it appears that lower sulfur fuels (i.e., 0.05% sulfur oil) also have lower nitrogen contents as well, about 25% of the reported samples in one survey indicated that nitrogen content in low sulfur fuel oil still exceeded the threshold of 0.015% nitrogen. Thus, the oil refining industry does not currently continuously produce a low nitrogen/low sulfur fuel oil that would allow Seminole to meet the Department's proposed NO_x level of 42ppm.

Only one fuel oil supplier responded to Seminole's inquiry concerning a guaranteed price for fuel with a specified nitrogen content of no greater than 0.015% nitrogen. That single bidder would charge Seminole an additional 2.27¢ per gallon of fuel oil to supply low sulfur fuel with a nitrogen content of 0.015% or less. Based upon this price premium to Seminole, and assuming a maximum 0.03% nitrogen in the fuel (and an additional 12ppm of NO_x emissions for a total of 54ppm during oil firing) the cost effectiveness of payment of this premium to achieve the Department's proposed 42ppm emission rate would be a minimum of \$6,737 per ton of NO_x removed. For fuel oil with a lower FBN content, the cost effectiveness on a per ton removal basis, would be even greater. Therefore, Seminole believes that requiring use of a low nitrogen fuel, which is the effect of the Department's proposed permit limit, is not cost effective and is unnecessary since the average nitrogen content of fuel oil would likely be at or below 0.015% nitrogen in most cases.

Attached for your further reference are the overheads used by Westinghouse and KBN in their presentation at our recent meeting. These are provided to further support Seminole's request for a

differential NO_x emission rate during steam augmentation operation and for a fuel bound nitrogen allowance of up to 12ppm. While we hope that this information is useful to the Department in evaluating this request, if there is further information that you need, we are available to provide that information to you. Again, your attention to this request is appreciated.

Sincerely,



Kenneth L. Bachor
Manager, Environmental Licensing

KLB:jwt

Attachment

cc: w/o attachments

Syed Arif, BAR

Steve Palmer, Office of Siting Coordination

Richard Donelan, Office of General Counsel



Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

February 21, 1995

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. William C. Walbridge
Executive Vice President
Seminole Electric Cooperative Incorporated
P. O. Box 272000
Tampa, Florida 33688-2000

Dear Mr. Walbridge:

Attached is a copy of the Technical Evaluation and Preliminary Determination, proposed permit and the Best Available Control Technology evaluation to construct a 440 MW combined cycle power plant consisting of two gas turbine generators, associated heat recovery steam generators and a single steam turbine-generator.

Submit any written comments for consideration concerning the Department's proposed action to Mr. A. A. Linero of the Bureau of Air Regulation. If there any questions, please call Mr. Syed Arif at (904)488-1344.

Sincerely,

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

CHF/SA/bjb

Attachments

cc: B. Thomas, SWD
S. Palmer, DEP
J. Harper, EPA
J. Bunyak, NPS
L. Novak, Polk County
D. Roberts, HBGS
K. Kosky, P.E., KBN

Z 751 860 033



Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

PS Form 3800, March 1993

Sent to	
William C. Walbridge	
Street and No.	
Seminole Electric	
P.O. State and ZIP Code	
Tampa, FL	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	
P5D-FI-214 2-21-95	
PA-89-253A	
HARDEE + POLK CITIES	

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- 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:
William C. Walbridge
Executive V.P.
Seminole Electric Coop Inc
P.O. Box 272000
Tampa, FL 33688-2000

4a. Article Number
Z 751 860 033

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
2-24-95

5. Signature (Addressee)

6. Signature (Agent)

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

Thank you for using Return Receipt Service.

PS Form 3811, December 1993

*U.S. GPO: 1992-323-402

DOMESTIC RETURN RECEIPT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CERTIFIED MAIL

In the Matter of an
Application for Permit by:

DEP File No. PSD-FL-214
(PA-89-25SA)
Hardee and Polk Counties

Seminole Electric Cooperative Incorporated
P. O. Box 272000
Tampa, FL 33688-2000

INTENT TO ISSUE

The Department of Environmental Protection (Department) hereby gives notice of its intent to issue a PSD permit (copy attached) for the proposed project as detailed in the application specified above for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, Seminole Electric Cooperative Incorporated, applied on May 9, 1994, to the Department of Environmental Protection for a permit to construct a 440 MW combined cycle power plant consisting of two gas turbine generators, associated heat recovery steam generators, and a single steam turbine-generator. The proposed facility will be located near Bowling Green, Hardee County, Florida.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-212 and 62-4, Florida Administrative Code (F.A.C.). The project is not exempt from permitting procedures. The Department has determined that a construction permit is required for the proposed work.

Pursuant to Section 403.815, F.S. and Rule 62-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Notice of Intent to Issue Permit. The notice shall be published one time only within 30 days in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within seven days of publication. Failure to publish

the notice and provide proof of publication within the allotted time may result in the denial of the permit.

The Department will issue the permit with the attached conditions unless a petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this intent. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of their receipt of this intent, whichever first occurs. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information;

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;

(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;

(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by Petitioner, if any;

(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and,

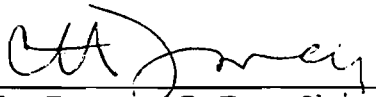
(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this intent. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be

filed (received) within 14 days of receipt of this intent in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION


C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399
904-488-1344

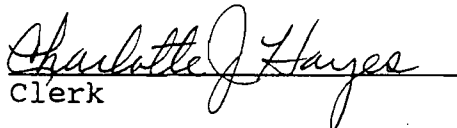
CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this INTENT TO ISSUE and all copies were mailed by certified mail before the close of business on 2/21/95 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to §120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.


Clerk 2/21/95
Date

Copies furnished to:

cc: B. Thomas, SWD
S. Palmer, DEP
J. Harper, EPA
J. Bunyak, NPS
L. Novak, Polk County
D. Roberts, HBGS
K. Kosky, P.E., KBN

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF INTENT TO ISSUE PERMIT

PSD-FL-214
(PA-89-25SA)

The Department of Environmental Protection (Department) gives notice of its intent to issue a permit to Seminole Electric Cooperative Incorporated, P. O. Box 272000, Tampa, FL 33688, to construct a 440 MW combined cycle power plant consisting of two gas turbine generators, associated heat recovery steam generators, and a single steam turbine-generator. The proposed facility will be located in Hardee and Polk Counties, Florida. A determination of Best Available Control Technology was required. The maximum predicted increase in nitrogen dioxide concentrations due to the project are less than the respective PSD Class I and II significant impact levels, thus no nitrogen dioxide PSD increment consumption was calculated for this project. The maximum predicted increases in particulate matter less than 10 microns (PM₁₀) concentrations due to the project are less than the respective PSD Class I significant impact levels, thus no PSD Class I PM₁₀ increment consumption was calculated for this project. The maximum predicted PSD Class II PM₁₀ increments to be consumed by the proposed project are the following: 21.5 ug/m³, 24-hour average, or 72% of the available 24-hour increment of 30 ug/m³; and, 0.12 ug/m³, annual average, or less than one percent of the available annual increment of 17 ug/m³. The maximum predicted PSD Class II sulfur dioxide increments to be consumed by the proposed project are the following: 65.1 ug/m³, 3-hour average, or 13% of the available 3-hour increment of 512 ug/m³; 27.8 ug/m³, 24-hour average, or 31% of the available 24-hour increment of 91 ug/m³; and, 0.18 ug/m³, annual average, or less than one percent of the available increment of 20 ug/m³. The maximum predicted PSD Class I sulfur dioxide increments to be consumed by the proposed project are the following: 1.9 ug/m³, 3-hour average, or 8% of the available 3-hour increment of 25 ug/m³; 0.3 ug/m³, 24-hour average, or 6% of the available 24-hour increment of 5 ug/m³; and, 0.012 ug/m³, annual average, or less than one percent of the available annual increment of 2 ug/m³. The Department is issuing this Intent to Issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (F.S.). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of publication of this notice. Petitioner shall mail a copy of the

petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information; (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and, (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, Florida Administrative Code.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301

Department of Environmental Protection
Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619-8218

Any person may send written comments on the proposed action to Mr. A. A. Linero at the Department of Environmental Protection, Bureau of Air Regulation, Mail Station 5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. All comments received within 14 days of the publication of this notice will be considered in the Department's final determination.

Further, a public hearing can be requested by any person(s). Such requests must be submitted within 30 days of this notice.

Technical Evaluation
and
Preliminary Determination

Seminole Electric Cooperative Incorporated
Hardee & Polk Counties, Florida

440 MW COMBINED CYCLE POWER PLANT

Department File No.: PSD-FL-214
(PA-89-25SA)

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

February 21, 1995

SYNOPSIS OF APPLICATION

I. GENERAL INFORMATION

A. Name and Address of Applicant

Seminole Electric Cooperative Incorporated
P. O. Box 272000
Tampa, FL 33688-2000

B. Reviewing and Process Schedule

Date of Receipt of Application: May 9, 1994.

Completeness Review: Department letters dated June 27, 1994; September 21, 1994; and, November 16, 1994.

Response to Incompleteness Letters: Company letters received on August 26, 1994; October 6, 1994; and, November 23, 1994.

Application Completeness Date: November 23, 1994.

C. Facility Location

This facility is located in Hardee and Polk Counties approximately 9 miles northwest of Wauchula and 16 miles south-southwest of Bartow. The UTM coordinates are Zone 17, 405.0 km East and 3057.7 km North.

Facility Identification Code (SIC)

Major Group No. 49 - Electric, Gas and Sanitary Services.

Industry Group No. 491 - Combination Electric, Gas and Other Utility Services.

Industry Group No. 4911 - Electric and Other Services Combined.

D. Project Description

The Seminole Electric Cooperative Incorporated (SECI) facility in Polk and Hardee Counties is classified as a major emitting facility. The proposed project consists of the construction of two gas combustion turbine (CT) generators, associated heat recovery steam generators (HRSGs), and a single steam turbine-generator at a facility adjacent to the Hardee Power Station's existing units located in Hardee and Polk Counties. The facility, referred to as Hardee Unit 3, will consist

of two 150 megawatt (MW) Westinghouse Model 501F, or equivalent, advanced CTs. Each CT will be connected to a separate HRSG, which will recover the waste heat to produce steam for utilization in a single 140 MW (net) steam turbine. The facility will have a total nominal generating capacity of 440 MW (net). The primary fuel for the CTs will be natural gas, with distillate (No. 2) fuel oil containing a maximum sulfur content of 0.05 percent, by weight, designated as the backup fuel.

E. Project Emissions

The proposed project will produce potential pollutant emissions of 1139 tons per year (TPY) of nitrogen oxides (NO_x); 175 TPY of sulfur dioxide (SO_2); 614 TPY of carbon monoxide (CO); 145 TPY of particulate matter (PM/PM₁₀); 99 TPY of volatile organic compounds (VOC); 0.007 TPY of beryllium (Be); 0.16 TPY of lead (Pb); 0.014 TPY inorganic arsenic (As); 0.025 TPY of mercury (Hg); and, 38 TPY of sulfuric acid (H_2SO_4) mist. This assumes if operation at 8760 hours per year (7,260 hours per year on natural gas and a maximum of 3,000 hours per year between the two CTs on No. 2 fuel oil using a maximum of 0.05 percent sulfur, by weight).

II. RULE APPLICABILITY

The proposed project, construction of a 440 MW combined cycle power plant (SIC 4911) in Polk & Hardee Counties, is subject to the State Power Plant Siting Act (PPSA) and preconstruction review under the provisions of Chapter 403, Florida Statutes, Chapters 62-212 and 62-4, Florida Administrative Code (F.A.C.), and 40 CFR 60 (July 1, 1994 version).

This facility is located in an area designated attainment for all criteria pollutants in accordance with Rule 62-275.400, F.A.C.

The proposed project was reviewed under Rule 62-212.400(5), F.A.C., New Source Review (NSR) for Prevention of Significant Deterioration (PSD), because it will be a major modification to a major facility. This review consisted of a determination of Best Available Control Technology (BACT) and, unless otherwise exempted, an analysis of the air quality impact of the increased emissions. The review also includes an analysis of the project's impacts on soils, vegetation and visibility, along with air quality impacts resulting from associated commercial, residential and industrial growth.

The proposed facility shall be in compliance with all applicable provisions of Chapters 62-212 and 62-4, F.A.C., and the 40 CFR 60 (July 1, 1994 version). The proposed facility shall be

in compliance with all applicable provisions of Rules 62-210.650, F.A.C.: Circumvention; Rule 62-210.700, F.A.C.: Excess Emissions; Rule 62-296.800, F.A.C.: Standards of Performance for New Stationary Sources (NSPS); Chapter 62-296, F.A.C.: Stationary Sources - Emissions Monitoring; and, Rule 62-4.130, F.A.C.: Plant Operation-Problems.

The proposed facility shall be in compliance with the New Source Performance Standards (NSPS) for Gas Turbines, Subpart GG, and for volatile organic storage vessels, Subpart Kb, which are contained in 40 CFR 60 and adopted by reference in Rule 62-296.800, F.A.C.

III. TECHNICAL EVALUATION

The applicant proposes to install a 440 MW combined cycle power plant at its facility in Polk and Hardee Counties. The plant will consist of two nominal 150 megawatt (MW) Westinghouse Model 501F, or equivalent CTs that will exhaust through two associated unfired HRSGs, which will supply steam to power a single 140 MW (net) steam turbine generator. The proposed facility will include a 4.4 million gallon fuel oil storage tank. The proposed facility will be capable of producing a nominal 440 MW of electricity.

In 1990, the Hardee Power Station was certified for 660 MW of generation in a phased construction schedule as follows:

1. TECO Power Services - 295 MW (1993) (Phase 1A).
2. TECO Power Services - 145 MW (future unit) (Phase 1B).
3. SECI - 220 MW (date unspecified) (Phase 2).

This new certification does not change Phases 1A and 1B, above, but will increase the SECI certified generation (Phase 2) from 220 MW to 440 MW, with an inservice date of January, 1999. Because of the phased construction activity, the Department looked at the total emissions for the Phase 2 project to see if any additional pollutants (i.e., Hg, Pb, etc.) should be reviewed from the BACT determination process.

The primary fuel to the two CTs will be natural gas. No. 2 fuel oil with a maximum sulfur content of 0.05%, by weight, will be used as a backup fuel for a maximum of 3,000 hours per year between the two CTs. The CTs will be firing natural gas for the remaining hours of operation. The emissions of nitrogen oxides (NO_x) represent a significant proportion of the total emissions generated by this project. The BACT for NO_x, as determined by the Department, will be met by using low-NO_x combustors to limit emissions to 15 ppmvd (corrected to 15% O₂) when burning natural gas and water injection to limit emissions to 42 ppmvd (corrected

to 15% O₂) when burning fuel oil. The facility is subject to PSD new source review (NSR) and BACT for NO_x emissions because the proposed increase in annual NO_x emissions exceeds the significant emission rate. Compliance with the emission standards will be determined by stack tests.

Particulate matter (PM/PM₁₀) emissions from the combined cycle combustion turbines will be minimized by combustion control and the use of clean fuels. The Department agrees with the applicant's rationale that there are no feasible methods to control lead, mercury, beryllium and other trace pollutants, except by requiring good quality fuel. The facility is subject to PSD NSR and BACT for PM/PM₁₀ emissions because the proposed increase in annual PM/PM₁₀ emissions exceeds the significant emission rate. Compliance will be determined by periodic stack tests.

SO₂ and H₂SO₄ mist emissions will be controlled by the use of low sulfur fuel oil. The No. 2 fuel oil, which will be used as a back-up fuel for up to 3,000 hours per year between the two CTs, will have a maximum sulfur content limit of 0.05 percent, by weight. The facility is subject to PSD NSR and BACT for SO₂ and H₂SO₄ mist emissions because the proposed increase in annual SO₂ and H₂SO₄ mist emissions exceeds the significant emission rates. The use of natural gas as the primary fuel and limited use of fuel oil represents BACT for these pollutants. Compliance with the SO₂ and H₂SO₄ mist emission standards will be demonstrated by fuel analysis, stack testing, and/or continuous emission monitoring.

CO and VOC emissions will be minimized by combustion control to assure proper fuel mixing and complete fuel combustion. The CO emissions from the proposed combined cycle turbines using dry low-NO_x combustors are 20 ppmvd @ 15% O₂ for natural gas firing and 25 ppmvd @ 15% O₂ for fuel oil firing using water injection. VOC emissions have been based on exhaust concentrations of 5 and 10 ppmvd for natural gas and fuel oil firing, respectively. The facility is subject to PSD NSR and BACT for CO and VOC emissions because the proposed increase in annual CO and VOC emissions exceeds the significant emission rates. Compliance with the emission standards will be determined by stack tests.

The facility is subject to PSD NSR for Be and As. These pollutants are caused primarily by the contaminants in the fossil fuels. Emissions will be controlled by limiting the quantity of fossil fuel that can be burned. Compliance for the pollutants shall be determined by stack tests.

The following table summarizes the maximum emissions of air pollutants subject to PSD review:

<u>Pollutant</u>	<u>Emissions (TPY)</u>			<u>PSD Significant Emission Rate (TPY)</u>
	<u>Gas*</u>	<u>Oil*</u>	<u>Total**</u>	
NO _x	911	525	1139	40
SO ₂	44	150	175	40
CO	622	136	614	100
PM/PM ₁₀	61	100	145	15
VOC	88	31	99	40
Be	Neg.	0.007	0.007	0.0004
H ₂ SO ₄ Mist	9	33	38	7
As	Neg.	0.014	0.014	Any

* The emissions for gas and oil are based on the worst case ambient temperature condition, which is 32°F, and each CT operating up to 8760 hours on gas and 1500 hours on fuel oil.

** The emissions are based on the ambient temperature of 59°F and each CT operating 7260 hours on gas and 1500 hours on fuel oil. These emissions will be the maximum allowables from the two CTs if any fuel oil is burned at the facility during the year.

IV. AIR QUALITY REPORT

A. Introduction

The proposed project will emit eight pollutants in PSD significant amounts. These pollutants are SO₂, PM/PM₁₀, NO_x, CO and VOC, along with the non-criteria pollutants As, Be, and H₂SO₄ mist.

The air quality impact analyses required by the PSD regulations for these pollutants include:

- * An analysis of existing air quality;
- * A PSD increment analysis (SO₂, PM₁₀, and NO₂);
- * An Ambient Air Quality Standards (AAQS) analysis;
- * An analysis of impacts on soils, vegetation, visibility, and of growth-related air quality modeling impacts; and,
- * A "Good Engineering Practice" (GEP) stack height determination.

The analysis of existing air quality generally relies on preconstruction monitoring data collected with EPA-approved methods. The PSD increment and AAQS analyses depend on air quality dispersion modeling carried out in accordance with EPA guidelines.

Based on the required analyses, the Department of Environmental Protection (Department) has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed herein, will not cause or contribute to a violation of any AAQS or PSD increment. However, the following EPA-directed stack height language is included: "In approving this permit, the Department has determined that the application complies with the applicable provisions of the stack height regulations as revised by EPA on July 8, 1985 (50 FR 27892). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D.C. Circuit in NRDC v. Thomas, 838 F. 2d 1224 (D.C. Cir. 1988). Consequently, this permit may be subject to modification if and when EPA revises the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators." A discussion of the modeling procedure and required analyses follows.

B. Analysis of Existing Air Quality and Determination of Background Concentrations

Preconstruction ambient air quality monitoring is required for all pollutants subject to PSD NSR. However, an exemption to the monitoring requirement can be obtained if the maximum air quality impact resulting from the projected emissions increase, as determined by air quality modeling, is less than a pollutant-specific de minimus concentration. Pollutants which do not have a specified de minimus level may also be exempt from preconstruction monitoring requirements. In addition, if an acceptable ambient monitoring method for the pollutant has not been established by EPA, monitoring is not required.

Even if preconstruction ambient monitoring is exempted, determination of background concentrations for PSD significant pollutants may be necessary for use in the AAQS analysis for each pollutant. These concentrations may be established from the required preconstruction ambient air quality monitoring analysis or from previously existing representative monitoring data. These background ambient air quality concentrations are added to pollutant impacts predicted by modeling and represent the air quality impacts of sources not included in the modeling.

Table 1 shows that NO₂ and CO impacts from the project are predicted to be less than the de minimus levels. Therefore, preconstruction ambient air quality monitoring is not required for these two pollutants. H₂SO₄ mist, As, and VOC impacts for comparison with de minimus levels are not shown in this table. There are no monitoring de minimus levels or acceptable monitoring techniques for H₂SO₄ mist and As, and the net emissions increase of

VOC is compared to a de minimus monitoring emission rate in tons per year, not a concentration level. For this project, the net emissions increase of VOC is less than the de minimus emissions rate of 100 tons per year. For these reasons, preconstruction ambient air monitoring for H₂SO₄ mist, As and VOC is not required.

Table 1 also shows that SO₂, PM₁₀, and Be impacts from the project are predicted to be greater than de minimus levels. Maximum Be impact is predicted to be greater than the de minimus monitoring level for the 50 percent operating load only. For baseload operation, the maximum predicted Be impact is less than the de minimus monitoring level. In addition, maximum predicted Be impacts are well below the applicable Ambient Reference Concentrations (ARC) shown in Table 7. Therefore, no preconstruction monitoring for Be is required for this project. Preconstruction ambient air quality monitoring, however, is required for SO₂ and PM₁₀. Previously existing representative monitoring data from SO₂ monitors in Mulberry and Nichols and a PM₁₀ monitor in Homeland are used to fulfill the monitoring requirements for these two pollutants and to establish background concentrations for use in the AAQS analysis. Background concentrations for PM₁₀ and SO₂ are given in the AAQS table, Table 6.

C. Modeling Procedure

The EPA-approved Industrial Source Complex Short-Term (ISCST2) dispersion model was used to evaluate the pollutant emissions from the proposed project, the adjacent existing Hardee facility and other existing major facilities. The model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area and volume sources. The model incorporates elements for plume rise, transport by the mean wind, Gaussian dispersion, and pollutant removal mechanisms such as deposition. The ISCST2 model allows for the separation of sources, building wake downwash, and various other input and output features. A series of specific model features, recommended by the EPA, are referred to as the regulatory options. The applicant used the EPA recommended regulatory options in each modeling scenario. Direction-specific downwash parameters were used for all sources for which downwash was considered.

Initially, the applicant conducted preliminary modeling for the purpose of determining the worst case fuel/load/operation/temperature scenarios for the proposed project. This preliminary modeling was based on fuel oil combustion since hourly emissions are generally higher with the use of fuel oil than with natural gas. Modeling was performed for three operating loads (100, 75, and 50 percent) at two temperatures (32°F and 95°F) for both simple cycle and combined cycle operation. In general, the "worst case" predicted 1-hour, 8-hour, and 24-hour ground-level ambient air

quality impacts occur during 50 percent load conditions at an ambient temperature of 95°F and combined cycle operation; and, the "worst case" 3-hour and annual concentrations occur during 75 percent load conditions and combined cycle operation. These "worst case" conditions were used as input in the significant impact analysis. For determination of the proposed project's significant impact area, the receptor grid consisted of 397 receptors located at the fenced property and at distances of 0.1, 0.2, 0.3, 0.4, 0.6, 1.0, 1.5, 2.0, 3.0, 4.0, and 5.0 km along 36 radials with each radial spaced at 10-degree intervals. For the AAQS and PSD Class II analyses, receptor grids were based on the size of the significant impact area for each pollutant. As shown in Table 2, SO₂ and PM₁₀ maximum predicted impacts were greater than significant impact levels. The radius of significant impact for both pollutants is approximately 1 km. Therefore, the receptor grids were located within 1 km of the proposed project at the fenced property and at the following distances: 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.8, and 1.0 km along 36 radials with each radial spaced at 10-degree intervals.

The Chassahowitzka National Wilderness Area (CWNA) is a PSD Class I area that is located 130 km from the project site at its closest point. In the PSD Class I analysis, CWNA is represented by 13 Department-approved standard discrete receptors. For the PSD Class I analysis, the ISCST2 model was used initially as a screening model for estimating impacts on the CWNA. The MESOPUFF II long range transport model was used for a more refined SO₂ impact assessment.

Meteorological data used in the ISCST2 model to determine air quality impacts consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from the National Weather Service (NWS) station at Tampa. The 5-year period of meteorological data was from 1982 through 1986. The NWS station at Tampa, located approximately 65 km west-northwest of the Hardee site, was selected for use in the study because it is the closest primary weather station to the study area and is most representative of the plant site. The surface observations included wind direction, wind speed, temperature, cloud cover and cloud ceiling.

Since five years of data were used, the highest, second-highest short-term predicted concentrations were compared with the appropriate ambient air quality standards or PSD increments. For the annual averages, the highest predicted yearly average was compared with the standards. For determining the significant impact area, both the highest short-term predicted concentrations and the highest predicted yearly averages were compared to the significant impact levels.

D. Significant Impact Analysis

As stated in the section above, the maximum air quality impacts due to SO₂ and PM₁₀ emissions from the proposed project are greater than the significant impact levels. The radii of significant impact for SO₂ and PM₁₀ are approximately 1 km.

E. PSD Increment Analysis

1. Class II Area

The PSD increment represents the amount that new sources in an area may increase ambient ground level concentrations of a pollutant. Atmospheric dispersion modeling, as previously described, was performed to quantify the amount of PSD increment consumed. The results, summarized in Table 3, show that the maximum SO₂ and PM₁₀ PSD increment consumption will not exceed the allowable Class II PSD increments.

2. Class I Area

A proposed source subject to PSD NSR must conduct a dispersion modeling analysis of its impacts on any PSD Class I area located near the source. The closest receptor point in the Class I CWNA is approximately 130 km from the Hardee project site. Using the ISCST2 model, the applicant determined the maximum predicted impacts from the proposed Hardee Unit 3 only. These impacts were then compared to the National Park Service's (NPS) significant impact levels as shown in Table 4. The results in this table show that SO₂ is the only pollutant with impacts greater than these levels.

Based on the results for SO₂, a more refined PSD Class I impact assessment using ISCST2 and MESOPUFF II was performed. All increment-consuming sources in the area of the CWNA were input into these models. Table 5 shows the results of this assessment. The maximum predicted 3-hour and 24-hour impacts due to all increment-consuming sources exceed the PSD Class I increments on numerous occasions. In order to assess the proposed project's contribution to any predicted Class I exceedances, an analysis was performed to determine all time periods and receptors at which an exceedance was predicted to occur. Both ISCST2 and MESOPUFF II were used in this assessment. For each case, the proposed project's impact was determined and compared to the NPS recommended significant impact levels. The impact of the project was always less than these significance levels at any receptor and for any time period when there were predicted exceedances or violations of increments. Therefore, the proposed project will not contribute significantly to any predicted exceedance or violation of Class I increments and may be permitted by Department rules.

F. AAQS Analysis

For the pollutants subject to an AAQS review, the total impact on ambient air is obtained by adding a "background" concentration to the maximum modeled concentration. This "background" concentration takes into account all sources of a particular pollutant that are not explicitly modeled. The results of the AAQS analysis for SO₂ and PM₁₀ are summarized in Table 6. Emissions from the proposed facility are not expected to cause or contribute to a violation of an AAQS.

G. Non-criteria Pollutants

As, Be and H₂SO₄ mist are non-criteria pollutants, which means that neither national AAQS nor PSD increments have been defined for these pollutants. The BACT determination specifies that the control of these pollutants will be through the use of a very clean fuel oil and by limiting the amount of fuel oil consumed. The fuel oil sulfur content will have a maximum limit of 0.05%, by weight.

H. Air Toxics Analysis

The maximum impacts of regulated and non-regulated toxic air pollutants that will be emitted by the project are presented in Table 7. Each pollutant's maximum 8-hour, 24-hour, and annual impact is compared to the Department's draft ARC. As shown in the table, all predicted impacts are less than their respective ARC.

V. ADDITIONAL IMPACTS ANALYSIS

A. Impacts on Soils, Vegetation, and Wildlife

The maximum ground-level concentrations predicted to occur for SO₂, PM₁₀, CO and NO_x, as a result of the proposed project, including background concentrations and all other nearby sources, will be below the associated AAQS. The AAQS are designed to protect both the public health and welfare. As such, this project is not expected to have a harmful impact on soils and vegetation in the PSD Class II area. An air quality related values (AQRV) analysis was done by the applicant for the Class I area. No significant impacts on this area are expected.

B. Impact on Visibility

Visual Impact Screening and Analysis (VISCREEN), the EPA-approved Level I visibility computer model, was used to estimate the impact of the proposed project's stack emissions on visibility in the CWNA. The results indicate that the maximum visibility impacts

do not exceed the screening criteria inside or outside the Everglades National Park Class I area. As a result, there is no significant impact on visibility predicted for the Class I area.

C. Growth-Related Air Quality Impacts

There will be a small number of temporary construction workers during construction and even smaller number of new permanent workers after the project is completed. However, there will be no significant impacts on air quality caused by associated population growth.

D. GEP Stack Height Determination

Good Engineering Practice (GEP) stack height means the greater of: (1) 65 m (213 ft) or (2) the maximum nearby building height plus 1.5 times the building height or width, whichever is less. The HRSG stacks and bypass stacks for this project will be 27.4 m (90 ft) and 22.9 m (75 ft), respectively. These stacks will not exceed the GEP stack height and will comply with GEP stack height regulations. However, these stacks will be less than GEP; therefore, the potential for building downwash to occur was considered in the modeling analysis for these stacks.

VI. CONCLUSION

Based on the information presented by the applicant in the above analysis, the Department has been provided reasonable assurances that the proposed project to construct two CTs, associated HRSGs and a steam turbine-generator for a nominal generation of 440 MW, as described in the application and subject to the conditions of approval proposed herein, will not cause or contribute to any violation of any PSD increment, ambient air quality standard, or any other technical provision of Chapters 62-212 and 62-4 of the Florida Administrative Code.

acj

do not exceed the screening criteria inside or outside the Everglades National Park Class I area. As a result, there is no significant impact on visibility predicted for the Class I area.

C. Growth-Related Air Quality Impacts

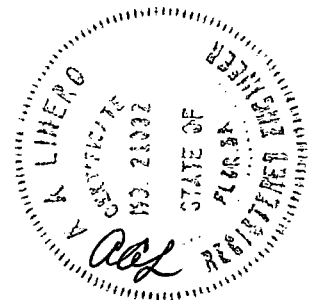
There will be a small number of temporary construction workers during construction and even smaller number of new permanent workers after the project is completed. However, there will be no significant impacts on air quality caused by associated population growth.

D. GEP Stack Height Determination

Good Engineering Practice (GEP) stack height means the greater of: (1) 65 m (213 ft) or (2) the maximum nearby building height plus 1.5 times the building height or width, whichever is less. The HRSG stacks and bypass stacks for this project will be 27.4 m (90 ft) and 22.9 m (75 ft), respectively. These stacks will not exceed the GEP stack height and will comply with GEP stack height regulations. However, these stacks will be less than GEP; therefore, the potential for building downwash to occur was considered in the modeling analysis for these stacks.

VI. CONCLUSION

Based on the information presented by the applicant in the above analysis, the Department has been provided reasonable assurances that the proposed project to construct two CTs, associated HRSGs and a steam turbine-generator for a nominal generation of 440 MW, as described in the application and subject to the conditions of approval proposed herein, will not cause or contribute to any violation of any PSD increment, ambient air quality standard, or any other technical provision of Chapters 62-212 and 62-4 of the Florida Administrative Code.



Seminole Electric Cooperative, Incorporated (SECI), Hardee Unit 3
(PSD-FL-214) (PA89-25SA)

**Table 1. Maximum Air Quality Impacts for Comparison
to the De Minimus Ambient Levels.**

Pollutant	Avg. Time	Max Predicted Impact (ug/m ³)	De Minimus Level (ug/m ³)
SO ₂	24-hour	27.8	13
PM ₁₀	24-hour	21.5	10
NO ₂	Annual	0.6	14
CO	8-hour	115	575
Beryllium *	24-hour	0.0014	0.001

* non-criteria pollutant

Table 2. Significant Impact Analysis for Class II Area

Pollutant	Averaging Time	Max. Predicted Impact (ug/m ³)	Significant Impact Level (ug/m ³)
NO ₂	Annual	0.59	1
SO ₂	Annual	0.18	1
	24-hour	27.8	5
	3-hour	65.1	25
PM ₁₀	Annual	0.12	1
	24-hour	21.5	5
CO	8-hour	115	500
	1-hour	255	2000

Seminole Electric Cooperative, Incorporated (SECI), Hardee Unit 3
(PSD-FL-214) (PA89-25SA)

Table 3. PSD Class II Increment Analysis

Pollutant	Averaging Time	Max. Predicted Impact ¹ (ug/m ³)	Allowable Increment (ug/m ³)
SO ₂	Annual	4.0	20
	24-hour	45.4	91
	3-hour	150	512
PM ₁₀	Annual	0.6	17
	24-hour	14	30

1. Highest, second-highest value over a five year period for 3-hour and 24-hour averaging times.

Table 4. Significant Impact Analysis for PSD Class I Area

Pollutant	Averaging Time	Max. Predicted Impact (ug/m ³)	National Park Service (NPS) Significant Impact Level (ug/m ³)
NO ₂	Annual	0.022	0.025
SO ₂	Annual	0.012	0.025
	24-hour	0.30	0.07
	3-hour	1.9	0.48
PM ₁₀	Annual	0.008	0.08
	24-hour	0.20	0.33

Seminole Electric Cooperative, Incorporated (SECI), Hardee Unit 3
(PSD-FL-214) (PA89-25SA)

Table 5. PSD Class I Increment Analysis

Pollutant	Averaging Time	Max. Predicted Impact ¹ (ug/m ³)	Allowable Increment (ug/m ³)
SO ₂	Annual	0.3	2
	24-hour	6.4 ²	5
	3-hour	26.1 ²	25

1. Highest, second-highest value over a five year period for 3-hour and 24-hour averaging times.
2. The project has less than significant impacts for all predicted exceedances of SO₂ increments.

Table 6. Ambient Air Quality Impact Analysis

Pollutant	Averaging Time	Modeled Sources Impact (ug/m ³)	Background Conc. (ug/m ³)	Max Predicted Impact ¹ (ug/m ³)	Florida AAQS (ug/m ³)
SO ₂	Annual	18	11	29	60
	24-hour	88	50	138	260
	3-hour	178	256	434	1,300
PM ₁₀	Annual	4	20	24	50
	24-hour	31	70	101	150

1. Highest, second-highest value over a five year period for 3-hour and 24-hour averaging times.

Seminole Electric Cooperative, Incorporated (SECI), Hardee Unit 3
(PSD-FL-214) (PA89-25SA)

Table 7. Air Toxics Analysis

Pollutant	8- hour		24- hour		Annual	
	Impact (ug/m ³)	ARC (ug/m ³)	Impact (ug/m ³)	ARC (ug/m ³)	Impact (ug/m ³)	ARC (ug/m ³)
Arsenic	0.0055	2	0.0027	0.48	0.000017	0.00023
Beryllium	0.0028	0.02	0.0014	0.0048	0.000009	0.00042
Barium	0.022	5	0.011	1.2	0.00007	50
Cadmium	0.012	0.5	0.006	0.12	0.000037	0.00056
Chlorine	0.028	15	0.014	3.6	.00007	0.4
Chromium+6	0.053	0.5	0.026	0.12	0.00003	0.000083
Cobalt	0.01	0.5	0.005	0.12	-	-
Fluoride	0.037	25	0.018	6	-	-
Formaldehyde	0.45	12	0.22	2.88	0.0014	0.077
Antimony	0.024	5	0.012	1.2	0.00008	0.3
Manganese	0.38	50	0.19	12	.00099	0.4
Mercury	0.0099	0.5	0.0048	0.12	0.000026	0.3
Nickel	1.34	10	0.66	2.4	0.0007	0.0042
Selenium	0.026	0.48	0.013	2	-	-
Vanadium	0.078	0.5	0.038	0.12	0.0002	2
Zinc	1.77	10	0.86	2.4	-	-

Note: ARC = Ambient Reference Concentration



Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

PERMITTEE:
Seminole Electric Cooperative
Incorporated
P.O. Box 272000
Tampa, FL 33688-2000

Permit Number: PSD-FL-214
(PA-89-25SA)
Expiration Date: January 1, 2000
County: Polk & Hardee
Latitude/Longitude: 27°38'30"N
81°57'45"W
Project: 440 MW Combined Cycle
Power Plant

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-212 and 62-4. 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 specifically described as follows:

For a 440 MW combined cycle power plant consisting of two 150 MW combustion turbines (CTs), two heat recovery steam generators (HRSGs), a 140 MW steam turbine generator and a 4.4 million gallon fuel oil storage tank. The maximum heat input at 32°F is 1,799 MMBtu/hr/CT (natural gas) and 1,972 MMBtu/hr/CT (oil). The plant will be located at the Polk and Hardee County site near Bowling Green, Florida which is also the site of a 295 MW power plant which is operated by TECO Power Services. The combustion turbines are to be Westinghouse Model 501F or equivalent and equipped with dry low NO_x combustors or an equivalent system for natural gas firing and wet injection for fuel oil firing. The CT will be fired with natural gas and No. 2 low sulfur fuel oil with a sulfur content limit not to exceed 0.05 percent, by weight, as a back-up only.

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:

1. Seminole Electric Cooperative Incorporated's (SECI) application received May 9, 1994.
2. Department's letters dated June 27, September 21, and November 16, 1994.
3. SECI's letters dated August 26, October 6, and November 23, 1994.
4. SECI's letter dated February 9, 1995.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

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, F.S. 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), F.S., 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 F.S. and Department rules, unless specifically authorized by an order from the Department.

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.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

GENERAL CONDITIONS:

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 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 F.S. or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, F.S. 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 F.S. after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by F.S. or Department rules.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

GENERAL CONDITIONS:

11. This permit is transferable only upon Department approval in accordance with Rules 62-4.120 and 62-730.300, 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 (NSPS)

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.
- 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.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

GENERAL CONDITIONS:

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:

The construction and operation of the project shall be in accordance with all applicable provisions of Chapters 62-210 thru 62-297 and 62-4, Florida Administrative Code (F.A.C.), and 40 CFR 60, Subpart GG, Appendix A, Appendix B, and Appendix F (1994 version). The following emission limitations and conditions reflect the BACT determinations for the 300 megawatts (MW; two 150 MW combined cycle combustion turbines) of generating capacity. Each combustion turbine (CT) will be connected to a heat recovery steam generator (HRSG), which will recover the waste heat to produce steam for utilization in a single 140 MW (net) steam generator. There is no fuel firing in the associated HRSG. The facility will have a total nominal generating capacity of 440 MW (net). In addition to the foregoing, the project shall comply with the following Specific Conditions:

A. General Requirements

1. Pursuant to Rule 62-212.200(56), F.A.C., Potential to Emit (PTE), the maximum heat input to each Westinghouse 501F CT, or equivalent, at an ambient temperature of 32°F, shall neither exceed 1,799 MMBtu/hr while firing natural gas nor 1,972 MMBtu/hr while firing fuel oil.

2. Pursuant to Rule 62-212.200(56), F.A.C., PTE, the CTs may operate continuously, i.e., 8,760 hrs/year.

3. Pursuant to Rule 62-212.200(56), F.A.C., PTE, only natural gas or No. 2 fuel oil is allowed to be fired in the CTs. The maximum sulfur content limit of the No. 2 fuel oil shall not exceed 0.05 percent, by weight.

4. Pursuant to Rule 62-212.200(56), F.A.C., PTE, the maximum No. 2 fuel oil consumption allowed to be burned is 41,751,000 gallons per year, which is equivalent to 1500 hours per CT per year of operation (not to exceed 3,000 hrs/yr between the two CTs) at full-load. The No. 2 fuel oil is to be used as a back-up fuel only.

5. Pursuant to Rule 62-296.310(3), F.A.C., Unconfined Emissions of Particulate Matter (PM), the emissions of unconfined PM shall be minimized during the construction period by covering or watering dust generating areas.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

B. Emission Limits

1. Pursuant to Rule 62-212.410, F.A.C., BACT, the maximum allowable emission limitations from two CTs, when firing natural gas or No. 2 fuel oil, shall not exceed the following:

MAXIMUM ALLOWABLE EMISSION LIMITATIONS

<u>POLLUTANT</u>	<u>FUEL</u>	<u>CONCENTRATION</u>	<u>lbs/hr(a)</u>	<u>TPY(b)</u>	<u>TPY(TOTAL)c</u>
NO _x	Gas	15 ppmvd(d)	104	911	1139
	Oil	42 ppmvd(e)	350	525	
CO	Gas	20 ppmvd	71	622	614
	Oil	25 ppmvd	91	136	
PM/PM ₁₀	Gas		7	61	145
	Oil		67	100	
SO ₂	Gas		5	44	175
	Oil		100	150	
VOC	Gas	5 ppmvd	10	88	99
	Oil	10 ppmvd	21	31	
Sulfuric Acid Mist	Gas		1	9	38
	Oil		22	33	
Beryllium	Oil		0.0049	0.007	0.007
Arsenic	Oil		0.0097	0.014	0.014
Visible Emissions	Gas		≤ 10 percent opacity		
	Oil		≤ 10 percent opacity		

(a) The emission limitations in lbs/hr/CT are a 1-hour average.

(b) The annual emission limitations (TPY) for natural gas are based on two CTs operating at full load for 8,760 hours per year. The annual emission limitations (TPY) for fuel oil are based on the equivalent of full-load operation for a maximum of 1500 hours per year for each of the two CTs (not to exceed 3,000 hrs/yr between the two CTs). The emission calculations are also based at a worst case ambient temperature of 32°F.

(c) Maximum allowable emissions from two CTs if any fuel oil is burned at the facility during the year. The emission calculations are also based at an ambient temperature of 59°F.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

(d) The natural gas NO_x allowable emission limitation of 15 ppmvd is corrected to 15 percent O₂. Compliance shall be determined through the initial and annual compliance tests.

(e) The fuel oil NO_x allowable emission limitation of 42 ppmvd is corrected to 15 percent oxygen. Compliance shall be determined through the initial and annual compliance tests. The annual compliance test will be required if the fuel oil is fired for more than 400 hours in the preceding 12-months.

2. The following estimated CT emissions are tabulated for PSD tracking purposes only:

ESTIMATED EMISSIONS

<u>POLLUTANT</u>	<u>FUEL</u>	<u>TPY</u>
Lead	Oil(a,b)	0.16
Fluoride	Oil(a,b)	0.090
Mercury	Gas(c)	0.0003
	Oil(a,b)	0.024

(a) The annual emission limitations (TPY) for fuel oil are based on full-load operation for a total of 3,000 hours per year between the two CTs at an ambient temperature of 59°F.

(b) The No. 2 fuel oil shall have a maximum sulfur content limit of 0.05 percent, by weight.

(c) The annual emission limitation (TPY) for natural gas is based on two CTs operating at full-load for 8,760 hours per year at an ambient temperature of 59°F.

3. The permittee will install a dry low-NO_x combustor system or an equivalent system on each CT. The permittee shall make every practicable effort to achieve the lowest possible NO_x emission rate, but must not exceed 15 ppmvd at 15 percent O₂ per CT on a continuous basis when firing natural gas.

4. After the initial compliance tests on the CTs, the permittee shall operate a certified continuous emissions monitor for NO_x emissions and collect 12 months of monitoring data. The monitor will, at a minimum, meet the requirements of 40 CFR 60, Appendix F's quality assurance procedures. Within 18 months after the initial compliance test, the permittee shall prepare and submit

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

for the Department's review an engineering report regarding the collection and the analysis of the data gathered from the monitor. In addition, this report shall include a conclusion regarding the lowest NO_x emission rate that can be consistently achieved with a reasonable operating margin, taking into account long-term performance expectations and assuming good operating and maintenance practices. The report shall also include results of the testing requirements of 40 CFR 60, Appendix F's quality assurance procedures and the actual CEMS data for the period of the study in an acceptable format.

5. The Department will make a determination as to whether to seek to revise the permitted NO_x emission limitation and will base it on the engineering data report submitted by the permittee. If the data demonstrate that a NO_x emission rate of less than 15 ppmvd at 15 percent O₂ is consistently achievable, the NO_x emission limit may be adjusted accordingly, but not lower than 9 ppmvd at 15 percent O₂.

6. Excess emissions from a turbine resulting from start up, shutdown, malfunction, or load change shall be reported in accordance with 40 CFR 60.334(c) and accepted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24-hour period unless specifically authorized by the Department for a longer duration. The permittee shall provide a general description of the procedures to be followed during periods of start up, shutdown, malfunction, or load change to ensure that the best operational practices to minimize emissions will be adhered to and the duration of any excess emissions will be minimized. The description should be submitted to the Department along with the initial compliance test data. The description may be updated as needed by submitting such update to the Department within thirty (30) days of implementation.

C. Performance Testing

1. Initial (I) compliance tests shall be performed on each CT using both fuels. Testing of emissions shall be conducted at 95-100% of the manufacturer's rated heat input based on the average ambient air temperature for the CT during the test. Annual (A) compliance tests shall be performed on the CT with the fuel(s) used for more than 400 hours in the preceding 12-month period. Tests at permit renewal shall also be performed on the non-PSD pollutants. Tests and procedures shall be in accordance with 40 CFR 60.335. Tests shall be conducted using EPA reference methods in accordance with 40 CFR 60, Appendix A, as adopted by reference in Chapter 62-297, F.A.C, and follows:

a. Reference Method 5B for PM (I, A: for oil only; assumption is that all PM is PM₁₀).

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

- b. Reference Method 9 for VE (I, A).
- c. Reference Method 10 for CO (I, A).
- d. Reference Method 20 for NOx (I, A).
- e. Reference Method 18 or 25A for VOC (I, A).
- f. Reference Method 8 for H₂SO₄ Mist (I, A).

g. Trace elements of Beryllium (Be) and Arsenic (As) shall be tested (I, for oil only) using EMTIC Interim Test Methods. As an alternative, EPA Method 104 for Be may be used; or, Be and As may be determined from fuel analysis using either Method 7090 or 7091 and sample extraction using Method 3040, as described in the EPA solid waste regulations SW 846.

h. ASTM D4294 (or equivalent) for sulfur content of distillate oil (I and A), which can be used for determining SO₂ emissions annually.

i. ASTM D1072-80, D3031-81, D4084-82, or D3246-81 (or equivalent) for sulfur content of natural gas (I; and, A if deemed necessary by the Department).

j. No other methods may be used for compliance testing unless prior Departmental approval has been received in writing.

2. The maximum sulfur content of the fuel oil shall not exceed 0.05 percent, by weight. Compliance shall be demonstrated in accordance with the requirements of 40 CFR 60.334(b), which imposes testing for the sulfur content of the fuel oil in the storage tanks on each occasion that fuel is transferred to the storage tanks from any other source. Testing for the fuel oil lower heating value shall also be conducted on the same schedule.

D. Monitoring Requirements

Monitoring of operations shall be in accordance with 40 CFR 60.334. Also, and for each CT, the permittee shall install, operate, and maintain a continuous emission monitoring system (CEMS) to monitor nitrogen oxides in accordance with 40 CFR 60, Appendix F, and, if necessary, a diluent gas (CO₂ or O₂). The Federal Acid Rain Program requirements of 40 CFR 75 shall apply when those requirements are adopted and if applicable.

1. Each CEMS shall meet performance specifications of 40 CFR 60, Appendix B.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

2. CEMS data shall be recorded and reported in accordance with Rule 62-297.500, F.A.C.; 40 CFR 60; and, 40 CFR 75, if it becomes applicable. The record shall include periods of start up, shutdown, load change, and malfunction.

3. A malfunction means any sudden and unavoidable failure of air pollution control equipment or process equipment to operate in a normal or usual manner. Failures that are caused entirely or in part by poor maintenance, careless operation or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions.

4. The procedures under 40 CFR 60.13 shall be followed for installation, evaluation, and operation of all CEMS. If applicable, 40 CFR 75 shall apply when the Federal Acid Rain Program is adopted.

5. For purposes of the reports required under this permit, excess emissions are defined as any calculated average emission rate, as determined pursuant to Condition B.6 herein, which exceeds the applicable emission limitation in Condition B.1.

E. Notification, Reporting and Recordkeeping

1. To determine compliance with the natural gas and fuel oil firing heat input limitation, the permittee shall maintain daily records of natural gas and fuel oil consumption for each turbine, and provide the heating value for each fuel during the compliance test. All records shall be maintained for a minimum of five years after the date of each record and shall be made available to representatives of the Department upon request.

2. The project shall comply with all the applicable requirements of Chapters 62-210 through 62-297 and 62-4, F.A.C., and 40 CFR 60, Subparts A and GG. The requirements shall include:

a. 40 CFR 60.7(a)(1) - By postmarking or delivering notification of the start of construction no more than 30 days after such date.

b. 40 CFR 60.7(a)(2) - By postmarking or delivering notification of the anticipated date of the initial start up of each CT not less than 30 days prior to such date.

c. 40 CFR 60.7(a)(3) - By postmarking or delivering notification of the actual start up of each turbine within 15 days after such date.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

d. 40 CFR 60.7(a)(5) - By postmarking or delivering notification of the date for demonstrating the CEMS performance, no less than 30 days prior to such date.

e. 40 CFR 60.7(a)(6) - By postmarking or delivering notification of the anticipated date for conducting the opacity observations no less than 30 days prior to such date.

f. 40 CFR 60.7(b) - By initiating a recordkeeping system to record the occurrence and duration of any start up, shutdown, load change and malfunction of a turbine, malfunction of the air pollution control equipment, and the periods when the CEMS is inoperable.

g. 40 CFR 60.7(c) - By postmarking or delivering a quarterly excess emissions and monitoring system performance report within 30 days after the end of each calendar quarter. This report shall contain the information specified in 40 CFR 60.7(c) and (d).

h. 40 CFR 60.8(a) - By conducting all performance tests within 60 days after achieving the maximum turbine and boiler firing rates, but not more than 180 days after the initial start up of each CT.

i. 40 CFR 60.8(d) - By postmarking or delivering notification of the date of each performance test required by this permit at least 30 days prior to the test date; and,

j. Rule 62-297.345 - By providing stack sampling facilities for each turbine.

k. All notifications and reports required by this specific condition shall be submitted to the Department's Southwest District office. Performance test results shall be submitted within 45 days of completion of such test.

3. The following information shall be submitted to the Department's Bureau of Air Regulation within 90 days after the permittee has made the selection of the following:

a. Description of the final selection of the turbines for installation at the facility. The descriptions shall include the specific make and model numbers and any changes in the proposed method of operation, fuels, emissions or equipment.

b. Description of the CEMS selected. The description shall include the type of sensors and the manufacturer and model numbers of the equipment.

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

4. The following protocols shall be submitted to the Department's Southwest District office for approval:

a. CEMS Protocol - Within 90 days after selection of the CEMS, but prior to the initial startup, a CEMS protocol describing the system, its installation, operating and maintenance characteristics and requirements. The protocol shall meet the requirements of 40 CFR 60.13, Appendix B and Appendix F.

b. Performance Test Protocol - At least 90 days prior to conducting the initial performance tests required by this permit, the permittee shall submit to the Department's Southwest District office a protocol outlining the procedures to be followed, the test methods and any differences between the reference methods and the test methods proposed to be used to verify compliance with the conditions of this permit. The Department shall approve the testing protocol provided that it meets the requirements of this permit.

c. Heat Input Curves - Within 90 days after selection of the turbine, manufacturer's curves or equations of heat input corrections to other temperatures shall be provided to the Department. Subject to the approval by the Department for technical validity while applying sound engineering principles, the manufacturer's curves shall be used to establish the heat input rates over a range of temperatures for the purposes of compliance determination.

F. Modifications

The permittee shall give written notification to the Department when there is any modification to this facility pursuant to Rule 62-212.200, F.A.C., Definitions - Modifications. This notice shall be submitted sufficiently in advance of any critical date involved to allow sufficient time for review, discussion, and revision of plans, if necessary. Such notice shall include, but not be limited to, information describing the precise nature of the change; modifications to any emission control system; production capacity of the facility before and after the change; and, the anticipated completion date of the change.

G. No. 2 Fuel Oil Storage Tank

The permittee shall be in compliance with the monitoring requirements of 40 CFR 60.116b(a) and (b).

PERMITTEE:
Seminole Electric Cooperative Inc.
Expiration Date: January 1, 2000

Permit Number: PSD-FL-214
(PA-89-25SA)

SPECIFIC CONDITIONS:

H. Additional General Conditions

1. Pursuant to Rule 62-4.090, F.A.C., the permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation prior to 60 days before the expiration of the permit.

2. Pursuant to Rules 62-4.055 and 62-4.220, F.A.C., an application for an operation permit must be submitted to the Department's Southwest District office at least 90 days prior to the expiration date of this construction permit. To properly apply for an operation permit, the permittee shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit.

**STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION**

Virginia B. Wetherell, Secretary

Best Available Control Technology (BACT) Determination
Seminole Electric Cooperative Incorporated (SECI)
Hardee and Polk Counties
PSD-FL-214
PA89-25SA

The applicant proposes to install two combined cycle combustion turbine (CT) generators and associated steam cycle at a facility adjacent to the Hardee Power Station's existing units located in Hardee and Polk Counties. The facility, referred to as Hardee Unit 3, will consist of two 150 megawatt (MW) Westinghouse Model 501F, or equivalent, advanced CTs. Each CT will be connected to a heat recovery steam generator (HRSG), which will recover the waste heat to produce steam for utilization in a single 140 MW (net) steam turbine. The facility will have a total nominal generating capacity of 440 MW (net). The primary fuel for the CTs will be natural gas, with distillate fuel oil containing a maximum sulfur content of 0.05 percent, by weight, designated as the backup fuel. Natural gas will be transported to the facility via pipeline and fuel oil will be delivered by truck and stored on site in a 4.4 million gallon above ground storage tank.

In 1990, the Hardee Power Station was certified for 660 MW of generation in a phased construction schedule as follows:

1. TECO Power Services - 295 MW (1993) (Phase 1A).
2. TECO Power Services - 145 MW (future unit) (Phase 1B).
3. SECI - 220 MW (date unspecified) (Phase 2).

This new certification does not change Phases 1A and 1B, above, but will increase the SECI certified generation (Phase 2) from 220 MW to 440 MW, with an inservice date of January, 1999. A simplified flow diagram of Hardee Unit 3 is shown in Figure 1. Because of the phased construction activity, the Department looked at the total emissions from the Phase 2 project to see if any additional pollutants (i.e., Hg, Pb, etc.) should be reviewed from the BACT determination process.

The applicant has indicated the maximum annual air pollutant emission rates associated with the facility, based on 100 percent capacity factor and type of fuel fired, to be as follows:

Emissions (TPY)					PSD Significant Emission Rate (TPY)	Subject to PSD Review?
Pollutant	Fuel Oil	Natural Gas	Natural Gas- Steam for Power Augmentation	Total		
<u>Potential Emissions (Without Power Augmentation)^B</u>						
SO ₂	140.1	34.8	NA	174.9	40	Yes
PM/PM ₁₀	94.1	50.4	NA	144.5	25/15	Yes
NO _x	466.2	673.2	NA	1,139.4	40	Yes
CO	127.9	486.1	NA	614.0	100	Yes
VOC	29.2	69.5	NA	98.7	40	Yes
Lead	0.16	NA	NA	0.16	0.6	No
Arsenic	0.014	NA	NA	0.014	Any	Yes
Beryllium	0.0069	NA	NA	0.0069	0.0004	Yes
Fluoride	0.090	NA	NA	0.090	3	No
Mercury	0.024	0.0003	NA	0.025	0.1	No
Sulfuric Acid Mist	31.1	6.86	NA	38.0	7	Yes

Potential Emissions (With Power Augmentation)^b

SO ₂	140.1	25.2	9.32	174.6	40	Yes
PM/PM ₁₀	94.1	36.5	14.4	145.1	25/15	Yes
NO _x	466.2	487.7	251.5	1,205.4	40	Yes
CO	127.9	352.2	313.4	793.5	100	Yes
VOC	29.2	50.3	17.9	97.5	40	Yes
Lead	0.16	NA	NA	0.16	0.6	No
Arsenic	0.014	NA	NA	0.014	Any	Yes
Beryllium	0.0069	NA	NA	0.0069	0.0004	Yes
Fluoride	0.090	NA	NA	0.090	3	No
Mercury	0.024	0.0002	0.00009	0.025	0.1	No
Sulfuric Acid Mist	31.1	4.97	1.84	37.9	7	Yes

Note: NA = not applicable.

^a Emission rates are based on two CTs firing fuel oil for 1,500 hours each and natural gas for 7,260 hours at ambient temperature of 59°F (without power augmentation) and relative humidity of 60 percent.

^b Emission rates are based on two CTs firing fuel oil for 1,500 hours each and natural gas for 7,260 hours at ambient temperature of 59°F and relative humidity of 60 percent. Natural gas combustion includes 2,000 hours of steam for power augmentation at ambient temperature of 80°F and relative humidity of 80 percent.

FIGURE 1

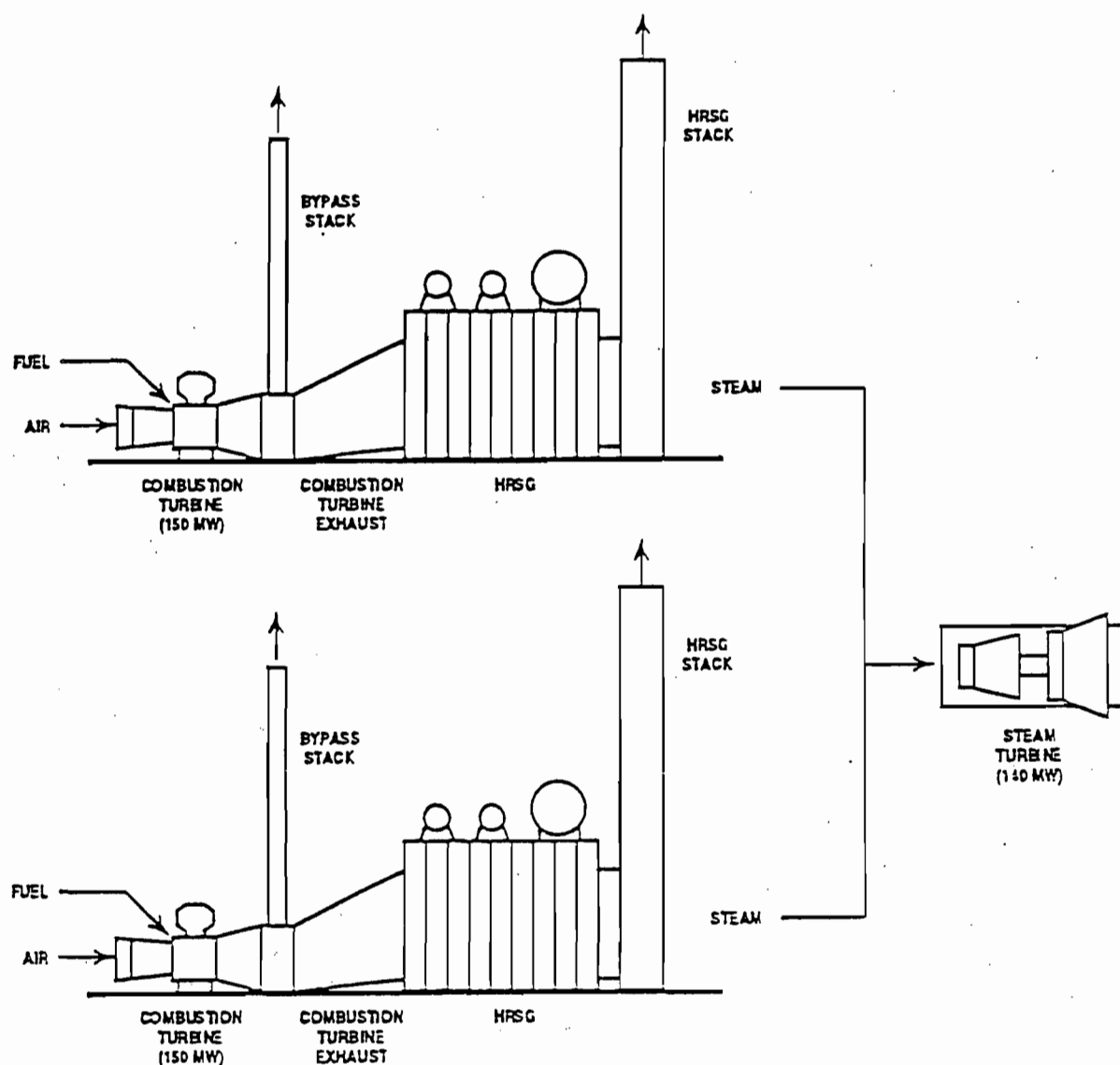


Figure 2-4
Schematic Flow Diagram of Hardee Unit 3 Facility

Rule 62-212.400, Florida Administrative Code (F.A.C.), Stationary Source Preconstruction Review, requires a BACT review for all regulated pollutants emitted in an amount equal to or greater than the significant emission rates listed in the previous table.

Date of Receipt of a BACT Application
 May 9, 1994.

BACT Determination Requested by the Applicant

Combined Cycle Combustion Turbines

<u>Pollutant</u>	<u>Fuel</u>	
	<u>Natural Gas</u>	<u>Fuel Oil</u>
NO _x	15 ppmvd @ 15% O ₂ at ISO 25 ppmvd @ 15% O ₂ at ISO (power augmentation mode) Dry Low NO _x Burners	42 ppmvd @ 15 % O ₂ at ISO Water Injection Limited Fuel Oil Operation
SO ₂	Firing with Natural Gas	Low Sulfur Fuel Oil (0.05 %, by weight) Limited Fuel Oil Operation
CO	20 ppmvd 50 ppmvd (power augmentation mode) Combustion Control	25 ppmvd Combustion Control Limited Fuel Oil Operation
VOC	5 ppmvd Combustion Control	10 ppmvd Combustion Control
PM/PM ₁₀	Combustion Control	Combustion Control Limited Fuel Oil Operation
Beryllium	Good Quality Fuel	Good Quality Fuel Limited Fuel Oil Operation
Inorganic Arsenic	Good Quality Fuel	Good Quality Fuel Limited Fuel Oil Operation
Benzene	Combustion Control	N/A

BACT Determination Procedure

In accordance with Rule 62-212.410, F.A.C., BACT Review, Stationary Source - Preconstruction Review, the BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department, on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and

available methods, systems, and techniques. In addition, the regulations state that in making the BACT determination the Department shall give consideration to:

- (a) Any Environmental Protection Agency determination of BACT pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 (Standards of Performance for New Stationary Sources) or 40 CFR Part 61 (National Emission Standards for Hazardous Air Pollutants).
- (b) All scientific, engineering, and technical material and other information available to the Department.
- (c) The emission limiting standards or BACT determinations of any other state.
- (d) The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine for the emission source in question the most stringent control available for a similar or identical source or source category. If it is shown that this level of control is technically or economically infeasible for the source in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

The air pollutant emissions from combined cycle power plants can be grouped into categories based upon what control equipment and techniques are available to control emissions from these facilities. Using this approach, the emissions can be classified as follows:

- o Combustion Products (e.g., particulate matter and trace metals). Controlled generally by good combustion of clean fuels.
- o Products of Incomplete Combustion (e.g., CO and VOCs). Control is largely achieved by proper combustion techniques.
- o Acid Gases (e.g., SO₂, NO_x). Controlled generally by gaseous control devices and fuel quality.

Grouping the pollutants in this manner facilitates the BACT analysis because it enables the equipment available to control the type or group of pollutants emitted and the corresponding energy, economic, and environmental impacts to be examined on a common

basis. Although all of the pollutants addressed in the BACT analysis may be subject to a specific emission limiting standard as a result of PSD review, the control of "nonregulated" air pollutants is considered in imposing a more stringent BACT limit on a "regulated" pollutant (i.e., particulate matter, sulfur dioxide, fluorides, sulfuric acid mist, etc.), if a reduction in "nonregulated" air pollutants can be directly attributed to the control device selected as BACT for the abatement of the "regulated" pollutants.

BACT POLLUTANT ANALYSIS

COMBUSTION PRODUCTS

Particulate Matter (PM/PM₁₀)

The design of the CT system ensures that PM/PM₁₀ will be minimized by combustion control and the use of clean fuels. The PM/PM₁₀ emissions from the CTs, when burning natural gas and fuel oil, will not exceed 7 lbs/hr/CT (gas) and 67 lbs/hr/CT (oil) for the Westinghouse 501F, or equivalent, (with no power augmentation) at 100% load. The assumption is that all PM emissions are PM₁₀ emissions.

Beryllium and Inorganic Arsenic (Be, As)

The Department agrees with the applicant's rationale that there are no feasible methods to control Be, As, and other trace pollutants, except by requiring good quality fuel. Limiting the fuel sulfur content to a maximum of 0.05%, by weight, assures good quality fuel and minimizes any concerns for these pollutants.

PRODUCTS OF INCOMPLETE COMBUSTION

Carbon Monoxide (CO) and Volatile Organic Compounds (VOC)

The emissions of CO exceed the PSD significant emission rate of 100 TPY with the Westinghouse 501F CT. The applicant has indicated that the CO emissions from the proposed combined cycle CTs with dry low-NO_x combustors are 20 ppmvd for natural gas firing (50 ppmvd during power augmentation) and 25 ppmvd for fuel oil firing with water injection. VOC emissions have been based on exhaust concentrations of 5 & 10 ppmvd for natural gas and fuel oil firing, respectively.

The majority of BACT emissions limitations have been based on combustion controls for CO and VOC minimization. Additional control is achievable through the use of catalytic oxidation. Catalytic oxidation is a post-combustion control that has been

employed in CO nonattainment areas where regulations have required CO emission levels to be less than those associated with wet injection. These installations have been required to use LAER technology and typically have CO limits in the 10 ppmvd range.

In an oxidation catalyst control system, CO emissions are reduced by allowing unburned CO to react with oxygen at the surface of a precious metal catalyst, such as platinum. Oxidation of CO starts at about 300°F, with efficiencies above 90 percent occurring at temperatures above 600°F. Catalytic oxidation occurs at temperatures 50 percent lower than that of thermal oxidation, which reduces the amount of thermal energy required. For CT/HRSG combinations, the oxidation catalyst can be located directly after the CT or in the HRSG. Catalyst size depends upon the exhaust flow, temperature, and desired efficiency.

The application of oxidation catalyst is not technically feasible for gas turbines fired with fuel oil due to the oxidation of sulfur compounds and excessive formation of H₂SO₄ mist emissions. Catalytic oxidation has not been demonstrated on a continuous basis when using fuel oil.

Use of oxidation catalyst technology would be feasible for a natural gas-fired unit; however, the cost effectiveness of \$4,000 per ton of CO removed for the Westinghouse 501F CT unit will have an economic impact on this project.

ACID GASES

Nitrogen Oxides (NO_x)

The emissions of NO_x represent a significant portion of the total emissions generated by this project and need to be controlled, if deemed appropriate. As such, the applicant presented an extensive analysis of the different available technologies for NO_x control.

The applicant has stated that BACT for NO_x will be met by using dry low-NO_x combustors to limit emissions to 15 ppmvd (corrected to 15% O₂ at ISO conditions) when burning natural gas (25 ppmvd corrected to 15% O₂ at ISO conditions during power augmentation) and 42 ppmvd (corrected to 15% O₂ at ISO conditions) with water injection and when burning fuel oil.

A review of the EPA's BACT/LAER Clearinghouse indicates that the lowest NO_x emission limit established to date for a combustion turbine is 4.5 ppmvd at 15% oxygen. This level of control was accomplished through the use of water injection and a selective catalytic reduction (SCR) system.

SCR is a post-combustion method for control of NO_x emissions. The SCR process combines vaporized ammonia with NO_x in the presence of a catalyst to form nitrogen and water. The vaporized ammonia is injected into the exhaust gases prior to passage through the catalyst bed. The SCR process can achieve up to 90% reduction of NO_x with a new catalyst. As the catalyst ages, the NO_x reduction efficiency, while holding ammonia slip emissions constant, will decrease.

The effect of exhaust gas temperature on NO_x reduction depends on the specific catalyst formulation and reactor design. Generally, SCR units can be designed to achieve effective NO_x control over a 100-300°F operating window within the bounds of 450-800°F. The preferable operating window is within the bounds of 600-750°F for effective NO_x control.

Most commercial SCR systems operate over a temperature range of about 600-750°F. At levels above and below this window, the specific catalyst formulation will not be effective and NO_x reduction will decrease. Operating at high temperatures can permanently damage the catalyst through sintering of surfaces. Increased water vapor content in the exhaust gas (as would result from water or steam injection in the gas turbine combustor) can shift the operating temperature window of the SCR reactor to slightly higher levels.

As stated by the applicant, the exhaust temperatures of the proposed combined cycle CTs for this site are between 950°F to 1100°F. However, catalyst can be located in the appropriate temperature range in the HRSG, but the applicant has stated that effective SCR operation will be difficult to maintain under significant load and ambient temperature variations. In this case, application of an SCR system appears to be technically feasible.

Although technically feasible, the applicant has rejected using SCR on the combined cycle units because of economic, energy, and environmental impacts. The applicant has identified the following limitations:

- a) Reduced power output.
- b) Emissions of unreacted ammonia (slip).
- c) Increased H_2SO_4 mist emissions.
- d) Disposal of hazardous waste generated (spent catalyst).
- e) Ammonium bisulfate and ammonium sulfate particulate matter emissions (ammonium salts) due to the reaction of NH_3 with SO_3 present in the exhaust gases.

- f) Cost effectiveness for the application of SCR technology to the project was considered to be \$6,802 per ton of NO_x removed when compared to the use of dry low-NO_x combustors.

Since SCR has been determined to be BACT for several combined cycle facilities, the EPA has clearly stated that there must be unique circumstances to consider the rejection of such control on the basis of economics.

In a recent letter from EPA Region IV to the Department regarding the permitting of a combined cycle facility (Tropicana Products, Inc.), the following statement was made:

"In order to reject a control option on the basis of economic considerations, the applicant must show why the costs associated with the control are significantly higher for this specific project than for other similar projects that have installed this control system or in general for controlling the pollutant."

For fuel oil firing, the cost associated with controlling NO_x emissions must take into account the potential operating problems that can occur with using SCR in the oil firing mode.

A concern associated with the use of SCR on combined cycle projects is the formation of ammonium bisulfate. For the SCR process, ammonium bisulfate can be formed due to the reaction of sulfur in the fuel and the ammonia injected. The ammonium bisulfate formed has a tendency to plug the tubes of the HRSG, thus leading to operational problems. As this is the case, SCR has been judged to be technically infeasible for oil firing in some previous BACT determinations.

The latest information available now indicates that SCR can be used for oil firing provided that adjustments are made in the ammonia to NO_x injection ratio. For natural gas firing operation, NO_x emissions can be controlled with up to a 90 percent efficiency using a 1 to 1 or greater ammonia injection ratio. By lowering the injection ratio for oil firing, testing has indicated that NO_x can be controlled with efficiencies ranging from 60 to approximately 75 percent. When the injection ratio is lowered, there is not a problem with ammonium bisulfate formation since essentially all of the ammonia is able to react with the NO_x present in the combustion gases. Furthermore, by using low sulfur fuel oil with low metal content and limiting excess air, the amount of sulfur trioxide available to form ammonium bisulfate is minimized. Based on this strategy SCR has been both proposed and established as BACT for oil fired combined cycle facilities with NO_x emission limits ranging from 11.7 to 25 ppmvd depending on the efficiency of control established.

The applicant has indicated that the total levelized annual operating cost to install SCR for this project at 100 percent capacity factor and burning natural gas is \$4,462,200. Taking into consideration the total annual cost, a cost/benefit analysis of using SCR can now be developed.

For the Westinghouse 501F combined cycle CT and based on the information supplied by the applicant, it is estimated that the maximum annual NO_x emissions using dry low-NO_x combustors will be 1,205 tons/year (assuming 7,260 and 1,500 hours of operation per year while firing natural gas and fuel oil, respectively, including 2,000 hours with power augmentation on natural gas). Assuming that SCR would reduce the NO_x emissions from 15 ppmvd to 9 ppmvd when firing natural gas and from 25 ppmvd to 9 ppmvd during power augmentation mode, and from 42 ppmvd to 15 ppmvd when firing fuel oil, 549 tons of NO_x would be emitted annually. When this reduction of 656 TPY is compared with the application of dry low-NO_x combustors and considering the total levelized annual operating cost differential to be \$4,462,200, the cost per ton of controlling NO_x is \$6,802. These calculated costs are higher than has previously been approved as BACT.

A review of the latest Department BACT determinations show limits of 15 ppmvd (natural gas) using low-NO_x combustor technology for combined cycle CTs. Combustion turbine manufacturers are currently developing programs using both steam/water injection and dry low-NO_x combustor technology to achieve a NO_x emission control level of 9 ppmvd when firing natural gas.

Sulfur Dioxide (SO₂)

The applicant has stated that SO₂ emissions will be controlled by using fuel oil with a maximum sulfur content of 0.05%, by weight. This will result in an annual emissions rate of 140 TPY of SO₂ (each CT operating at 1,500 hours per year on fuel oil) plus 35 TPY of SO₂ when firing natural gas.

In accordance with the "top down" BACT review approach, only two alternatives exist that would result in lower SO₂ emissions. These include the use of a lower sulfur content fuel oil or the use of wet lime injection or limestone-based scrubbers, otherwise known as flue gas desulfurization (FGD).

In developing the NSPS for stationary gas turbines, EPA recognized that FGD technology was inappropriate to apply to these combustion units. EPA acknowledged in the preamble of the proposed NSPS that "Due to the high volumes of exhaust gases, the cost of flue gas desulfurization (FGD) to control SO₂ emissions from stationary gas turbines is considered unreasonable." EPA reinforced this point when, later on in the preamble, they stated that "FGD... would cost

about two to three times as much as the gas turbine." The economic impact of applying FGD today would be no different.

Furthermore, the application of FGD would have negative environmental and energy impacts. Sludge would be generated that would have to be disposed of properly, and there would be increased utility (electricity and water) costs associated with the operation of a FGD system. Finally, there is no information in the literature to indicate that FGD has ever been applied to stationary gas turbines burning distillate oil.

The elimination of flue gas control as a BACT option then leaves the use of low sulfur fuel oil as the next option to be investigated. The use of No. 2 fuel oil with a maximum sulfur content limit of 0.05%, by weight, as proposed by the applicant, is acceptable as BACT for this project.

BACT Determination by the Department

Combined Cycle CTs

NO_x Control

The information that the applicant presented indicates that the cost per ton of controlling NO_x for these turbines is \$6,802, which is significantly higher when compared with other BACT determinations that require SCR. Operational experience of utilities elsewhere indicates that catalysts are lasting longer than expected. Therefore the Department believes the costs are somewhat lower. Based on the information presented by the applicant, the Department accepts the applicants conclusion that the use of SCR for NO_x control is not justifiable as BACT at this time.

A review of the permitting activities for combined cycle proposals across the nation indicates that SCR has been required and most recently proposed for installations with a variety of operating conditions (i.e., natural gas, fuel oil, coal and various capacity factors). The cost and other concerns expressed by the applicant are accepted and the Department determines that water injection and dry low-NO_x burner design as BACT for NO_x for this project for fuel oil and natural gas, respectively.

The applicant has proposed a NO_x emission limit of 104 lbs/hr/CT (15 ppmvd for natural gas) without power augmentation. CT manufacturers are currently offering NO_x guarantees of approximately 9 ppmvd. However, these CT manufacturers have no commercial operating experience to validate this guarantee basis. Considering the uncertainty regarding the basis of CT manufacturer's guarantees and the lack of commercial operating

experience at this lower emission level, the Department has determined that a NO_x emission limit of 15 ppmvd @ 15% O₂ (104 lbs/hr/CT) for continuous compliance [1-hour average, not corrected to ISO conditions], is required. Several prior CT projects have already been permitted at 15 ppmvd @ 15% O₂ (natural gas) and 42 ppmvd @ 15% O₂ (No. 2 fuel oil). In those prior BACT determinations, no a nitrogen or for power augmentation operation. Measured NO_x concentrations shall not be corrected to ISO conditions to determine compliance with these BACT standards. Based on the first 12 months of actual operating data using natural gas, the Department may seek to revise and lower the NO_x emissions standard from 15 ppmvd @ 15% O₂ to no lower than 9 ppmvd @ 15% O₂; again, the NO_x emissions standard will not be ISO corrected.

SO₂ Control

BACT for SO₂ is the burning of No. 2 fuel oil with a maximum sulfur content limit of 0.05%, by weight. The Department accepts the applicant's proposal as BACT for this project.

VOC and CO Control

The Department is in agreement with the applicant's proposal of good combustion and operating practices as BACT for CO and VOCs for this project.

Other Emissions Control

The emission limitations for PM/PM₁₀, Visible Emissions, Be, and As are based on previous BACT determinations for similar facilities. Although the emissions of these pollutants could be controlled by particulate matter control devices, such as a baghouse or scrubber, the amount of emission reductions would not warrant the added expense. The Department accepts the applicant's proposed strategy of requiring good quality fuel for controlling these pollutants as BACT for the two combined cycle CT units.

The BACT emission limits for the Hardee Unit 3 project of two CTs for generating 300 MW and a single 140 MW steam turbine are as follows:

440 MW TOTAL COMBINED CYCLE COMBUSTION TURBINES

Pollutant	Emission Standards/Limitations		Method of Control
	Oil(a)	Gas(b)	
NO _x	42 ppmvd @ 15% O ₂	15 ppmvd(c) @ 15% O ₂	Water Injection on oil; Dry Low-NO _x Combustor on gas

CO	25 ppmvd	20 ppmvd	Combustion controls; Limited Fuel Oil Operation
PM & PM ₁₀	67 lbs/hr	7 lbs/hr	Combustion controls; Limited Fuel Oil Operation
Visible Emissions	≤ 10% Opacity ≤ 10% Opacity		Natural Gas No. 2 Fuel Oil
SO ₂	0.05% S	1 gr S/100 scf	No. 2 Fuel Oil (max. 0.05% sulfur content limit, by weight)
VOC	10 ppmvd	5 ppmvd	Combustion controls
Be	--	--	Fuel Quality
As	--	--	Fuel Quality
Benzene	--	--	Fuel Quality

-
- (a) No. 2 fuel oil with a maximum limit of 0.05% sulfur content, by weight. Fuel oil firing shall not exceed an equivalent of 1,500 hours per year per CT at full load (not to exceed 3,000 hrs/yr between the two CTs).
- (b) Natural gas firing of up to 8,760 hours per year.
- (c) Interim limit. May be retained or lowered (as low as 9 ppmvd at 15% O₂) based on the results of a study of the first 12 months of commercial operation.

Details of the Analysis May be Obtained by Contacting:

Syed Arif, Permit Engineer
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended by:

Approved by:

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

Virginia B. Wetherell, Secretary
Dept. of Environmental Protection

Date 1995

Date 1995

Attachments 1 - 3
Available Upon Request

ATTACHMENT 4



OVERNIGHT

RECEIVED

FEB 10 1995

February 9, 1995

Bureau of
Air Regulation

Bruce Mitchell
Bureau of Air Regulation
Department of Environmental Protection
Magnolia Courtyard
111 So. Magnolia
Tallahassee, FL 32399

Re: Seminole Electric Coop. Inc.; Hardee Unit 3 -
Proposed BACT and Permit Conditions

Dear Bruce:

Seminole Electric Cooperative, Inc. (Seminole) appreciated the opportunity to meet with you and Syed Arif to discuss the Bureau's draft BACT analysis and proposed conditions of certification for Seminole's Hardee Unit 3 project. As we discussed in our meeting on January 31, 1995, the two principal issues associated with the permits for this project are the request for higher emission rates for nitrogen oxides (NO_x) and carbon monoxide (CO) during periods of steam augmentation and an increase in NO_x emissions based upon the fuel bound nitrogen content of the low sulfur fuel oil delivered to the project. As explained below, Seminole believes that these requests are justified and consistent with the objective of achieving the lowest emissions from this project, while considering economic and environmental issues.

The Hardee Unit 3 project is a 440 megawatt facility. It will be comprised of 2 150-megawatt Westinghouse 501F combustion turbines, with each CT connected to a single heat recovery steam generator (HRSG). The electrical output from this Seminole-owned facility will replace electricity Seminole currently purchases from other Florida utilities. The project will therefore supply existing demand for electricity by the members of Seminole's 11 electrical cooperatives in Florida. Unlike many recently permitted projects, the Hardee Unit 3 project is not being undertaken to meet future growth and demand. The demand exists today and will continue to exist at a level of 440 megawatts on the planned in-service date of January 1, 1999. The proposed project with the Westinghouse CTs has therefore been sized to best meet this 440 megawatt demand.

Steam Augmentation

As Westinghouse representatives explained in our meeting, during those times when the ambient temperature is above approximately 80°F, the electrical output of the combustion turbines during natural gas firing drops due to the decreased density of the air which is forced through the CT. High ambient temperatures cause the air to expand beyond the abilities of the CT's compressors and evaporative chillers to maintain a minimum air density passing through the CT to achieve the 440 megawatt output.

To compensate for the reduced power output during hot, humid days, high pressure steam must be injected into the combustor, mixing with the high pressure air from the CT compressor, to increase the mass flow through the CT. However, the moisture content of the injected steam affects the stability of the combustor pilot flame. To maintain flame stability, additional fuel is fed to the combustor pilot, resulting in an increase in NO_x emissions. The presence of moisture from the steam also causes carbon monoxide to increase to 50ppm levels.

With dry low NO_x combustors operating on natural gas fuel, the NO_x formed in the combustion process is minimized by designing the combustors to operate at very lean fuel to air ratios, an inherently less stable combustion point than occurs in conventional combustors. Thus, dry low NO_x combustors are less tolerant to the reduction in flame stability caused by steam injection. Power or steam augmentation is achieved differently than with conventional combustors by injecting the steam into the combustor casing rather than directly into the combustor. This form of injection disseminates the steam throughout the internal passages rather than focusing it on the flame, although much of the steam still enters the flame zone. Since the thermal NO_x levels are already so low in these DLN designs, there is not a significant further reduction in NO_x from the steam. In the Westinghouse DLN combustor, a central pilot is used in the design to add stability to the lean premix regions of the combustor. The central pilot operates similar to a conventional combustor and thus impacts the NO_x level of the combustor. As steam augmentation is brought on, the percentage of the total fuel that is injected through the central pilot is increased, thus increasing the NO_x levels from the CT from 15ppm to 25ppm.

While steam augmentation increases NO_x emissions, Seminole believes that this is the most acceptable alternative available to provide the needed 440 megawatts of output, considering both environmental and economic factors. Westinghouse and other CT manufacturers do not have CTs that are incrementally larger in output to provide the needed power during these meteorological conditions. Combustion turbines come in standard megawatt capacities or classes and CT manufacturers therefore are unable to exactly size a CT to a given utility's needs in many circumstances.

The other alternatives available to Seminole to meet its 440 megawatt need in these circumstances include installing a stand-alone 20 to 25 megawatt CT to provide the power during the identified meteorological conditions or to purchase power from another utility. As indicated in the analysis by Ken Kosky of KBN, a simple cycle 25 megawatt CT would cost approximately \$15.8 million, with an annualized incremental operating cost of \$1,993,320 for both capital and fuel costs. Assuming this standalone CT also achieved an emission rate of 15ppm, the cost effectiveness of removing the incremental 83.3 tons of NO_x by installing a small CT would be \$23,930 per ton of NO_x removed. This cost effectiveness value greatly exceeds the value the Department has previously established for NO_x removal.

The second alternative available to Seminole to provide the incremental 20 megawatts would involve contracting with another Florida utility to provide power during these periods. Since all other baseload units with relatively low NO_x rates would already be on line when ambient temperatures reach 80°F and greater, it is most likely that the incremental power Seminole needs would be generated from an existing power plant at a much greater NO_x emission rate. Seminole expects that it would cost Seminole \$2.8 million per year to contract with another utility (most likely TECO Energy) to provide this incremental power. With the Hardee Unit 3 operating with steam augmentation, total annual emissions are expected to be 212 tons per year. However, if Hardee Unit 3 is denied steam augmentation and replacement power must be purchased by Seminole from another existing plant, Seminole estimates that total NO_x from the Hardee Unit 3 and the other plant would be at least 226 tons per year. Thus, without steam augmentation, NO_x emissions would increase by 14 tons per year while costing Seminole at least \$2.8 million. Thus, Seminole would be forced to pay more money to meet its 440 megawatts of need, while increasing total NO_x emissions when compared to the steam augmentation scenario.

Thus, Seminole believes that the PSD permit and conditions of certification should authorize use of steam augmentation at emission rates of 25ppm for NO_x and 50ppm for CO during natural gas firing of the Hardee Unit 3 during those periods when ambient temperatures exceed 80°F, which is estimated to occur 2,000 hours per year.

Fuel Bound Nitrogen

Based upon the information provided by Westinghouse, Seminole continues in its request that it be granted up to an additional 12ppm for NO_x emissions based on the nitrogen content of the fuel oil delivered to the project. Westinghouse has optimized the new dry low NO_x combustors on the large F class CTs to produce the lowest NO_x levels attainable on natural gas, while still maintaining oil firing capability. In order to achieve low NO_x emissions during natural gas firing, the DLN design limits the options for water injection during oil firing and therefore, the ability to achieve lower NO_x levels. Westinghouse has therefore

based its guaranteed NO_x rate of 42ppm during oil firing upon a maximum fuel bound nitrogen content of 0.15% nitrogen.

DLN combustors can only control formation of thermal NO_x; fuel bound nitrogen (FBN) is not subject to combustion controls and is, therefore, "passed" through the machine. To meet the proposed 42ppm NO_x level for fuels with an FBN above 0.015% in fuel oil, the unit operator would be forced to over-control thermal NO_x by adding additional water injection during oil firing. While this may be achievable with conventional combustors or with single fuel (oil only) combustors on smaller CTs, Westinghouse does not believe that can be accomplished with the planned DLN combustor for this F class machine. The DLN is not expected to have any margin in the NO_x rate during oil firing that could be used to buffer the fuel bound nitrogen present in oil. Westinghouse is concerned that to attempt to inject additional water will create stress on the CT components and reduce unit efficiency by increasing the heat rate. Also, operating data during tests on CTs suggest that increasing water injection beyond a water to fuel ratio of 1.0 does not substantially reduce thermal NO_x formation but may significantly increase CO emissions well above proposed allowable levels.

Fuel bound nitrogen is solely a function of the oil refining and supply process. Seminole's investigation indicates that oil refiners are not refining or controlling for nitrogen content in fuel oil. While it appears that lower sulfur fuels (i.e., 0.05% sulfur oil) also have lower nitrogen contents as well, about 25% of the reported samples in one survey indicated that nitrogen content in low sulfur fuel oil still exceeded the threshold of 0.015% nitrogen. Thus, the oil refining industry does not currently continuously produce a low nitrogen/low sulfur fuel oil that would allow Seminole to meet the Department's proposed NO_x level of 42ppm.

Only one fuel oil supplier responded to Seminole's inquiry concerning a guaranteed price for fuel with a specified nitrogen content of no greater than 0.015% nitrogen. That single bidder would charge Seminole an additional 2.27¢ per gallon of fuel oil to supply low sulfur fuel with a nitrogen content of 0.015% or less. Based upon this price premium to Seminole, and assuming a maximum 0.03% nitrogen in the fuel (and an additional 12ppm of NO_x emissions for a total of 54ppm during oil firing) the cost effectiveness of payment of this premium to achieve the Department's proposed 42ppm emission rate would be a minimum of \$6,737 per ton of NO_x removed. For fuel oil with a lower FBN content, the cost effectiveness on a per ton removal basis, would be even greater. Therefore, Seminole believes that requiring use of a low nitrogen fuel, which is the effect of the Department's proposed permit limit, is not cost effective and is unnecessary since the average nitrogen content of fuel oil would likely be at or below 0.015% nitrogen in most cases.

Attached for your further reference are the overheads used by Westinghouse and KBN in their presentation at our recent meeting. These are provided to further support Seminole's request for a

differential NO_x emission rate during steam augmentation operation and for a fuel bound nitrogen allowance of up to 12ppm. While we hope that this information is useful to the Department in evaluating this request, if there is further information that you need, we are available to provide that information to you. Again, your attention to this request is appreciated.

Sincerely,



Kenneth L. Bachor
Manager, Environmental Licensing

KLB:jwl

Attachment

cc: w/o attachments

Syed Arif, BAR

Steve Palmer, Office of Siting Coordination

Richard Donelan, Office of General Counsel

1-31-95

Weekly Payroll Henderson #3 & Seminole Electric

Bruce Mitchell

FDER/DARM/DAR/TITLE II

904-444-1344

Ken Kosky

KBN

904-336-5600

Ken Daxon

SECI

813-963-0994

JOE WELBORN

SECI

813-963-0994

Tom O'Hanlon

Westinghouse

407-281-2564

Rick ANTOS

WESTINGHOUSE

407-281-3480

SYED ARIF

DEP

904-488-1344

Clare Holladay

FDER/DARM/DAR/NSR

904-488-1344

DOUG ROBERTS

HOPPING BOYD

904-222-7500

Memorandum

Florida Department of Environmental Protection

TO: Clair Fancy
Jim Pennington

FROM: Bruce Mitchell *RAM*

DATE: February 10, 1995

SUBJECT: Initiated Construction without Permit Authorization
Seminole Electric Cooperative Incorporated (SECI)
Hardee Unit 3: PSD-FL-214/PA89-25SA

Based on a direct question to the proposed facility's representative at a meeting held on January 31, 1995, and the application submitted, I feel that the applicant has begun construction without permit authorization. Specifically, I asked the following question during the meeting, "Have you already contracted with Westinghouse for this project"? Mr. Ken Bachor, representative of SECI at the meeting, said "Yes". Also, the application package only specifies the use of two Westinghouse Model 501F advanced combined cycle combustion turbines (CTs) and no alternatives. In addition, all of the consultant's and applicant's push that they have to have power augmentation is due to the vendor's inability to meet the NO_x BACT determination limitations/standards that we have proposed if in the power augmentation mode (note that these limitations/standards are exactly the same as those established for other like and kind CTs). Further, it also appears that the applicant has guaranteed someone (i.e., investors?) of a net 440 megawatts of continuous electricity to the grid, which can only be achieved through power augmentation during days of high temperatures and high humidity [there has been no proposal to use additional water injection and/or preconditioning of the inlet air (i.e., chilling) to keep the NO_x emissions low]. I explained to the attendees (list enclosed) that our Bureau Chief, Mr. Clair Fancy, had already instructed Mr. Peter Cunningham, in a previous meeting, to prepare an emergency order for the utility industry for the Secretary's signature to take care of such times that a power outage occurs and the need arises for increased power output. Mr. Doug Roberts, who was at the meeting representing SECI and was also in attendance at the meeting when Mr. Cunningham was instructed to prepare the order, is with Hopping Boyd Green & Sams, PA, as is Mr. Cunningham.

MEMO: Initiated Construction without Permit Authorization
Seminole Electric Cooperative Incorporated: Hardee Unit #3
PSD-FL-214/PA89-25SA
Page 2 of 2

It is important to note that the applicant has requested that these emission units be allowed to fire fuel oil for up to a total of 3,000 hours per year between the two CTs - this amount of time requested is not a short time issue and not typical of a back-up fuel (i.e., 400-500 hrs/yr).

BM/rbm

Enclosure

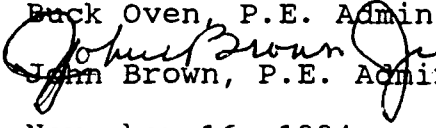
Meeting Sign-In Sheet

Date: 04-25-95

P.O. BOX 272000 • Tampa, FL 33688-2000
16313 N. Dale Mabry Highway • Tampa, FL 33618
813 / 963-0994

Memorandum

Florida Department of
Environmental Protection

TO: Buck Owen, P.E. Administrator
FROM:  John Brown, P.E. Administrator
DATE: November 16, 1994
SUBJECT: Seminole Electric Cooperative Incorporated (SECI)
Hardee Unit 3 - PA89-25SA, Mod 8035
PSD-FL-214

The Bureau of Air Regulation still finds the above referenced application package insufficient. Based on our review of the company's responses of October 1994, we have determined that Item No. 1 from our previously submitted sufficiency comments of September 21, 1994, has not been properly addressed. The sufficiency comment requested that the applicant provide test methods utilized in determining preliminary test data for the combustion turbine, and to indicate any deviations from EPA methods, if some other methods were used. If Westinghouse's internal test procedures were used, please describe those procedures, and their deviations from the EPA test methods.

The Bureau will determine sufficiency once the above response is received from the company. If there are any questions, please call Syed Arif at 488-1344.

Revised Pages for Replacement into Hardee Unit 3
Site Certification Application/Environmental Analysis

Site Certification Application/Environmental Analysis	
Volume I	
	Page 2.3.6-31
	Page 3.8.2-2
	Page 4.2.1-2
	Page 4.2.1-4
	Page 4.2.1-5
Volume II	
Appendix 10.1.4	Page 10.1.4-4
	Page 10.1.4-15
	Page 10.1.4-17
	Page 10.1.4-19
	Page 10.1.4-23
	Page 10.1.4-24
	Page 10.1.4-25
	Page 10.1.4-27
	Pages 10.1.4-33 through 10.1.4-46

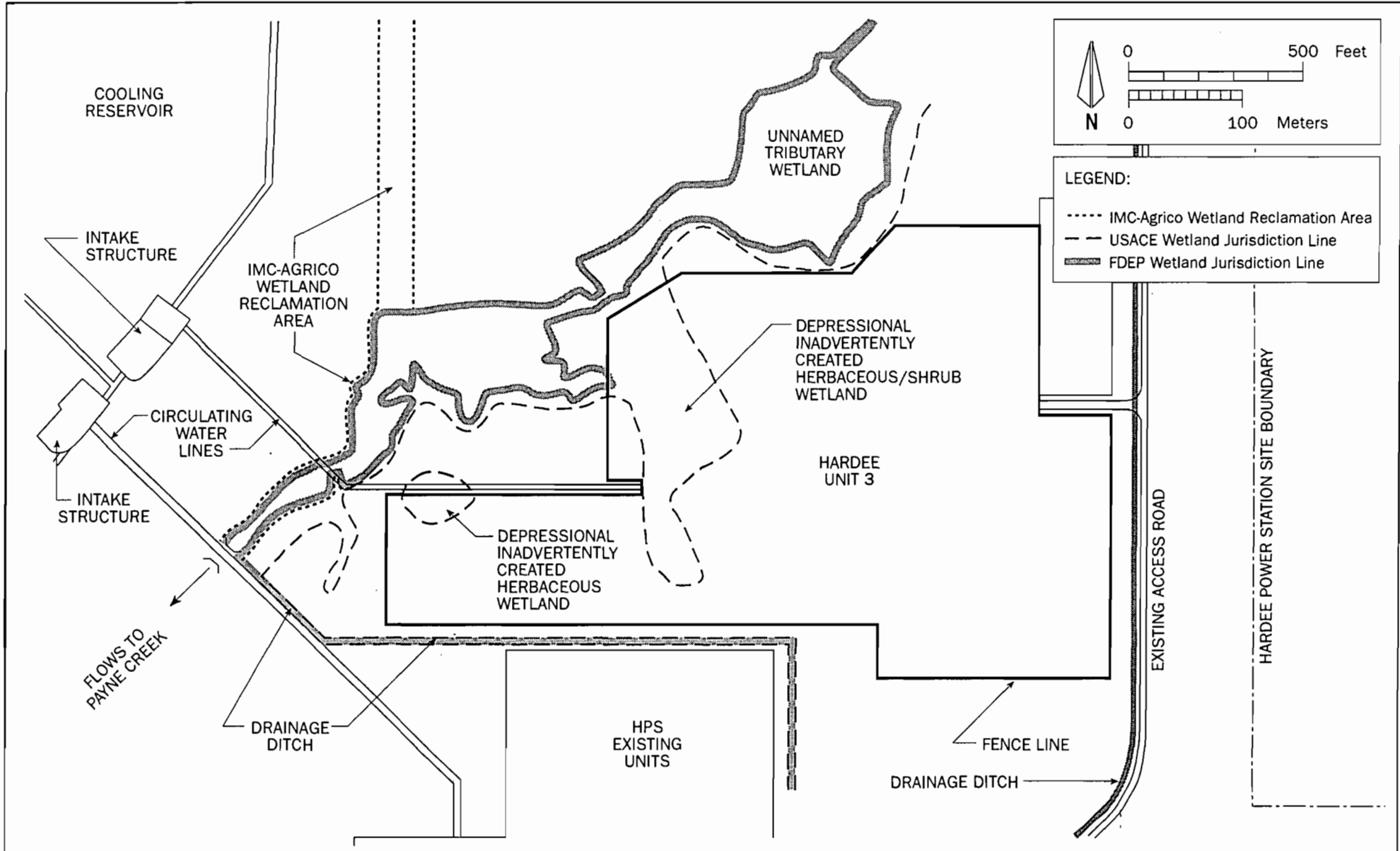


Figure 2.3.6-3
Location of Jurisdictional Wetlands

Source: KBN, 1994.

Runoff from areas of the site not disturbed by construction activities or plant operations will be directed to the natural drainage systems within the area. Runoff from areas of the site disturbed by construction activities will be collected in the stormwater drainage system and routed to the stormwater detention pond. A sedimentation and erosion control plan for Hardee Unit 3 is included in Appendix 10.9.

As necessary, sediment collected during the construction phase will be removed to ensure adequate pond volume and disposed of onsite.

include clearing 0.02 ha (0.06 acre) of wetland, permanently filling 0.006 ha (0.015 acre) of wetland within the 0.024 ha (0.06 acre) clearing for pipe support structures, and temporarily filling 0.002 ha (0.006 acre) of wetland within the 0.024 ha (0.06 acre) clearing to construct two temporary pads for equipment work area (Table 4.2.1-1).

Clearing 0.024 ha (0.06 acre) of reclaimed wetland will consist of removing 41 planted trees. These trees are approximately 0.9 to 1.5 m (3 to 5 ft) tall and were planted 2 years ago by IMC/Agrico. Additionally, a few large oak trees and one black gum located along the upland/wetland boundary will also be removed for constructing the circulating water pipes. The only fill to remain in the reclaimed wetland upon construction of the circulating water pipes will be two concrete support structures each 0.9 m by 5.5 m (3 ft by 18 ft) in size. After the circulating water pipes are constructed, the original 0.024 ha (0.06 acre) cleared area will be returned to original grade, planted with native herbaceous species, and maintained as a herbaceous wetland.

Wetland impacts associated with a highly disturbed portion of the unnamed tributary wetland will occur southwest of the proposed construction laydown area (Area No. 2 in Figure 4.2.1-1). A total of only 0.012 ha (0.03 acre) will be filled and 0.004 ha (0.01 acre) will be excavated to construct a retention berm. This proposed impact area is herbaceous in nature and has been extensively disturbed by feral hog activity.

An access road is proposed to be constructed in the southwest corner of the site and will cross an existing FDEP and USACE jurisdictional drainage ditch wetland (Area No. 5 in Figure 4.2.1-1). Two culverts will be placed in the drainage ditch to ensure passage of the 25-year storm peak. A second drainage ditch which forms the eastern boundary of the project site will be crossed by two culverts (Areas Nos. 6 and 7 in Figure 4.2.1-1). These crossings will provide access to the power plant from the existing access road. A total of 0.008 ha (0.02 acre) will be excavated and 0.117 ha (0.29 acre) will be filled to install these two culverts. These roadside drainage ditches will continue to be mowed and maintained. Therefore, ecological impacts to these ditches will be minor.

Table 4.2.1-1. Summary of Wetland Impacts for Each Jurisdictional Agency

Regulatory Jurisdiction	Permanent Clearing	Permanent Filling	Temporary Filling	Excavation
SWFWMD	0.06 acre across tributary wetland	0.015 acre for pipe support structures in tributary wetland 0.07 acre for culverts across west drainage ditch	0.006 acre for temporary pads in the tributary wetland	0.015 acre for installation of support structure 0.015 acre for culverts across west drainage ditch
FDEP	0.06 acre across tributary wetland	0.015 acre for pipe support structures in tributary wetland 0.03 acre for retainment berm 0.014 acre for culverts across west drainage ditch 0.28 acre for culverts across east drainage ditch	0.006 acre for temporary pads in the tributary wetland	0.015 acre for installation of support structure 0.01 acre for retainment berm 0.015 acre for culverts across west drainage ditch 0.010 acre for culverts across east drainage ditch
USACE	0.22 acre across tributary wetland	0.085 acre for pipe support structures in tributary wetland 4.69 acre in power block area 0.01 acre for retainment berm 0.17 acre for stormwater detention basin 0.07 acre for culverts across drainage ditch	0.006 acre for temporary pads in the tributary wetland	0.30 acre in stormwater detention basin 0.85 acre for installation of support structures 0.003 acre for retainment berm 0.01 acre for culverts across drainage ditch

Note: acres x 0.4047 = hectares.

Source: KBN, 1994.

4.2.1-5

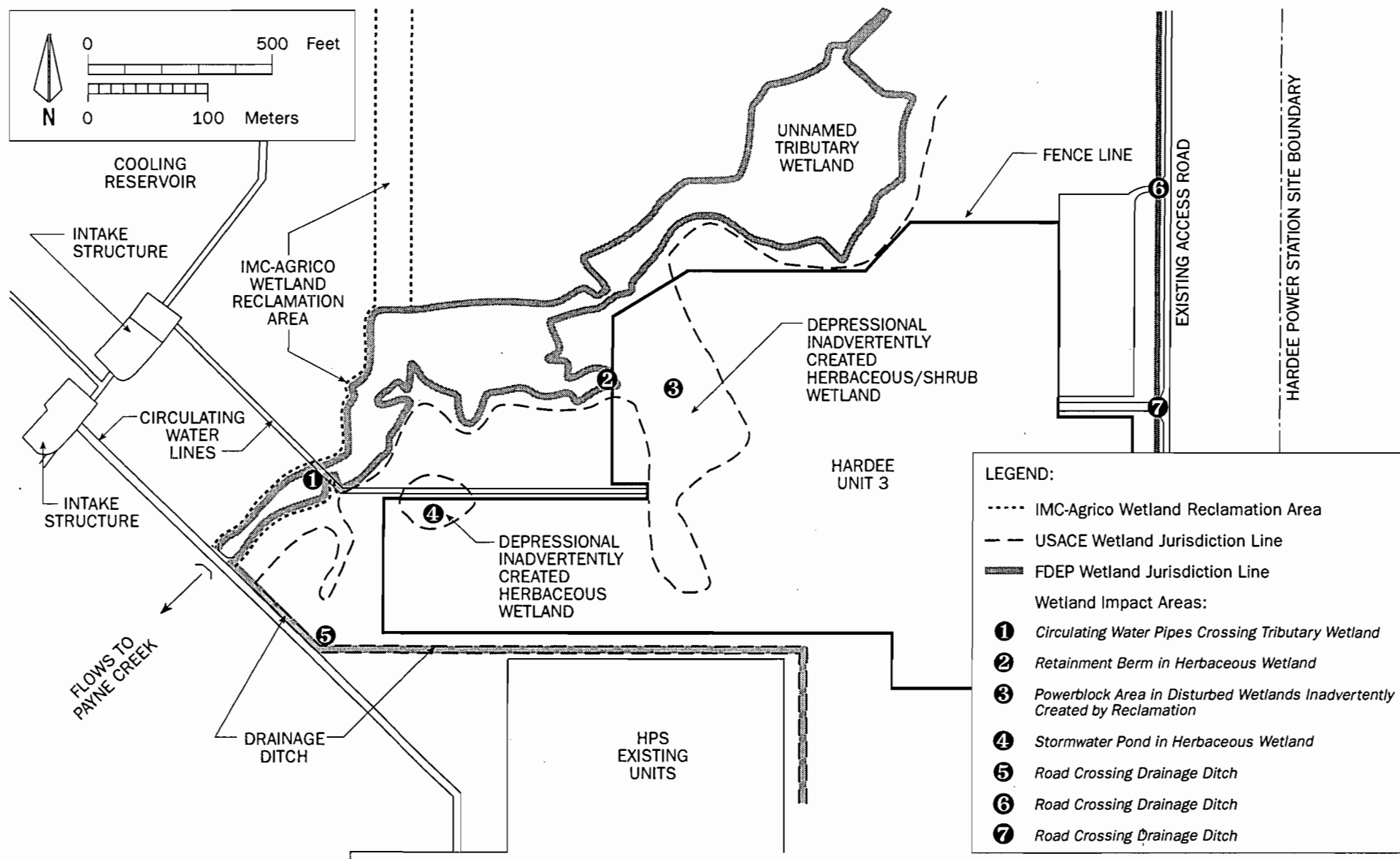


Figure 4.2.1-1
Location of Jurisdictional Wetlands in Relation to Hardee Unit 3 Site Plan

Source: KBN, 1994.





Florida Department of Environmental Regulation

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

Joint Application for Works in the Waters of Florida

DER Form # 17-312-900(1)

Form Title Joint Ap. for Works in the Waters of Florida

Effective Date October 30, 1991

DER Application No. _____

Department of the Army (Corps)/Florida Department of Environmental Regulation (DER)/
Department of Natural Resources (DNR)/Delegated Water Management District (Delegated WMD)

Corps Application Number (official use only)	DER Application Number (official use only)						
1. Applicant's Name and Address Name <u>Seminole Electric Cooperative Incorporated</u> Last Name, First name (if individual): Corporate Name; Name of Govt. Agency Street <u>P.O. Box 27200</u> City <u>Tampa</u> State <u>Florida</u> Zip <u>33688-2000</u> Telephone (<u>813</u>) <u>963-0994</u> (Day) (<u>813</u>) <u>963-0994</u> (Night)							
2. Name, Address, Zip Code, Telephone Number and Title of Applicant's Authorized Agent Name <u>Opalinski, Mike</u> Last Name, First Name Corporate Name; Name of Govt. Agency <u>Seminole Electric Cooperative Incorporated</u> Street <u>P.O. Box 27200</u> City <u>Tampa</u> State <u>Florida</u> Zip <u>33688-2000</u> Telephone (<u>813</u>) <u>963-0994</u> (Day) (<u>813</u>) <u>963-0994</u> (Night)							
3. Name of Waterway at Work Site: <u>Unnamed tributary wetland that flows to Payne Creek, Hardee County.</u>							
4. Street, Road or Other Location of Work <u>County Road 663 3.5 miles North of State Road 62</u> Incorporated City or Town <u>Hardee County</u> Section <u>1</u> Township <u>33S</u> Range <u>23E</u> Section _____ Township _____ Range _____ Section _____ Township _____ Range _____ County(ies) <u>Polk and Hardee</u> Coordinates in Center of Project: _____ Federal Projects Only: _____ x _____ y Latitude <u>27</u> ° <u>38</u> ' <u>43</u> " Longitude <u>81</u> ° <u>58</u> ' <u>10</u> " Lot _____ Block _____ Subd _____ Plat Bk _____ Pg _____ Directions to Locate Site: <u>Approximately 5 miles south of CR 630 on Fort Green Road. Turn west off of Fort Green Road at the entrance to the existing HPS facilities. Site is located on the north side of the existing facility (Figure 2).</u>							
5. Names, Addresses, and Zip Codes of Adjacent Property Owners Whose Property Also Adjoins the Water (Excluding Applicant). Show Numbers or Names of These Owners on Plan Views. If More Than Six (6) Owners Adjoin the Project, You May Be Required to Publish a Public Notice for the DER. <table style="width:100%"><tr><td style="width:33%">1. <u>IMC-Agrico</u> <u>P.O. Box 2000</u> <u>Mulberry, FL 33860-1100</u></td><td style="width:33%">2. <u>CF Industries</u> <u>P.O. Box 1549</u> <u>Wauchula, FL 33873</u></td><td style="width:33%">3. _____ _____ _____</td></tr><tr><td>4. _____ _____ _____</td><td>5. _____ _____ _____</td><td>6. _____ _____ _____</td></tr></table>		1. <u>IMC-Agrico</u> <u>P.O. Box 2000</u> <u>Mulberry, FL 33860-1100</u>	2. <u>CF Industries</u> <u>P.O. Box 1549</u> <u>Wauchula, FL 33873</u>	3. _____ _____ _____	4. _____ _____ _____	5. _____ _____ _____	6. _____ _____ _____
1. <u>IMC-Agrico</u> <u>P.O. Box 2000</u> <u>Mulberry, FL 33860-1100</u>	2. <u>CF Industries</u> <u>P.O. Box 1549</u> <u>Wauchula, FL 33873</u>	3. _____ _____ _____					
4. _____ _____ _____	5. _____ _____ _____	6. _____ _____ _____					

Northwest District
160 Governmental Center
Pensacola, Florida 32501-6794
904-436-8300

Northeast District
Suite B200, 7826 Baymeadows
Way
Jacksonville, Florida 32266-7677
904-448-4300

Central District
3319 Maguire Blvd., Suite 232
Orlando, Florida 32803-3767
407-894-7665

Southwest District
4620 Oak Fair Blvd.
Tampa, Florida 33610-
7347
813-623-6661

South District
2269 Bay St.
Fort Myers, Florida 33901-2896
813-332-6976

Southeast District
1900 S. Congress Ave., Suite A
West Palm Beach, Florida
33406
407-433-2650

DER Form # 17-312-900(1)

Form Title Joint Ap. for Works in the Waters of Florida

Effective Date October 30, 1991

DER Application No. _____

6. Proposed Use (Check one or more as applicable) Private Single Family ☐ Multi Family ☐
 Public ☐ Commercial ☐ New Work ☒ Alteration of Existing Works ☐ Maintenance ☐ Other(Explain) Industrial

7. Desired Permit Duration (see Fee Schedule) Energy Facility
 5 Yr ☒ 10 Yr ☐ Other (Specify) _____

8. General Permit or Exemption Requested
 DER General Permit FAC Rule 17-312. _____ DER Exemption FAC Rule 17-312. _____ Section 403. _____ F.S.

9. Total Extent of Work in Jurisdictional Open Waters or Wetlands: (Use additional sheets and provide complete breakdown of each category if more space is needed). See Table 1 for breakdown of wetland impact.

a. Within Corps Jurisdiction:

Fill:	<u>218,840</u>	Sq. Ft.	<u>5.03</u>	Acres	<u>31,505</u>	Cu. Yds.
Excavation:	<u>17,340</u>	Sq. Ft.	<u>0.40</u>	Acres	<u>1,264</u>	Cu. Yds.

b. Within DER Jurisdiction:

Fill:	<u>3,411</u>	Sq. Ft.	<u>0.09</u>	Acres	<u>295</u>	Cu. Yds.
Excavation:	<u>1,950</u>	Sq. Ft.	<u>0.045</u>	Acres	<u>99</u>	Cu. Yds.
Excavation Waterward of MHW <u>1,950</u> cu. yds. (Information needed for DNR)						

c. DER Jurisdictional Area Severed (Area Landward of Fill Structures which will be Severed):

<u>0</u>	Sq. Ft.	<u>0</u>	Acres

d. DER Jurisdictional Area Created (New Excavation from Uplands, Exclusive of Mitigation):

<u>0</u>	Sq. Ft.	<u>0</u>	Acres

e. Docks, Piers, and Over Water Structures: N/A

Total Number of Slips _____		Total Number of Mooring Pilings _____	
Length _____	Width _____	Height above MHW _____	
Length _____	Width _____	Height above MHW _____	
Number of Finger Piers _____	Length _____	Width _____	Height _____
Number of Finger Piers _____	Length _____	Width _____	Height _____
Total area of structure over waters & wetlands _____ sq. ft.			
Use of structure _____			

Will the docking facility provide:	No	Yes	Number
Liveaboard Slips	☐	☐	_____
Fueling Facilities	☐	☐	_____
Sewage Pump-out Facilities	☐	☐	_____
Other Supplies or Services Required for Boating (Excluding refreshments, bait and tackle)	☐	☐	_____

f. Seawall length N/A ft. Seawall material _____

Riprap revetment length _____ ft.	Slope _____ H: _____ V	Toe width _____ ft.
Riprap at toe of seawall length _____ ft.	Slope _____ H: _____ V	Toe width _____ ft.
Size of riprap _____		
Type of riprap or seawall material _____		

g. Other (See Item 10). N/A

The wastewater piping will be constructed of 10-inch-diameter fiberglass reinforced pipe (FRP), "Bondstrand 2000" or equivalent. This material was specifically selected to eliminate the possibility of corrosion and is the same material used for the wastewater piping for the HPS existing units. The wastewater piping for the Hardee Unit 3 facility will be installed aboveground and will be provided with expansion joints at required intervals to account for thermal expansion. The aboveground placement of the wastewater pipes will allow visual inspection on a regular basis.

The selection of the noncorrosive FRP construction material for the wastewater piping, combined with the use of expansion joints and the ability for visual inspection of the pipe, effectively eliminates the potential for a significant impact to the onsite wetland crossing. All wastewater will be treated prior to being routed to the cooling reservoir. In the unlikely event a leak is detected in one of the circulating pipes or the low-volume wastewater pipe, appropriate measures will be taken to stop the leak and prevent damage to the tributary and its associated wetlands.

After the pipes are constructed, the cleared wetland area will be returned to original grade, planted, and maintained as a herbaceous wetland (more detail on restoration can be found in the attached wetland mitigation plan). Upon construction of the pipes, the only fill to remain in the reclaimed wetland will be concrete support structures, each 18 ft by 3 ft in size.

3.2 RETAINMENT BERM

A retainment berm will be constructed along the south side of the unnamed tributary wetland to prevent runoff from the power plant to the wetland. Most of the retainment berm will be outside FDEP-jurisdictional wetlands; however, a small portion of the berm will impact 0.04 acre of a highly disturbed portion of the unnamed tributary wetland (Area No. 2 in Figure 4). This proposed impact area is herbaceous in nature and has been extensively disturbed by feral hog activity.

The retainment berm will measure 2 ft high by 5 ft wide and contain 3:1 sideslopes (Figures 7 and 8). A total of 25 cubic yards to fill will be placed in jurisdictional wetlands for construction of the retainment berm. A small ditch, 1 ft deep by 4 ft wide with a 3:1 sideslope, will be constructed next to the retainment berm. This ditch will impact only 0.01 acre of wetland and require 18 cubic yards of excavation.

3.3 POWER BLOCK AREA

Construction of the power block area will impact 4.69 acres of USACE-jurisdictional wetlands (Area No. 3 in Figure 4). The wetlands to be impacted are low-lying areas that were to have been reclaimed to upland pasture, but were unintentionally graded as low pockets during reclamation. The soil in the reclaimed area contains a high clay content as a result of overburden material from the mining process. Thus, water retention is high and has resulted in colonization of weedy species such as cat-tail, primrose-willow, and Carolina willow. Impacting these wetlands is not expected to result in a loss of significant wildlife habitat.

The average existing grade elevation is 124.0 ft and the proposed elevation of the power block area is 128.0 ft. Therefore, the average fill height in the power block area is 4 ft. The total fill for the power block area is 30,300 cubic yards in USACE-jurisdictional wetlands (Figure 7).

3.4 DETENTION BASIN

A stormwater detention basin will be constructed on the west side of the proposed site. A portion of a small isolated wetland (0.47 acre of the 0.55-acre wetland) will be impacted (Area No. 4 in Figure 4). This wetland is USACE-jurisdictional, and, like the 4.69-acre wetland described above, this wetland was unintentionally created during the reclamation process. It is colonized by weedy wetland species.

The existing grade elevation in the area of the stormwater basin is approximately 120.5 ft. Fill in this area is required for the detention basin containment berm. A 180 ft long section of the berm cuts through the USACE wetland limits and will impact 0.17 acre of the wetland (Figures 9 and 10). The containment berm has a top elevation of 125.0 ft. The top of the berm is 10 ft wide with 4:1 sideslopes on the inside of the basin and 3:1 sideslopes on the outside. The total fill in this USACE-jurisdictional wetland is 780 cubic yards.

The excavation in this area is for detention basin capacity requirements. The average elevation inside the detention basin, within the wetland limits, is 118.5 ft. The area of the wetland located inside the actual detention basin is 0.30 acre. Therefore, the total excavation in this area will be 970 cubic yards.

The stormwater detention basin will serve as a wet detention pond in accordance with the requirement of SWFWMD. The basin will retain the first 1 inch of runoff from the plant site and will release it through a bleed down pipe. A sedimentation area is provided where the runoff enters the basin. The runoff will flow through a littoral zone for biological treatment and removal of pollutants before being discharged. Runoff from the basin will be discharged to the unnamed tributary wetland. An energy dissipation system will be designed and constructed in the uplands to minimize the possibility of erosion in the unnamed tributary wetland.

3.5 DITCH CROSSINGS

Two drainage ditches are proposed to be crossed. An access road is proposed to be constructed in the southwest corner of the site and will cross an existing FDEP and USACE jurisdictional drainage ditch (Area No. 5 in Figure 4). This drainage ditch is a roadside ditch that is frequently mowed and maintained. The road is necessary to assure access from the plant facilities to the cooling reservoir.

Two 24-inch culverts will be placed in the drainage ditch and will ensure passage of the 25-year storm peak (Figures 9 and 11). The access road will be an aggregate surfaced road. It will be 18 ft wide with 3 ft wide shoulders. The elevation of the road at the ditch is 119.0 ft. The invert of the two 24-inch diameter culverts is 115.75 ft. Therefore, the total fill in the FDEP jurisdictional area is 111 cubic yards. The only excavation required is under the culverts for pipe bedding. The total excavation is 15 cubic yards.

A second drainage ditch, which forms the east boundary of the project site, will be crossed by two entrance roads (Areas No. 6 and 7 in Figure 4). These crossings are necessary to provide access to the power plant from the existing entrance road. Two culverts will be placed in the drainage ditch (C-12 and C-13; Figure 12 and 13). To install both culverts will require excavating 0.01 acre of FDEP-jurisdictional wetland and filling 0.028 acre of wetland. The roads will be constructed in a manner similar to that described above for the first drainage ditch crossing.

3.6 SEDIMENTATION PLAN

Temporary measures will be used during construction to control erosion and sediment transfer from the site. Silt fences will be used to filter sediments washed from grading areas where the

ground slopes away from the site. Areas disturbed during grading operations will be seeded to establish a vegetative cover to reduce erosion on the site. A more detailed description of sedimentation measures is provided in the Erosion and Sedimentation Control Plan in Appendix 10.10 of the Site Certification Application.

3.7 DEWATERING PLAN

Groundwater dewatering will be used primarily for excavation, installation, and backfill of underground utilities. Dewatering effects will be shallow and will not impact existing facilities or wetlands. A silt screen will be used to minimize the transport of suspended solids in the dewatering flow. Discharge from dewatering operations will be directed to the runoff detention basin where the filtration system will provide suspended solid sedimentation and removal.

Table 1. Summary of Wetland Impacts

Wetland Impact		Permanent Clearing		Permanent Filling		Temporary Filling		Excavation	
		FDEP	USACE	FDEP	USACE	FDEP	USACE	FDEP	USACE
Circulating Water Line	sf	2,600	9,400	650	3,720	255	255	650	3,720
	acre	0.06	0.22	0.015	0.085	0.006	0.006	0.015	0.085
	cyd	—	—	48	275	4.7	4.7	48	275
Retainment Berm	sf			1,500	450			450	150
	acre			0.03	0.01			0.01	0.003
	cyd			25	25			18	4
Power Block Area	sf				204,200				
	acre				4.69				
	cyd				30,300				
Stormwater Detention Basin	sf				7,470				13,070
	acre				0.17				0.30
	cyd				780				970
Road Across Drainage Ditch (C14)	sf			600	3,000			400	400
	acre			0.014	0.07			0.01	0.01
	cyd			111	125			15	15
Road Across Drainage Ditch (C12 and C13)	sf			1,200				450	
	acre			0.28				0.01	
	cyd			111				18	
Total	sf	2,600	9,400	3,411	218,840	255	255	1,950	17,340
	acre	0.06	0.22	0.09	5.03	0.006	0.006	0.045	0.40
	cyd			295	31,505	4.7	4.7	99	1,264

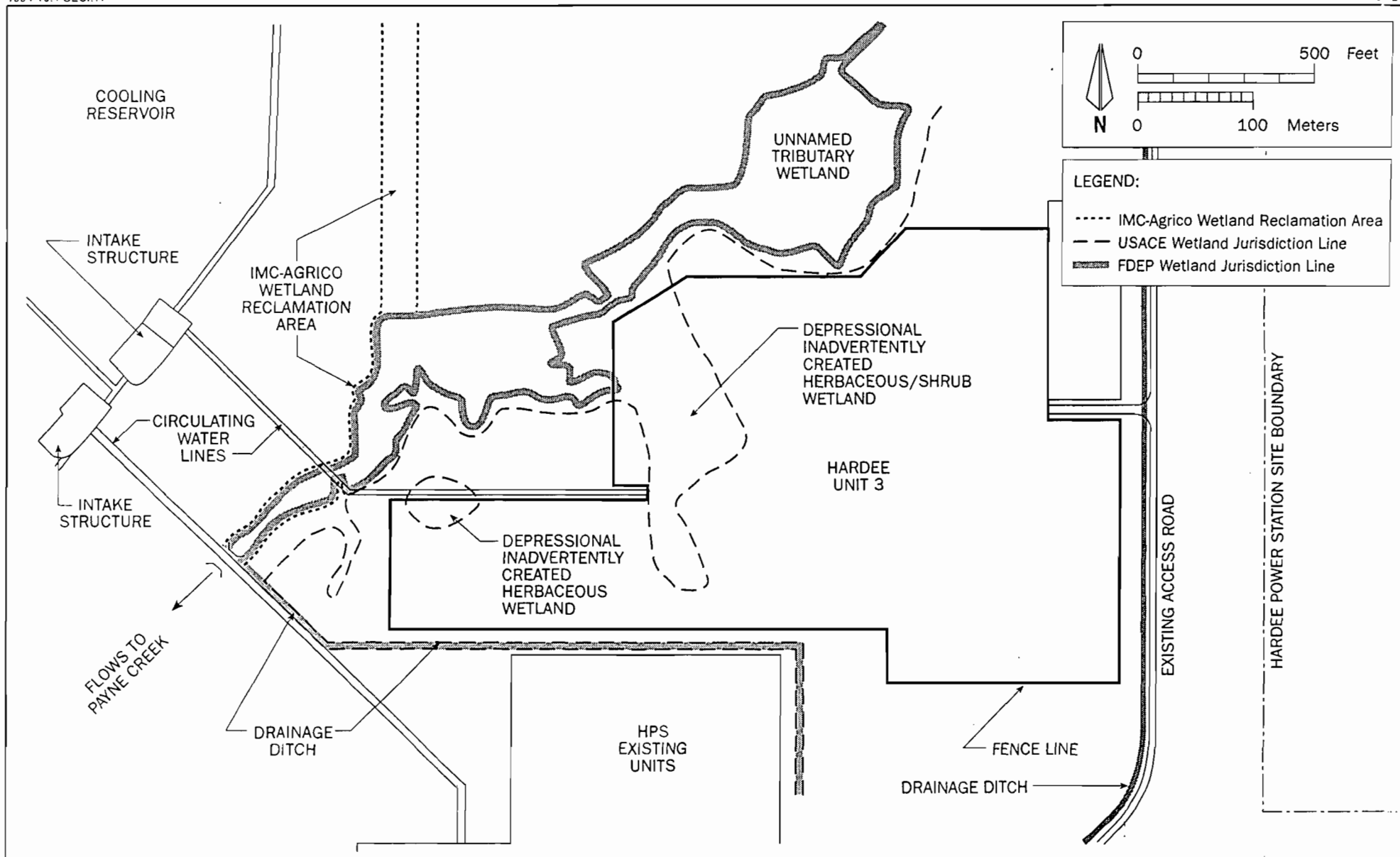


Figure 3
Location of Jurisdictional Wetlands

Source: KBN, 1994.

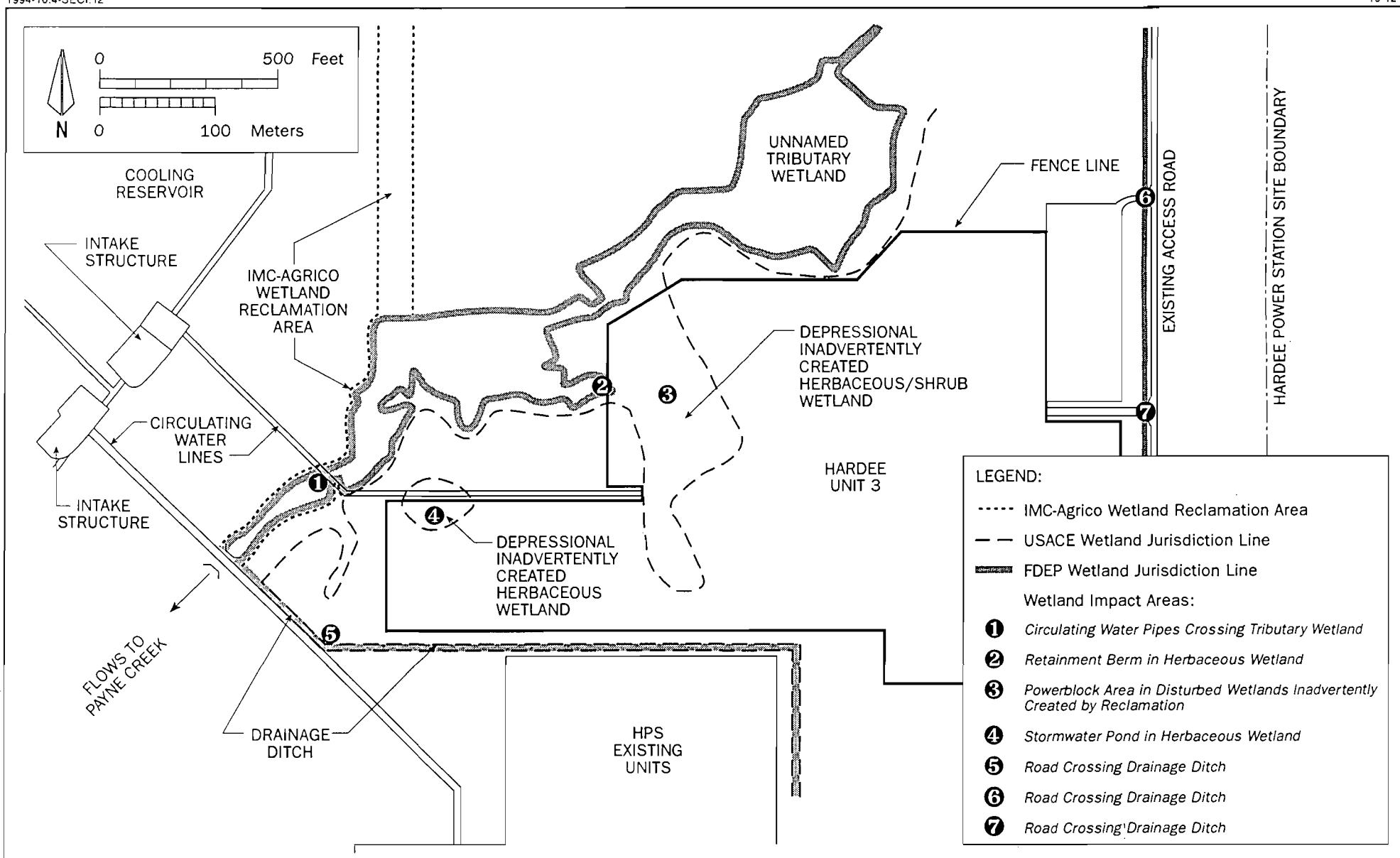


Figure 4
Location of Jurisdictional Wetlands in Relation to Hardee Unit 3 Site Plan

Source: KBN

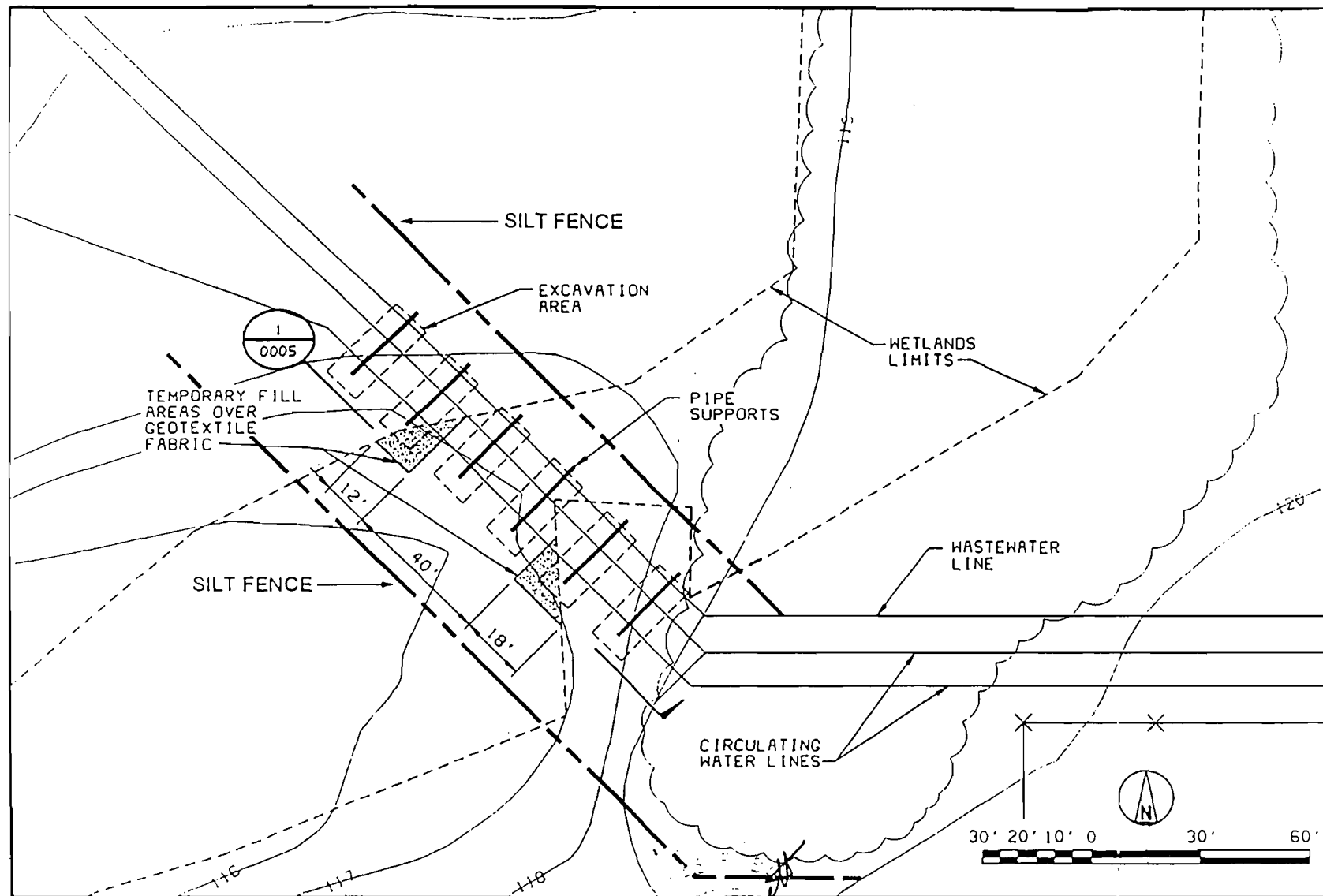


Figure 5
Plan View of the Circulating Water Pipes Crossing the Wetland
(Revised 10/12/94)

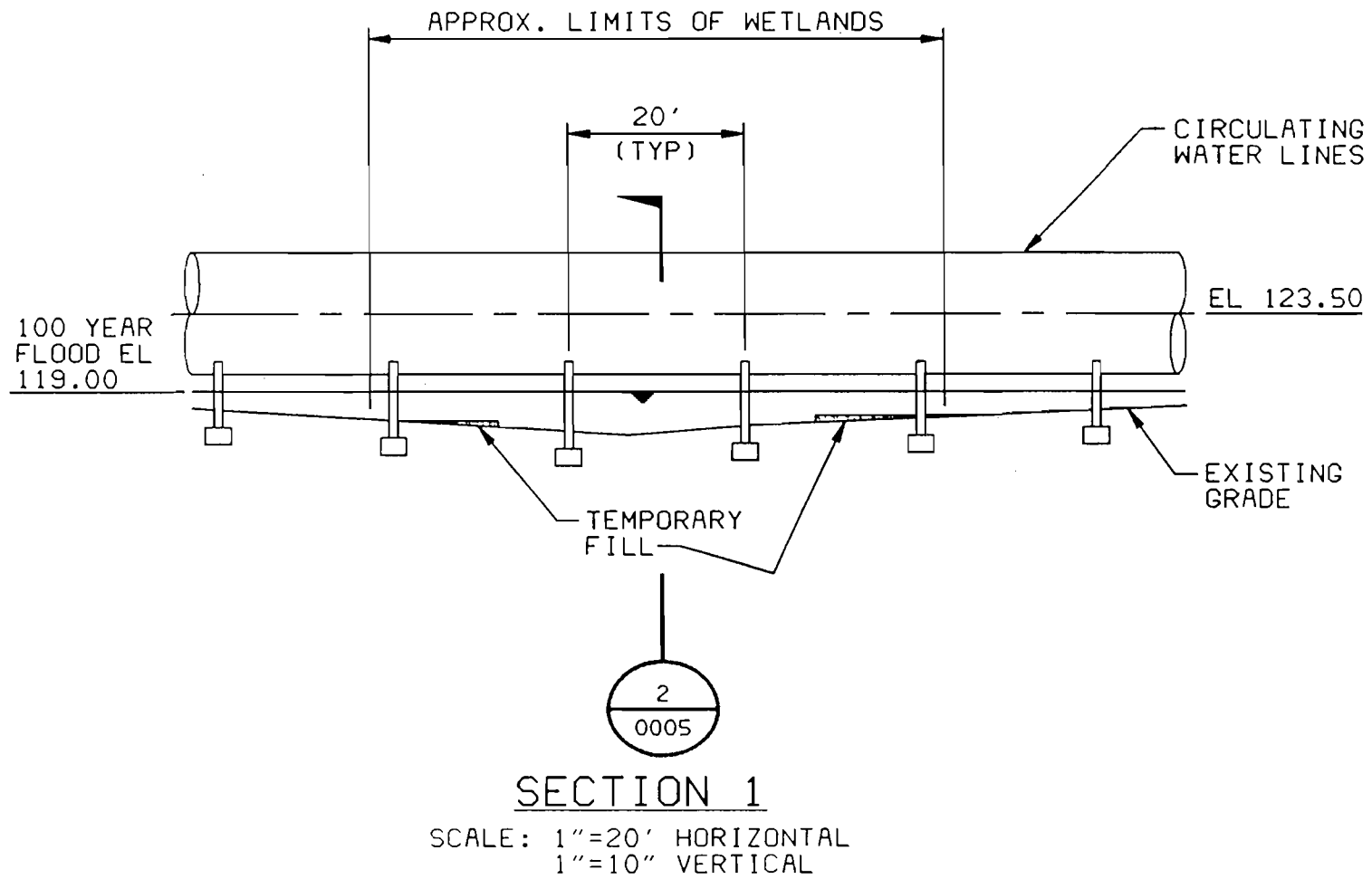
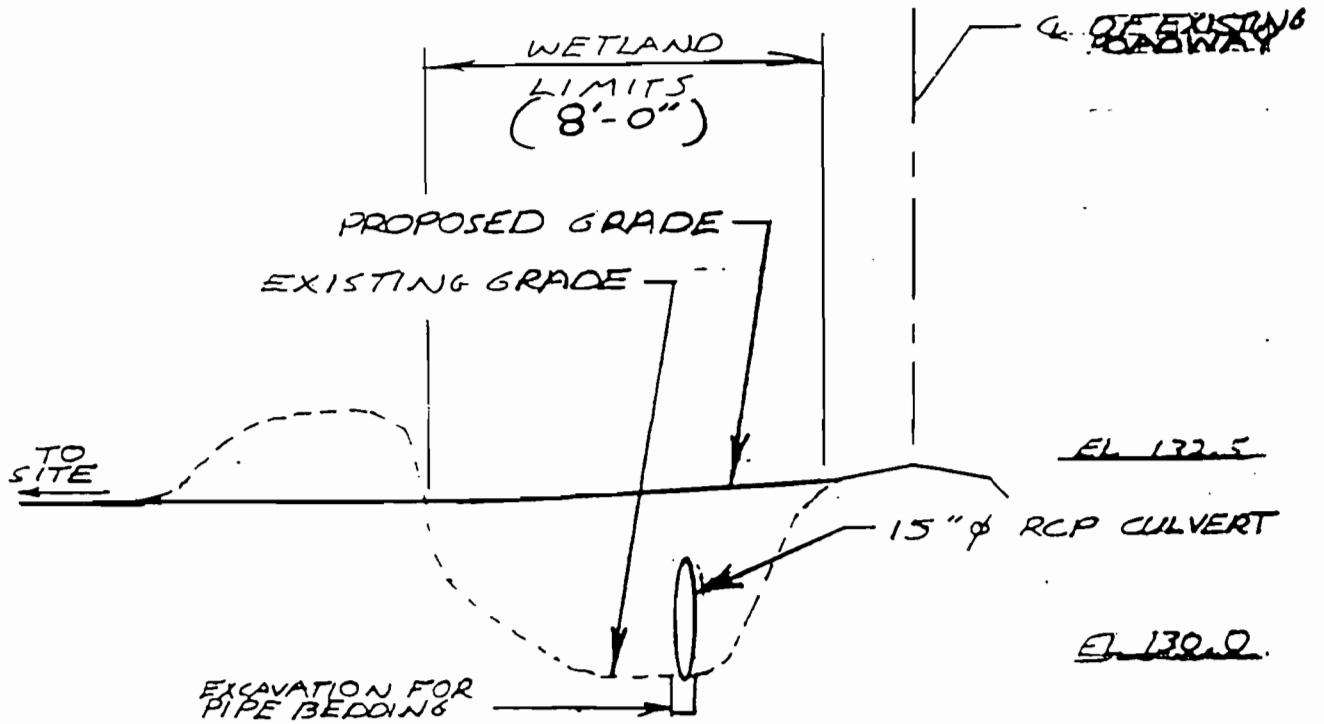


Figure 6
Cross-Section of the Circulating Water Pipes Crossing the Wetland



CULVERT LENGTH = 75 LF

PROFILE
CULVERTS C-12 & C-13

Figure 13
Cross-Section of the Drainage Ditch Crossing at
Culverts C-12 and C-13
(Revised 10/12/94)

Theresa B. Barnett



**SEMINOLE
ELECTRIC
COOPERATIVE
INCORPORATED**

WETLAND MITIGATION PLAN

1.0 INTRODUCTION

Seminole Electric Cooperative Incorporated (SECI) plans to build a 440-MW (net capacity) combined cycle unit on a 1,300-acre site in Hardee and Polk counties (Figure 1). The plant will be built adjacent to the existing Hardee Power Plant (Figure 2). The project site is located in an area that was recently mined and disturbed. The mined areas have been reclaimed predominately to upland pasture by Agrico Chemical Company under the provisions of their phosphate mine reclamation plan.

Wetland impacts are limited to five construction activities. Wetland impact acreages for both the Florida Department of Environmental Protection (FDEP) and U.S. Army Corps of Engineers (USACE) are summarized on Table 1. SECI has designed the Hardee Unit 3 facility to avoid and minimize wetland impacts to the greatest extent possible.

2.0 WETLAND IMPACTS

The circulating water pipes will be constructed across IMC-Agrico's wetland reclamation area (Area No. 1 in Figure 3), and will clear a total of 0.06 acre of FDEP-jurisdictional wetlands and 0.22 acre of USACE-jurisdictional wetlands. Within the cleared area, excavation will occur to install concrete pipe support structures. The only remaining fill in the wetland will be the actual structures, which will be embedded approximately 2 feet (ft) below ground surface. The circulating water pipes will be supported above the 100-year flood elevation and, therefore, will not obstruct or hinder the hydrologic flow of the wetland.

In its current state, the proposed wetland impact area is primarily herbaceous, but has been recently planted with wetland trees as part of Agrico's wetland reclamation program for the Payne Creek Mine. To construct the circulating water pipes across the reclaimed wetland will require permanently removing 41 planted trees and 1 mature blackgum tree. After construction of the circulation pipes, the cleared wetland area will be returned to original grade (except for the remaining concrete pipe support structures), planted with native herbaceous wetland species, and maintained as a herbaceous wetland (see section 3.2 for restoration plan).

As compensation for the wetland impact associated with constructing the circulating water pipes, SECI proposes to create 0.22 acre of forested wetland on the north side of the tributary wetland (Figure 4). This compensation will provide a 3.7:1 ratio for impacting 0.06 acre of FDEP-jurisdictional wetland, and a 1:1 ratio for impacting 0.22 acre of USACE-jurisdictional wetland.

Construction of a retainment berm will fill 0.03 acre and excavate 0.01 acre of FDEP- and USACE-jurisdictional wetlands (Area No. 2 in Figure 3). The wetland impact site is a herbaceous portion of the unnamed tributary wetland that has been extensively disturbed by feral hog activity. Vegetation at the impact site is sparse due to considerable ground disturbance. SECI proposes to compensate for this wetland impact by creating an additional 0.04 acre of forested wetland on the north side of the tributary wetland, for a total of 0.26 acre of created forested wetland (Figure 4). A mitigation ratio of 1:1 for this impact is warranted due to the extensive disturbance at the impact site, and because forested wetland will be created to compensate for disturbance of a herbaceous wetland.

Two culverts and associated fill will be placed in a FDEP and USACE-jurisdictional drainage ditch wetland to facilitate road access to the cooling reservoir (Area No. 5 in Figure 3). This road and associated wetland crossing is necessary to assure access to the cooling reservoir. A total of 0.014 of drainage ditch wetland will be filled. The drainage ditch receives drainage from the proposed Hardee Unit 3 Project area and adjacent existing power facilities, and conveys water to Payne Creek via the unnamed tributary wetland. In its current state, the drainage ditch is regularly mowed and maintained. Mitigation is not proposed for this wetland impact because the wetland impact is minor and will not disrupt the conveyance capacity of the drainage ditch, and because the ecological value of the drainage ditch is low.

Two additional culverts will be placed in a drainage ditch which forms the eastern boundary of the property (Areas No. 6 and 7 in Figure 3). This ditch crossing is necessary to provide access to the power plant from the existing access road. A total of 0.28 acre of wetland will be filled to install the two culverts. Like the above described drainage ditch, this ditch is regularly mowed and maintained. Mitigation is not proposed for this wetland impact.

Other construction activities that will impact wetlands include filling a 4.69-acre USACE-jurisdictional wetland to construct the power block facilities, and excavating and filling 0.47 acre

of a 0.55-acre USACE-jurisdictional wetland for constructing a stormwater detention basin (Areas No. 3 and 4 in Figure 3). The wetlands proposed to be impacted by the power block facilities (4.69 acres) and stormwater detention basin (0.47 acre) were to have been reclaimed as upland pasture, but were inadvertently created as low pockets during post-mine reclamation. These areas are slight depressions within the reclaimed upland pasture that support weedy, early colonizing wetland species such as cattail, Carolina willow, and primrose willow. The overburden material used for reclamation contains a high clay content, and has contributed to the high water retention of these depressional areas. Because these two wetlands were historical uplands and inadvertently created during reclamation, and because they provide low ecological value, mitigation is not warranted for these two USACE-jurisdictional wetlands.

3.0 MITIGATION DESIGN

3.1 WETLAND CREATION

A total of 0.26 acre of forested wetland is proposed to be created on the north side of the unnamed tributary wetland (Figure 4). The mitigation site will be approximately 35 ft wide and extend approximately 324 ft along the tributary wetland. It will be situated between the tributary wetland and an upland reclamation area created by IMC-Agrico. Construction of the wetland will commence with the construction of the Hardee Unit 3 facility which is scheduled to begin in January 1997.

Initial land grading will include lowering the land surface in the area above seasonal high water (SHW) to the seasonal high water elevation (121.99 ft NGVD). All excavated material will be removed to the Hardee Unit 3 construction site. Figure 5 depicts the proposed grading and planting zones to be construction on the site. The soils in the proposed mitigation site contain a high clay content as a result of mining and reclamation and will be used as the primary substrate. No mulch is available from the site or nearby areas since areas to be excavated have been previously mined and reclaimed. The reclaimed soils have been shown to be adequate for forested wetland creation by numerous examples in the mining industry.

The list of plants to be planted at the mitigation site (Table 2) has been developed by identifying tree species growing in the adjacent floodplain forest and by determining which tree species are likely to be found in floodplain forest in the Polk/Hardee County area. The purpose of the

planting will be to increase wetland functions in the area, augment natural recruitment of tree and herbaceous species, and increase the density and diversity of tree species in the area.

All tree species will be obtained from nursery grown stock. Trees will be planted at a maximum of 10-ft centers to provide a density of at least 436 trees per acre. Herbaceous species will be planted on 3-ft centers to provide a density of 4,840 plants per acre.

Wetland monitoring will occur quarterly for the first year and semi-annually thereafter. The semi-annual monitoring will occur in March and September and will continue until a determination of success has been made. The mitigation project will be considered successful when the density of trees growing above the herbaceous stratum is equivalent to at least 400 trees per acre. Tree survival, health and vigor assessment, percent cover of desirable species, and percent cover of exotic and nuisance species will be determined during each monitoring event. Photographs from permanent photographic stations will be taken for each report and water level elevations will be measured on a monthly basis.

Monitoring methodology will include monitoring the planted tree species using two 10-ft-wide permanently marked belt transects (Figure 7). Herbaceous species will be monitored using 1 m² plots located every 10 meters on the permanent transects.

Maintenance of the mitigation area will include routine removal of nuisance and exotic species with the intent of reducing these species to approximately 0 percent following each maintenance event. At no time will the exotic and nuisance species coverage be allowed to exceed 10 percent. Any maintenance activities associated with monitoring events will be conducted after monitoring has occurred.

3.2 WETLAND RESTORATION

Wetland restoration will be conducted to mitigate for crossing the IMC-Agrico wetland reclamation area by the water circulating pipes. Construction of the circulation pipes will result in clearing 0.06 acre of FDEP-jurisdictional wetlands and 0.22 acre of USACE-jurisdictional wetlands (see Page 1). The only permanent fill remaining in this wetland will be concrete support structures. After construction is complete, the 0.22-acre site will be graded to the original elevation and planted with native herbaceous species. Figure 6 depicts a cross-section of the

wetland restoration site. The wetland will be maintained as a herbaceous wetland. The following species will be planted at the restoration site on 3-ft centers.

<i>Juncus effusus</i>	Soft rush
<i>Spartina bakeri</i>	Baker's cordgrass
<i>Scirpus validus</i>	Bulrush
<i>Panicum hemitomon</i>	Maidencane
<i>Thalia geniculata</i>	Fireflag
<i>Pontederia cordata</i>	Pickerelweed
<i>Sagittaria lancifolia</i>	Arrowhead

Wetland monitoring for the restoration area will occur semiannually (in March and September to correspond with the dry and wet season) until a determination of success has been made. The restoration project will be considered successful when percent cover of desirable species can be maintained at 80 percent or higher for three consecutive monitoring events. Plant survival, health and vigor assessment, percent cover of desirable species, and percent cover of undesirable species will be determined during each monitoring event. Photographs will also be taken and the water level measured at the restoration site.

Table 1. Wetland Impacts and Proposed Mitigation			
Wetland Impact	Type of Impact	Mitigation Ratio	Mitigation Plan
Circulating Water Line	FDEP - Clear 0.06 acre of reclamation wetland. Within the cleared area, excavate 0.015 acre and fill 0.015 acre in the form of concrete pipe support structures. USACE - Clear 0.22 acre of reclamation wetland. Within the cleared area, excavate 0.085 acre and fill 0.085 acre in the form of concrete pipe support structures.	3.7:1 1:1	Create 0.22 acre of forested wetland on the north side of the tributary wetland. Restore the 0.22 acre cleared area as a herbaceous marsh.
Retainment Berm	FDEP and USACE - Fill 0.03 acre and excavate 0.003 acre of disturbed herbaceous wetland.	1:1	Create 0.04 acre of forested wetland on the north side of the tributary wetland.
Culverts	West and South Ditch: FDEP and USACE - 0.014 acre of drainage ditch wetland will be filled to install two culverts. East Ditch: FDEP - 0.28 acre of drainage ditch wetland will be filled to install two culverts.	N/A	No mitigation is proposed for these wetland impacts due to the poor ecological quality and because the impact areas will continue to function as ditches and convey water after the culverts are installed.
Power Block Area	USACE - Fill 4.69 acre of disturbed herbaceous/shrub wetland.	N/A	No mitigation is proposed for this wetland impact due to its poor ecological quality and because this wetland was historically an upland that was inadvertently created during mine reclamation.
Detention Basin	USACE - 0.47 acre of disturbed herbaceous wetland will be excavated and filled.	N/A	No mitigation is proposed for this wetland impact due to its poor ecological quality and because this wetland was historically an upland that was inadvertently created during mine reclamation.

Note: N/A = Not Applicable.

Table 2. Wetland Species Planting Details in the Mitigation Area			
Species	Size	Quantity	Zone
<i>Acer rubrum</i>	3 gallon	25	High Swamp
<i>Liquidambar styraciflua</i>	3 gallon	25	High Swamp
<i>Fraxinus caroliniana</i>	3 gallon	25	High Swamp
<i>Taxodium ascendens</i>	3 gallon	20	Low Swamp
<i>Nyssa sylvatica var. biflora</i>	3 gallon	19	Low Swamp
<i>Spartina bakeri</i>	2 inch container	411	High Swamp
<i>Panicum hemitomon</i>	2 inch container	218	Low Swamp
<i>Juncus effusus</i>	2 inch container	412	High Swamp
<i>Sagittaria lancifolia</i>	2 inch container	218	Low Swamp

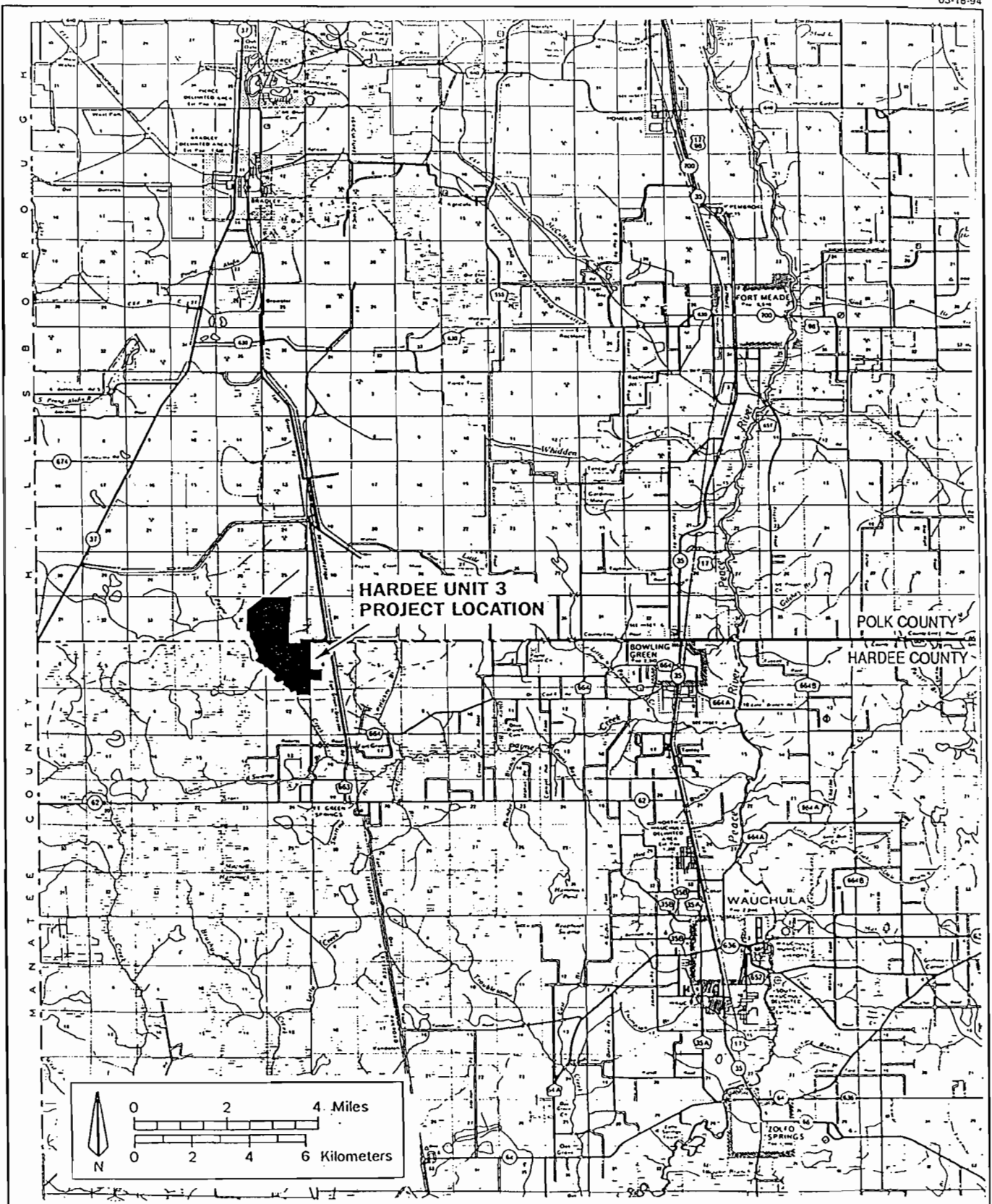


Figure 1
Location of Hardee Unit 3 Project

Sources: FDOT, 1990; 1992; KBN, 1994.



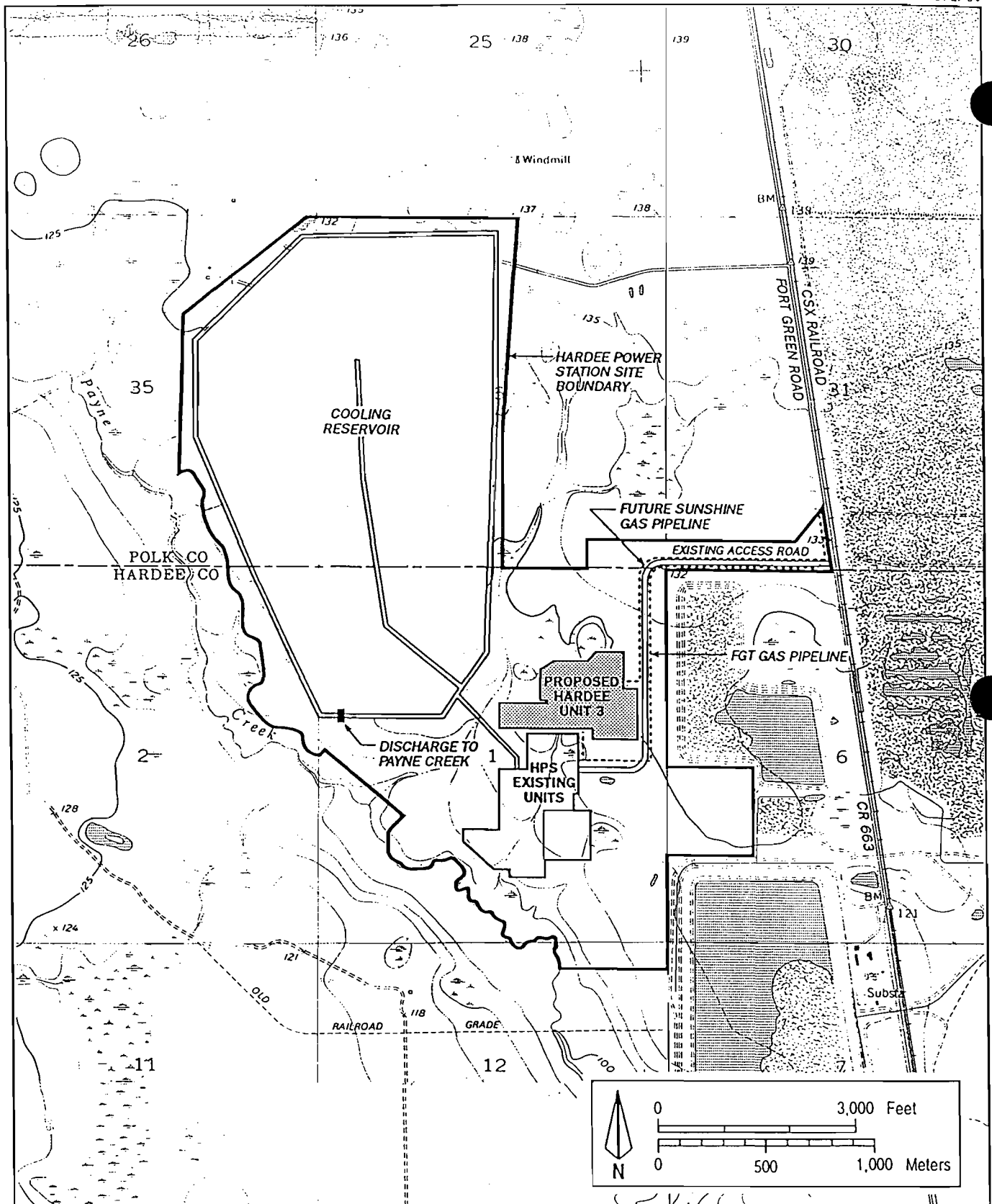


Figure 2
Hardee Unit 3 Site in Relation to Existing Facilities

Sources: USGS, 1987; KBN, 1994.



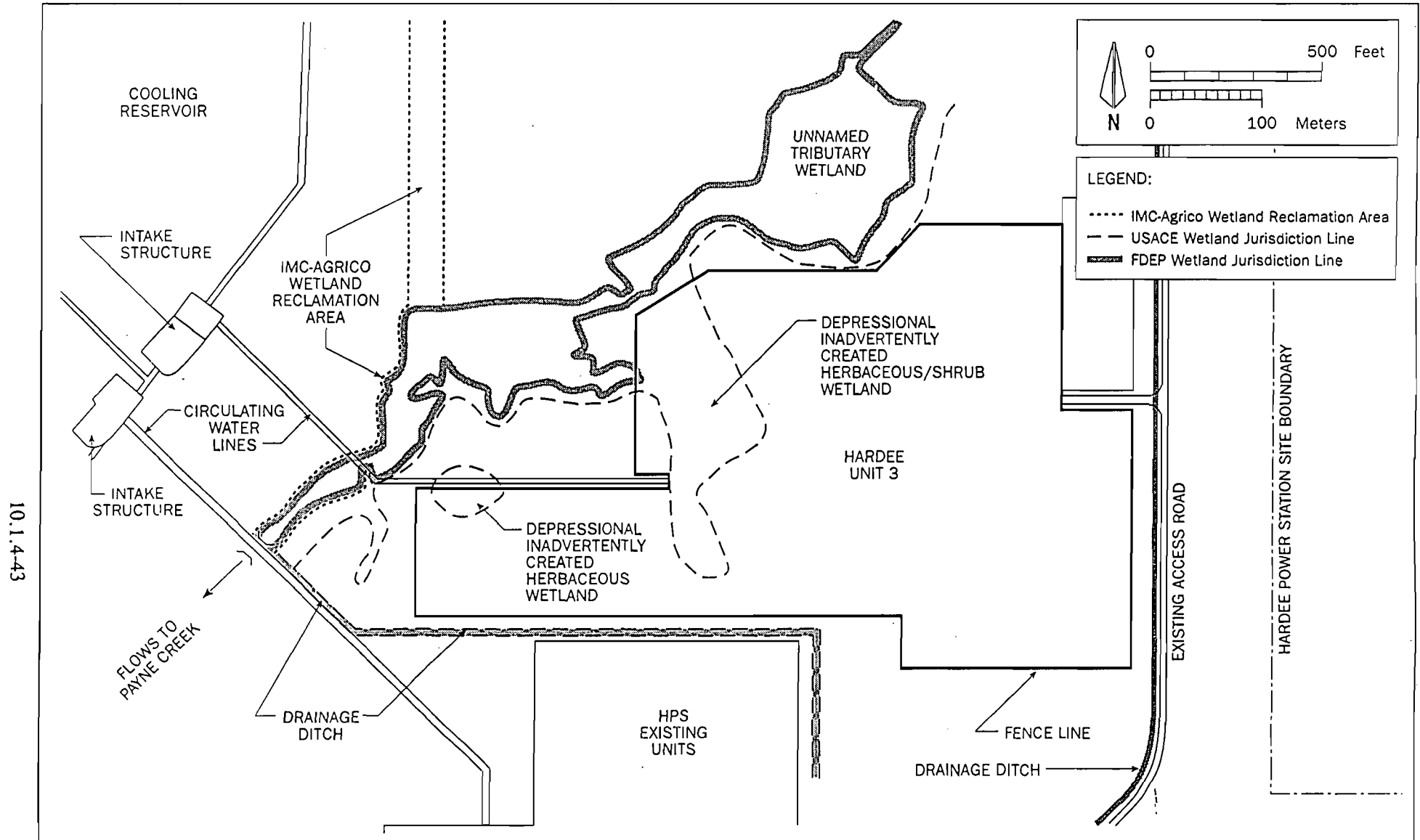


Figure 3
Location of Jurisdictional Wetlands

Source: KBN, 1994.



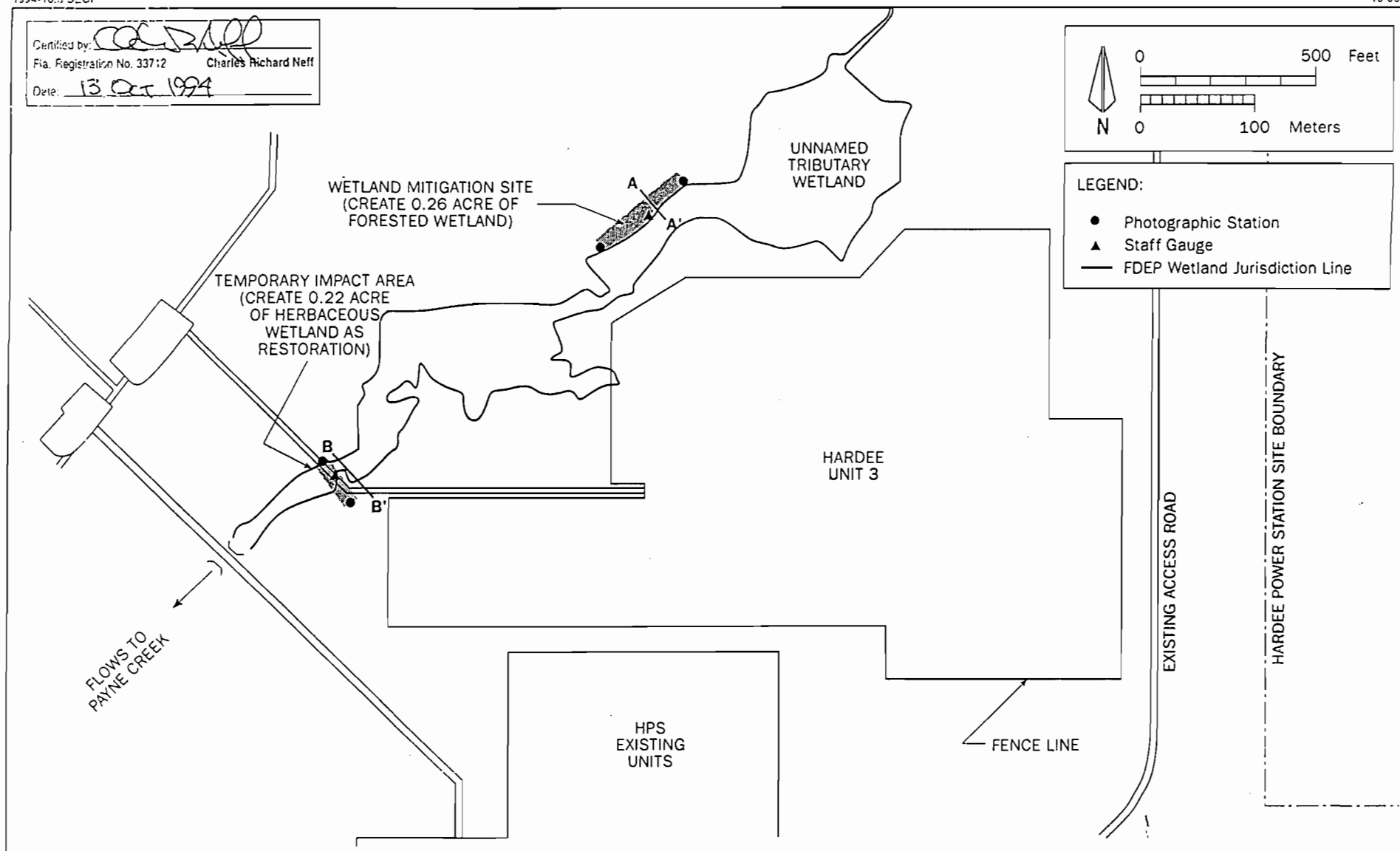
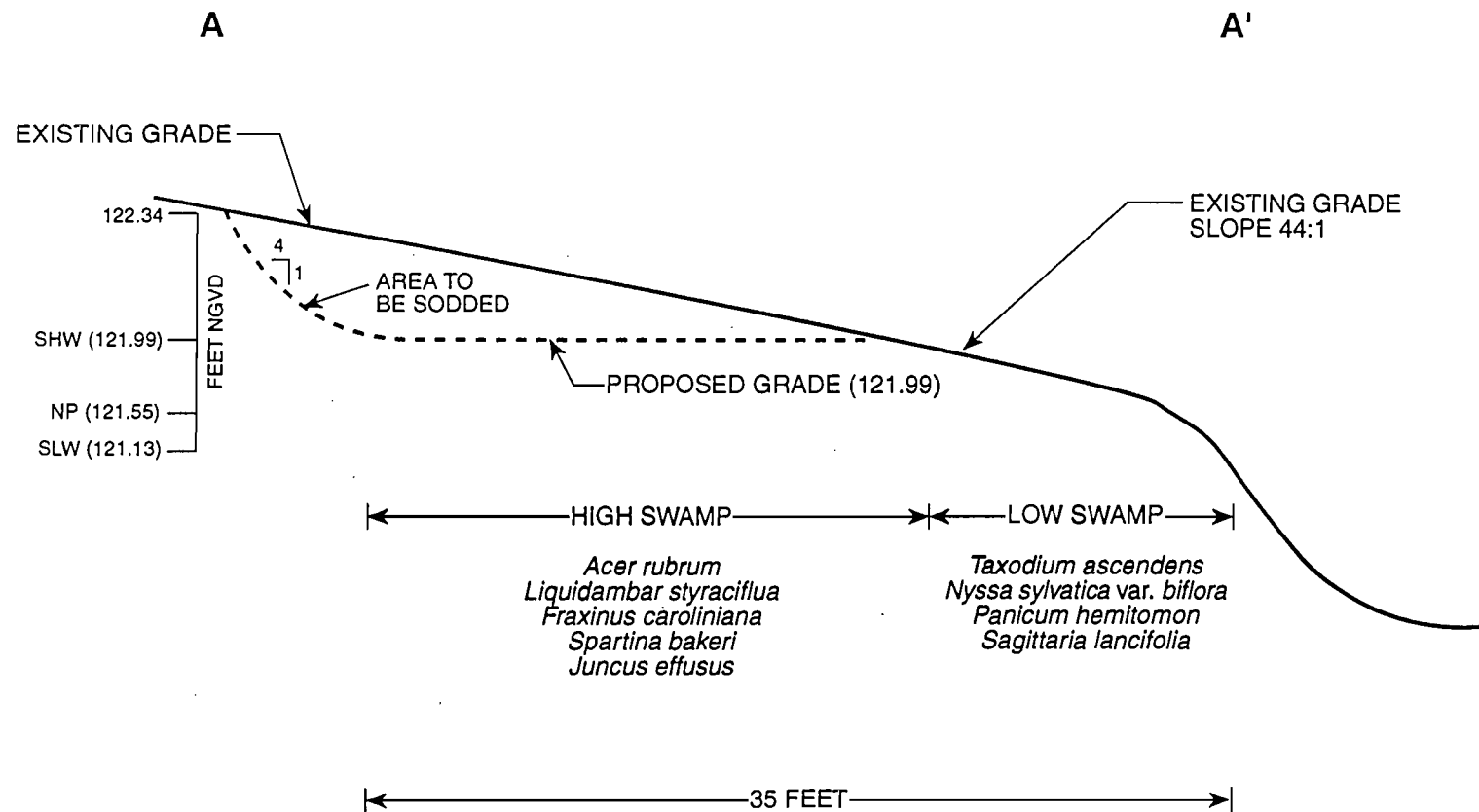


Figure 4
 Plan View of Mitigation Sites
 (Revised 10/12/94)

Source: KBN, 1994.



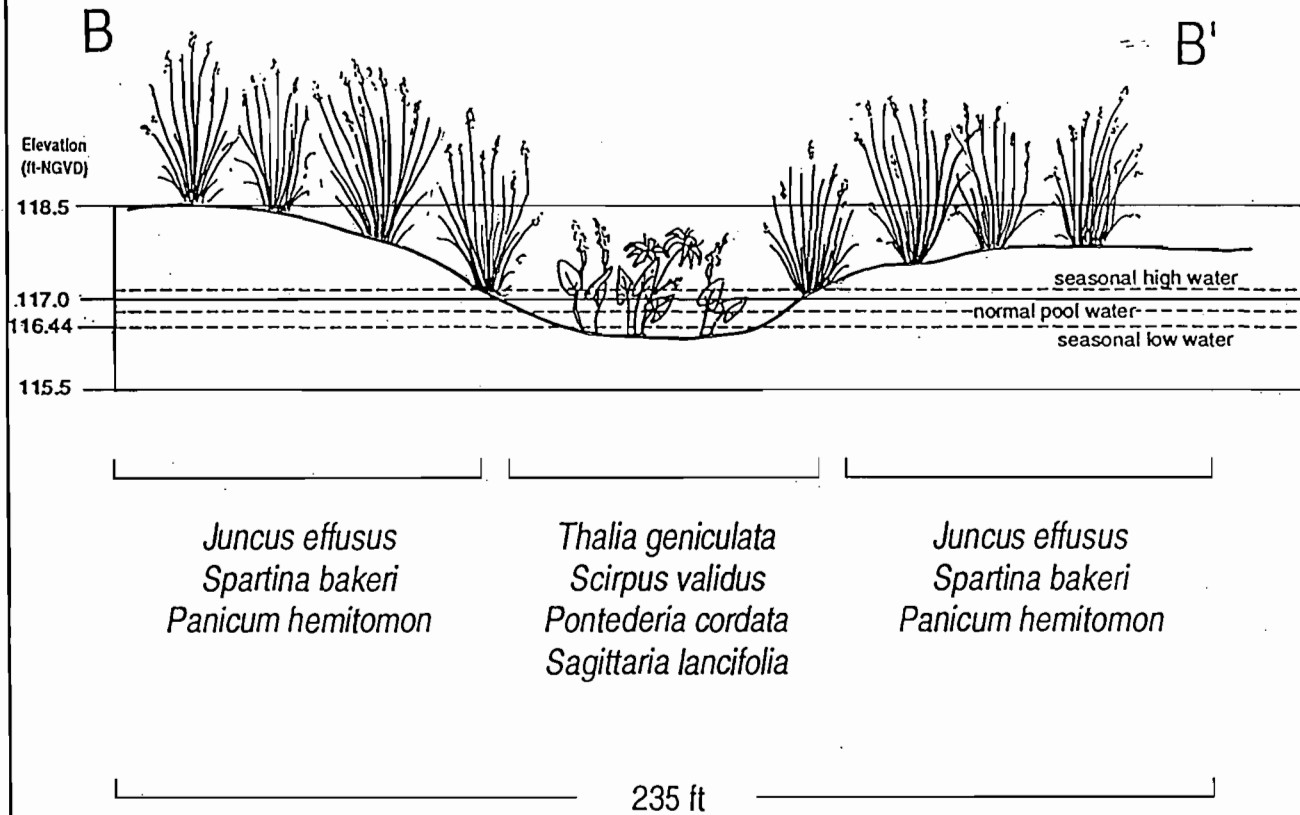
**EXPLANATION**

SHW = SEASONAL HIGH WATER
 NP = NORMAL POOL
 SLW = SEASONAL LOW WATER

Figure 5
 Cross Section of the Wetland Creation Site
 (Revised 10/12/94)



Certified by Charles Richard Neff
 Fla. Registration No. 33712
 Date: 24 Aug 1994



Notes: Wetland restoration area above seasonal high water corresponds with CORP-jurisdictional areas.

Plants will be bare root seedlings planted on 3-ft centers.
 Area of wetland mitigation site is 40 ft wide by 235 ft long (0.22 acre).
 Seasonal high water = 117.16 ft-NGVD
 Normal pool water = 116.80 ft-NGVD
 Seasonal low water = 116.44 ft-NGVD

Figure 6
 Cross Section of the Wetland Restoration Site
 (Revised 08/23/94)



10.1.4.47

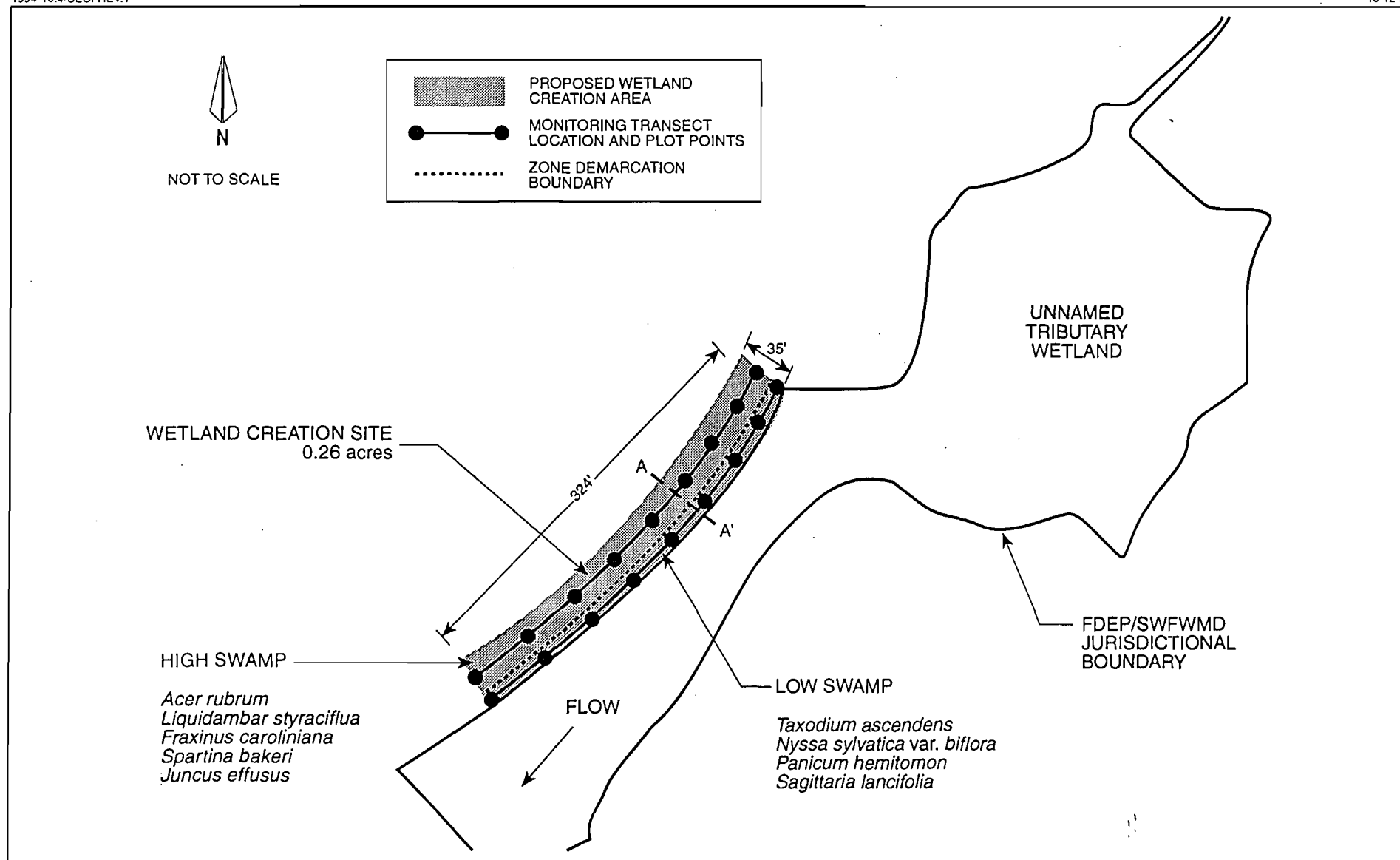


Figure 7
Detailed Plan View of Wetland Creation Area

HARDEE UNIT 3

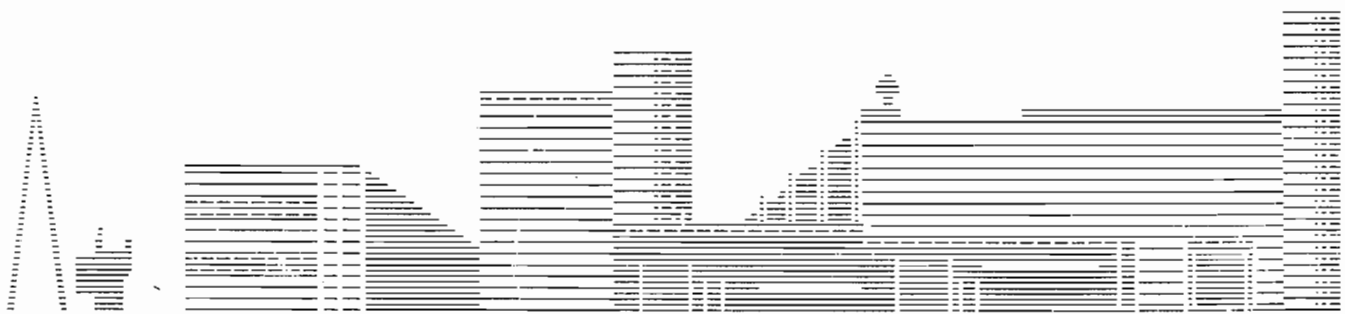
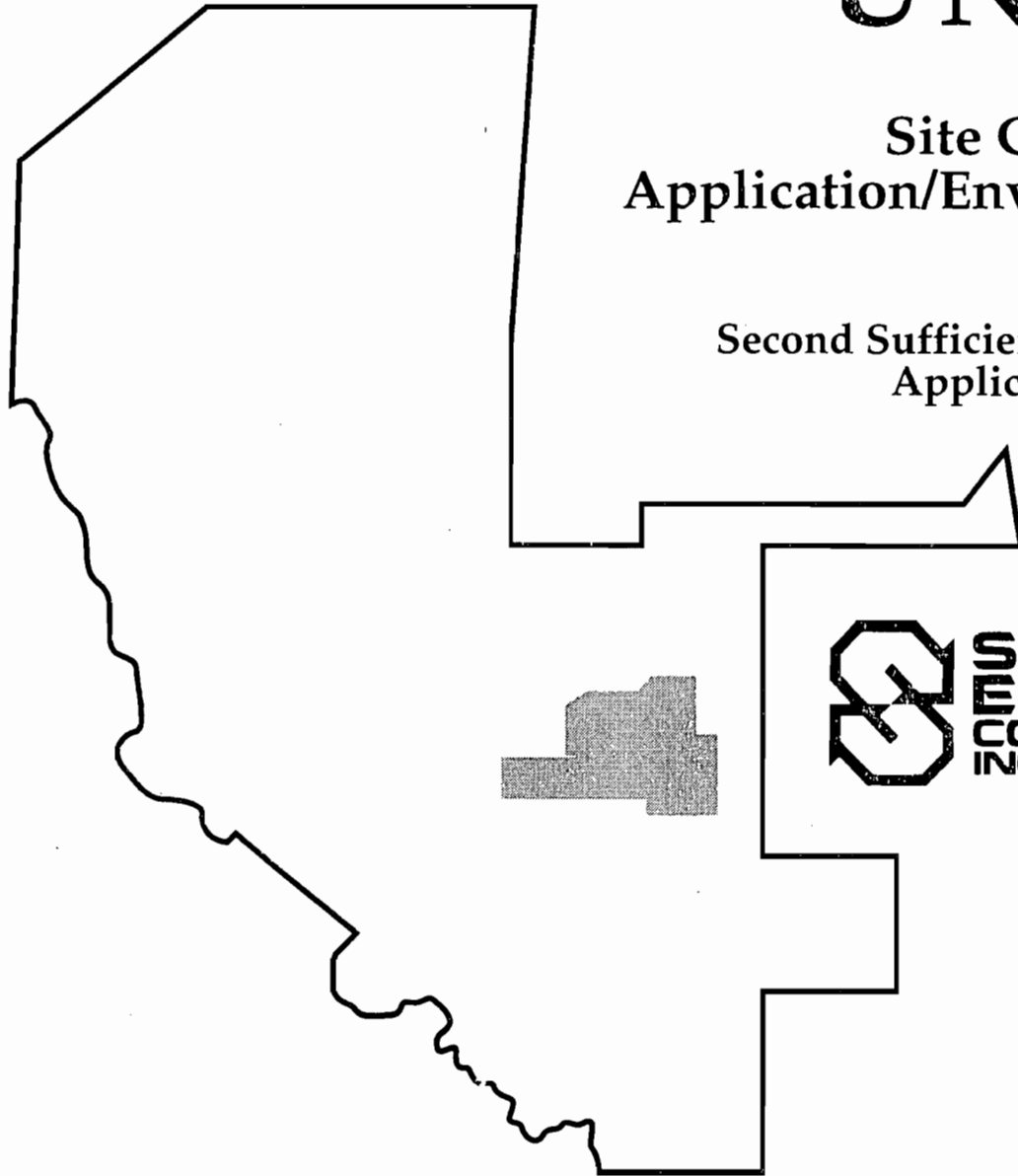
Site Certification Application/Environmental Analysis

**Second Sufficiency Comments/
Applicants Responses**

SUBMITTED BY



October 1994



CONTENTS

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION	
BUREAU OF AIR REGULATION	FDEP.BAR
BUREAU OF SUBMERGED LANDS AND	
ENVIRONMENTAL RESOURCES	FDEP.BSL
DIVISION OF WATER FACILITIES	FDEP.DWF
INDUSTRIAL WASTEWATER SECTION	FDEP.IWW
POINT SOURCE EVALUATION SECTION	FDEP.PSE
SOUTHWEST DISTRICT	FDEP.SWD
 SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT	 SWFWMD

TO: Buck Oven, P.E. Administrator
FROM: John Brown, P.E. Administrator
DATE: September 21, 1994
SUBJECT: Seminole Electric Cooperative Incorporated (SECI)
Hardee Unit 3 - PA89-25SA, Mod 8035
PSD-FL-214

The Bureau of Air Regulation finds the above referenced application package still insufficient. Based on our review of the company's responses to sufficiency comments, dated August 26, 1994, we have determined that the following additional information is needed in order to process the application:

1. Provide test methods (EPA or otherwise) utilized in determining preliminary laboratory data for the proposed Westinghouse Model 501F combustion turbine. If EPA methods were used, specify which ones. If some other emission methods were utilized, describe their deviations from the EPA methods. FDEP.BAR-1
2. Provide bench scale test results or any other testing that Westinghouse might have performed for determining NO_x emissions during the power augmentation mode. The test data that was submitted was for routine operation of the combustion turbine and did not provide indications of increased NO_x emissions during power augmentation mode. FDEP.BAR-2

JB/SA/bjb

Florida Department of
Environmental Protection

Memorandum

TO: Steve Palmer
FROM: Trudie D. Bell *TDB*
DATE: September 14, 1994
SUBJECT: PA89-25SA, Seminole Electric Cooperative, Inc.
Hardee Unit 3

The Bureau of Submerged Lands and Environmental Resources staff has reviewed the additional information received on August 26 and August 31 in regards to the site certification application for the above referenced project. The Bureau has determined that the additional information is insufficient. Please provide the following information to allow the Bureau to fully evaluate the impacts of the proposed project.

1. Figure 9 shows a road crossing a jurisdictional drainage ditch southwest of the detention basin. This ditch crossing is not shown on Figure FDEP.BWRM-8. Please revise the appropriate drawing to resolve this conflict and submit the revised drawing to the Bureau.

FDEP.BSL-1

2. Please revised Figure 4 to label the wetland restoration area as a temporary impact area. The current labeling indicates that the pipeline crossing is a mitigation area rather than an area of temporary impact that will be restored.

FDEP.BSL-2

BEST AVAILABLE COPY

I N T E R O F F I C E M E M O R A N D U M

Date: 12-Sep-1994 08:18am EST
From: Jan Mandrup-Poulsen TAL
MANDRUP_J
Dept: Division Water Facilities
Tel No: 904/488-4520
SUNCOM: 278-4520

To: Al Rushanan TAL

(.RUSHANAN_A)

Subject: Seminole Electric/Hardee Unit 3

1,

Upon review of the Hardee Unit 3 Sufficiency Comments and responses, I noted that my (see attached) comments were either not transmitted to the applicant or were ignored, as they are not part of the response package.

Could you check your records on this? I know Richard Drew received my comments, as he called to check on the first item.

Thanks.

Jan

BEST AVAILABLE COPY

TO: Richard D. Drew
FROM: Jan Mandrup-Poulsen
DATE: June 27, 1994
SUBJECT: Seminole Electric Cooperative/Hardee Unit #3
Site Certification Application
Sufficiency Comments

I have completed my review of the Site Certification application submitted by the Seminole Electric Cooperative on behalf of the proposed Hardee Unit 3 power plant. My requests for additional information follow:

- 1) Include in the report the range of expected values for pH and dissolved oxygen in the cooling pond over the course of a day and of a year. FDEP.DWF-1
- 2) Are the iron concentrations correctly reported as mg/L in Tables 2.3.2-2 and 2.3.2-3? FDEP.DWF-2
- 3) Explain why Table 2-3 in Appendix 10.10 shows no value for Surficial Aquifer seepage. Also explain why Table 2-4 does not report any values for Surface Runoff or Surficial Aquifer Seepage. FDEP.DWF-3
- 4) Identify the location of the design calculations for the storm water detention pond reported to be in Appendix 10.12 (which is the Highway Capacity System). Appendix 10.9 (Erosion and Sedimentation Control Plan) contains no such calculations. (Note: Page 3.8.2-2 makes reference to this Plan being in Appendix 10.10.) Verify that the only treatment in the stormwater detention pond will be through settling and retention/detention. FDEP.DWF-4

Please contact me if you have any questions regarding this review.

wfr/jmp

cc: Kevin Petrus
Craig Diltz
Daryll Joyner

TO: Richard Drew, Chief
Bureau of Water Facilities Planning and Regulation

THROUGH: Phil Coram, P.E., Administrator
Industrial Wastewater Section

FROM: Craig Diltz, P.E., Engineer
Industrial Wastewater Section

DATE: September 12, 1994

SUBJECT: SECI Hardee Unit 3 Sufficiency Response

The Industrial Wastewater Section has reviewed the subject document transmitted by August 26, 1994 letter from SECI. The response adequately addresses the questions posed in our June 22 memo. We have no further comment at this time. FDEP.IWW-1

If you have any questions please contact me at 904/488-4522.

PC/cd/ss

TO: Richard D. Drew, Chief
Bureau of Water Facilities Planning and Regulation

THROUGH: Al Bishop, P.E. Administrator
Point Source Evaluation Section

FROM: Greg Knecht
Point Source Evaluation Section

DATE: September 12, 1994

SUBJECT: Seminole Electric Cooperation, Inc. - Hardee Unit 3
Response to Insufficiency Comments

We have reviewed Seminole Electric Cooperative Incorporated (SECI) responses to the finding of insufficiency of their siting certification application for the proposed Hardee Unit 3. The responses provided by SECI are sufficient.

FDEP.PSE-1

If you have any questions or comments, please contact Greg Knecht at 488-0780.

GK

Memorandum

Florida Department of
Environmental Protection

TO: Richard Garrity, Ph.D.
Hamilton Oven, P.E.

FROM: Michael S. Hickey, P.E. *MSH*

DATE: September 14, 1994

SUBJECT: SECI Hardee Unit 3
SCA Insufficiency Response

The Southwest District has the following comments on the above subject.

WATER FACILITIES COMMENTS:

INDUSTRIAL WASTEWATER COMMENTS by Lynne Milanian:

I have reviewed the response from SECI provided to address each of Al McLaurin's five comments (copy attached). The information submitted by SECI has adequately satisfied each outstanding issue.

FDEP.SWD-1

DRINKING WATER PROGRAM COMMENTS by Yanisa Angulo:

I have reviewed the Seminole Electric Cooperative Incorporated (SECI) Site Certification Sufficient Comments/Applicant Responses for the proposed Hardee Power Plant Expansion (Unit 3). No information regarding construction of the drinking water system was provided. Therefore, this section does not have any further comments. The information necessary to comply with Sections 62-550, 62-551, 62-555 and 62-560, F.A.C. will be required in the conditions of certification.

FDEP.SWD-2

Memorandum to Richard Garrity and Hamilton Owen
RE: SECI Hardee Unit 3 - SCA Insufficiency Response
Page 2

TECHNICAL SERVICES PROGRAM COMMENTS:

Geological Comments by Joe May:

I have reviewed the Technical Services insufficiency responses and have the following comments with regard to ground water protection:

FDEP.SWD-8: Response acknowledged. It is my understanding that ground-truthing of surficially expressed karst features was accomplished by visual inspections.

FDEP.SWD-3

FDEP.SWD.9: Response acknowledged. It is my understanding that the depth of loose sands in the area where boring's B-14 and B-15 is a reclaimed area.

FDEP.SWD-4

FDEP.SWD.10: Insufficient response. The recent occurrence (5/92) of arsenic in ground water monitoring well HPS-1 has not been adequately explained. It is noted that lead and chromium have not been detected in HPS-1 3/92 and 1/93, respectively. However, contaminants may be drawn onto the site from the upgradient mining area (as inferred by the response) at differing velocities since each metal ion has different diffusion behavior and ionic coefficients. It should be noted that arsenic is generally considered to be substantially less mobile than either lead or chromium and, therefore, would be expected to pass a specific point (while in transit) at a later time. The SECI should elaborate on the effects of the potential scenario of mobilizing offsite contamination onto its facility as well as possible risks to its potable water supply. Gross alpha activity levels should also be addressed in this response.

FDEP.SWD-5

FDEP.SWD.11: Response acknowledged. Once final design of the Wastewater Collection and Treatment System has been finalized the sampling points for wastestream analyses will then be discussed.

FDEP.SWD-6

FDEP.SWD.12: Response acknowledged. Sampling of the wastestreams may be accomplished in accordance with the NPDES permit. However, it should be noted that this sampling is required in order to determine the appropriate ground water monitoring parameters in the ground water monitoring system. Therefore, parameters not verified to be absent from the collective wastewater stream may be required in the Site Certification.

FDEP.SWD-7

FDEP.SWD.13: Insufficient response. The 2-D finite element model should be identified by title. It is my understanding that the input and output files are not available at this time. Further comment in this regard is dependent upon the identification of the model.

FDEP.SWD-8

Memorandum to Richard Garrity and Hamilton Owen
RE: SECI Hardee Unit 3 - SCA Insufficiency Response
Page 3

FDEP.SWD.14: Response acknowledged. The CompQAP will include a provision for measuring static ground water levels in the monitoring wells prior to purging.

FDEP.SWD-9

FDEP.SWD.15: Insufficient response. The water quality analysis parameters should be updated. Specific parameters may be deleted dependent upon wastestream analysis results as well as four consecutive quarters of downward trending or (non-trending) water quality results.

FDEP.SWD-10

Biological Comments by Stefan Schulze:

I have found Seminole Electric Cooperative's (SECI) sufficiency response to be adequate with regards to surface water concerns. It is proposed that SECI and the TECO Polk Power Station (TPS) shall share a common outfall from the cooling reservoir to Payne Creek as described in the NPDES permit application (Appendix 10.1.2 of the SCA). Will the NPDES permits for the two facilities be identical?

FDEP.SWD-11

The current NPDES permit (FL0041751) for the cooling reservoir outfall is issued to TPS and requires monitoring for a variety of parameters at the point of discharge during a discharge event. In the event that there is a discharge, the results of these analyses must be submitted to the Southwest District for review.

DOMESTIC WASTEWATER PROGRAM COMMENTS by William Washburn:

My comments on the SECI Sufficiency comments/applicant responses follow. Comments are confined to the section labeled "FDEP.SWD"

FDEP.SWD-1, page FDEP.SWD-1: The response indicates that applicant will design and operate the WWTP in compliance with the "substantive requirements of Chapter 17-600 and -601, F.A.C." "substantive" means to me that they may comply with the spirit but not necessarily the letter of the rules. This is not adequate. They must comply with all the technical requirements, and not only of Chapter 62(17)-600 and 601, but also any parts of 604, 610, 640, and 699 which may apply to their design and operation.

FDEP.SWD-12

FDEP.SWD-2, page FDEP.SWD-1 My previous comment still stands. I will use the FPC site certification language as a starting model and provide a draft to Tallahassee for this project as the minimum acceptable requirements for the construction and operation of the wastewater treatment facility.

FDEP.SWD-13

Memorandum to Richard Garritty and Hamilton Owen
RE: SECI Hardee Unit 3 - SCA Insufficiency Response
Page 4

FDEP.SWD-6, page FDEP.SWD-3, paragraph 1: I concur with the bulk of the SECI reply. However, submission of the construction permit application form, when the time to build arrives, may be appropriate as the simplest way of conveying information since all of the technical information normally contained on the form will be required one way or another. A separate permit to construct and to operate will not be issued. That authority is implicit in the site certification approval. But separate department approval of design, placement into service, and operating procedures is required unless all that is accomplished prior to site certification approval. Finally, of high importance to the department is inclusion of the requirement of Florida Statute 403.511(5)(a) which imposes new or changed rule requirements on the construction or operation of a WWTP as a part of a power plant facility. This is especially important with the rule changes imminent in Chapters 62-610, 62-620, 62-640, F.A.C.

FDEP.SWD-14

FDEP.SWD-6, page FDEP.SWD-4, paragraph 2: I concur that nitrate monitoring will very likely not be a monitoring requirement in the effluent from the WWTP. The decision to include it or not in the groundwater monitoring rests with the Technical Support Division personnel, however, I believe it premature to make a statement that nitrates "will not have a measurable impact on the water quality of the ... adjacent ground water" until sufficient monitoring is conducted to assure that is true.

FDEP.SWD-15

WATER MANAGEMENT COMMENTS by Greg Colianni:

Responses to sufficiency questions have adequately addressed issues concerning wetland mitigation design, hydrology, maintenance and responsibility for meeting success criteria. Conditions of Certification should be tailored to ensure SECI will adhere to established BMP's during construction and that they will properly execute their proposed mitigation plan. No further sufficiency comments are offered at this time.

FDEP.SWD-16

WASTE MANAGEMENT COMMENTS by Allison Amram:

The Solid Waste section does not have any comments on this submittal, as they will not be disposing solid wastes on-site.

FDEP.SWD-17

AIR QUALITY COMMENTS by David Zell:

This program did not have any comments.

FDEP.SWD-18

/sgl

cc: Al Rushanan



An Equal Opportunity Employer

Southwest Florida Water Management District

2379 Broad Street • Brooksville, Florida 34609-6899 • 1-800-423-1476 (Florida Only) or
(904) 796-7211 • SUNCOM 628-4150 • T.D.D. Number Only (Florida Only): 1-800-231-6182

7601 Highway 301 North
Tampa, Florida 33637-6759
(813) 985-7481 SUNCOM 578-2070

170 Century Boulevard
Bartow, Florida 33830-7700
(813) 534-1448 SUNCOM 572-6200

111 Corporation Way
Venice, Florida 34292-3524
(813) 483-5970 SUNCOM 549-5970

2303 Highway 44 West
Taverness, Florida 34453-3809
(904) 637-1360

DEPARTMENT OF
ENVIRONMENTAL PROTECTION

SEP 23 1994

SITING COORDINATION

Joe L. Davis, Jr.
Chairman, Wauchula
Roy G. Harrell, Jr.
Vice Chairman, St. Petersburg
Sally Thompson
Secretary, Tampa
James E. Martin
Treasurer, St. Petersburg
Charles A. Black
Crystal River
Ramon F. Campo
Brandon
James L. Cox
Lakeland
Rebecca M. Eger
Sarasota
Mary J. Figg
Tampa
John T. Hamner
Bradenton
Curtis L. Law
Land O' Lakes

Peter G. Hubbell
Executive Director
Mark D. Farrell
Assistant Executive Director
Edward B. Helvenston
General Counsel

September 21, 1994

VIA FACSIMILE
AND U.S. MAIL

Mr. Hamilton S. Oven
Siting Coordination Office
Department of Environmental Protection
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Mr. Richard T. Donelan
Assistant General Counsel
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Sufficiency Comments
Seminole Electric Cooperative, Inc.
Application No. 89-25SA
DOAH Case No. 94-2765EPP

Dear Messrs. Oven and Donelan:

The District believes that the above-referenced application is still insufficient. The District's sufficiency comments, all relating to wetlands issues, are listed below.

1. Grading details for the proposed mitigation area are needed. Seminole Electric Cooperative, Inc. should be advised that mitigation credit can only be granted for the area below the seasonal high water level (SHWL) elevation.

SWFWMD-1

2. Based upon the presence of nuisance and upland species in the mitigation area, the existing ground cover will not be acceptable as part of the mitigation proposal. Mulching and/or planting details are needed for the mitigation area. Details should include plan and cross-sectional views showing limits of each distinct zone in reference to proposed control elevations, mulching, proposed plantings (species, sizes, densities and relative composition) within each zone, proposed water elevations (SHWL and NP), bottom elevations, and slopes.

SWFWMD-2

Excellence
Through
Quality
Service

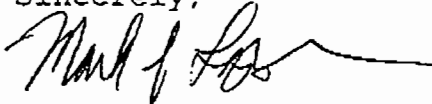
Mr. Hamilton S. Oven
Mr. Richard T. Donelan
September 21, 1994
Page 2

3. A detailed planview of the mitigation area is needed. Details should include views showing limits of each distinct zone in reference to proposed control elevations, proposed plantings (species, sizes, densities and relative composition) within each zone, and mulching details.

SWFWMD-3

If you have any technical questions, please contact Mark Hurst at the District's Bartow office. If you have any general or procedural questions, please contact me at the District's Brooksville office.

Sincerely,



Mark F. Lapp
Assistant General Counsel

MFL:jlh

cc: Jan R. Burke, Jr.
P. Scott Laidlaw
Mark K. Hurst
Dawn G. Turner
File of Record

SEMIROLE\OvenDone.1tr

FDEP.BAR-1

Comment: Provide test methods (EPA or otherwise) utilized in determining preliminary laboratory data for the proposed Westinghouse Model 501F combustion turbine. If EPA methods were used, specify which ones. If some other emission methods were utilized, describe their deviations from the EPA methods.

Response: Westinghouse has not yet tested the 501F gas turbine to demonstrate the emission levels presented in the SCA and the PSD permit application. The following are Westinghouse's achievements to date in the area of dry low NO_x technologies:

- Operating experiences at the Mitsubishi Heavy Industries K Point Plant have demonstrated dry NO_x emission levels of 18 ppm without steam power augmentation.
- Westinghouse and its alliance partners have seven additional units with dry low NO_x combustors without steam power augmentation in service as of the third quarter of this year (1994). These units have achieved NO_x levels as low as 25 ppm.
- Testing of a single dry ultra low NO_x technology combustor without steam power augmentation has demonstrated levels lower than 10 ppm NO_x. These tests were performed using Westinghouse's internal proprietary single-combustion test procedures which are different than EPA full plant testing procedures.

Westinghouse has confidence that the proposed dry low NO_x emission levels will be achieved by the CTs for the Hardee Unit 3 Project.

FDEP.BAR-2

Comment: Provide bench scale test results or any other testing that Westinghouse might have performed for determining NO_x emissions during the power augmentation mode. The test data that was submitted was for routine operation of the combustion turbine and did not provide indications of increased NO_x emissions during power augmentation mode.

Response: There is no existing published data on the effects of steam power augmentation on NO_x output levels in operating combustion turbines utilizing dry low NO_x combustors. Westinghouse anticipates performing testing of this nature in the near future. These test data will be provided to FDEP when they are published.

Westinghouse expects NO_x emission levels of 25 ppm for a dry low NO_x combustor operating in a steam power augmentation mode. This NO_x emission level has been demonstrated on operating combustion turbines using existing diffusion burner technology with steam power augmentation. The pilot stage of a dry low NO_x combustor operates as a diffusion burner. As steam for power augmentation is introduced into the combustion turbine, the percentage of fuel for the pilot stage must be increased, thus causing NO_x emission levels to increase above those levels produced by the dry low NO_x combustor.

FDEP.BSL-1

Comment: Figure 9 shows a road crossing a jurisdictional drainage ditch southwest of the detention basin. This ditch crossing is not shown on Figure FDEP.BWRM-8. Please revise the appropriate drawing to resolve this conflict and submit the revised drawing to the Bureau.

Response: Figure FDEP.BWRM-8 has been revised and is attached.

FDEP.BSL-2

Comment: Please revised Figure 4 to label the wetland restoration area as a temporary impact area. The current labeling indicates that the pipeline crossing is a mitigation area rather than an area of temporary impact that will be restored.

Response: Figure 4 has been revised and is attached.

Certified by: COLEMAN
 Fla. Registration No. 33712 Charles Richard Neff
 Date: 13 Oct 1994

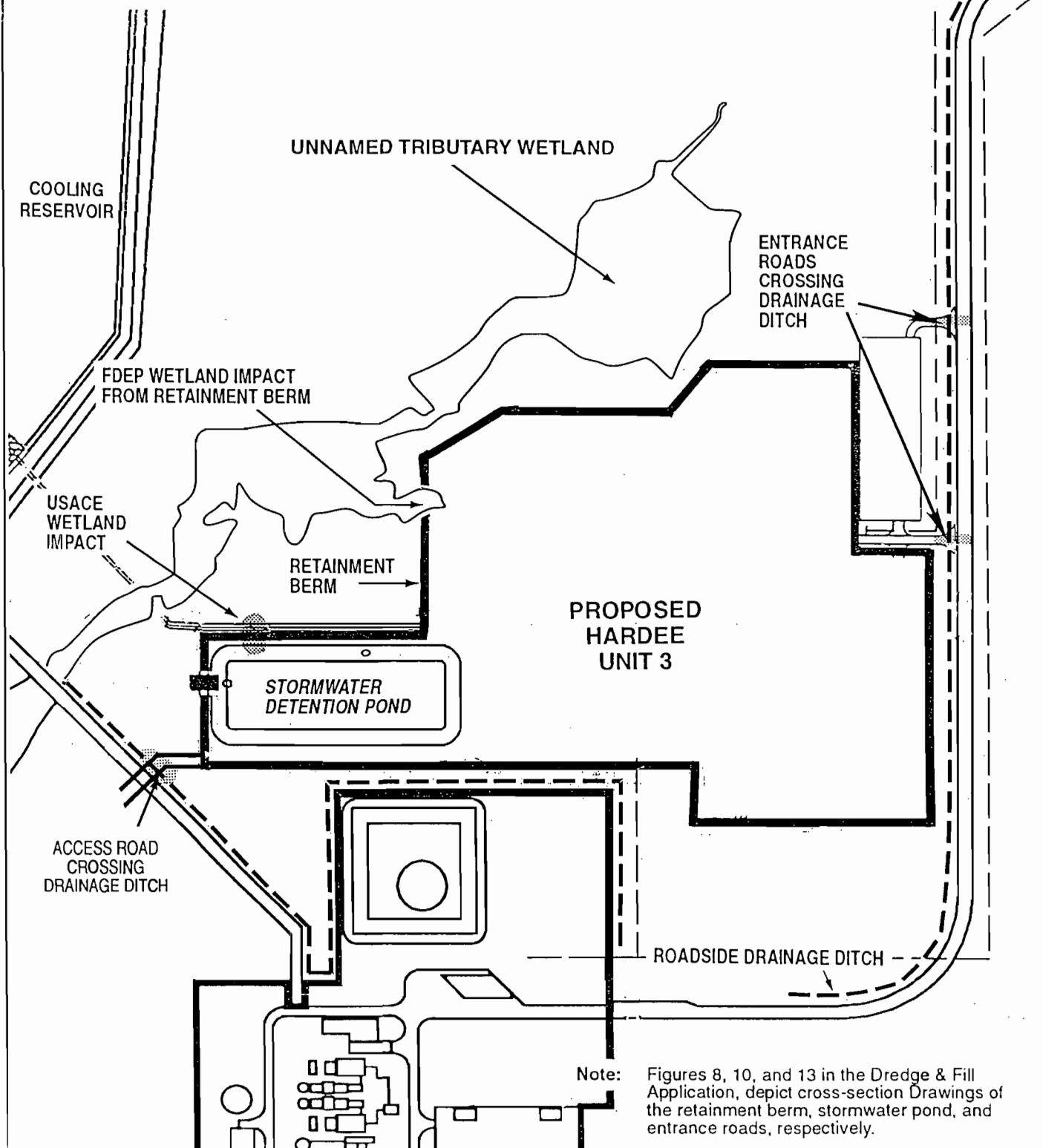
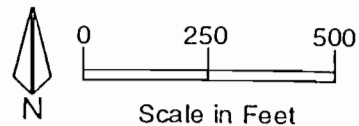


Figure FDEP.BWRM-8
 Plan View of Retainment Berm, Stormwater Pond, Entrance
 Roads, and Access Road Where Wetland Impacts Will Occur
 (Revised 10/06/94)



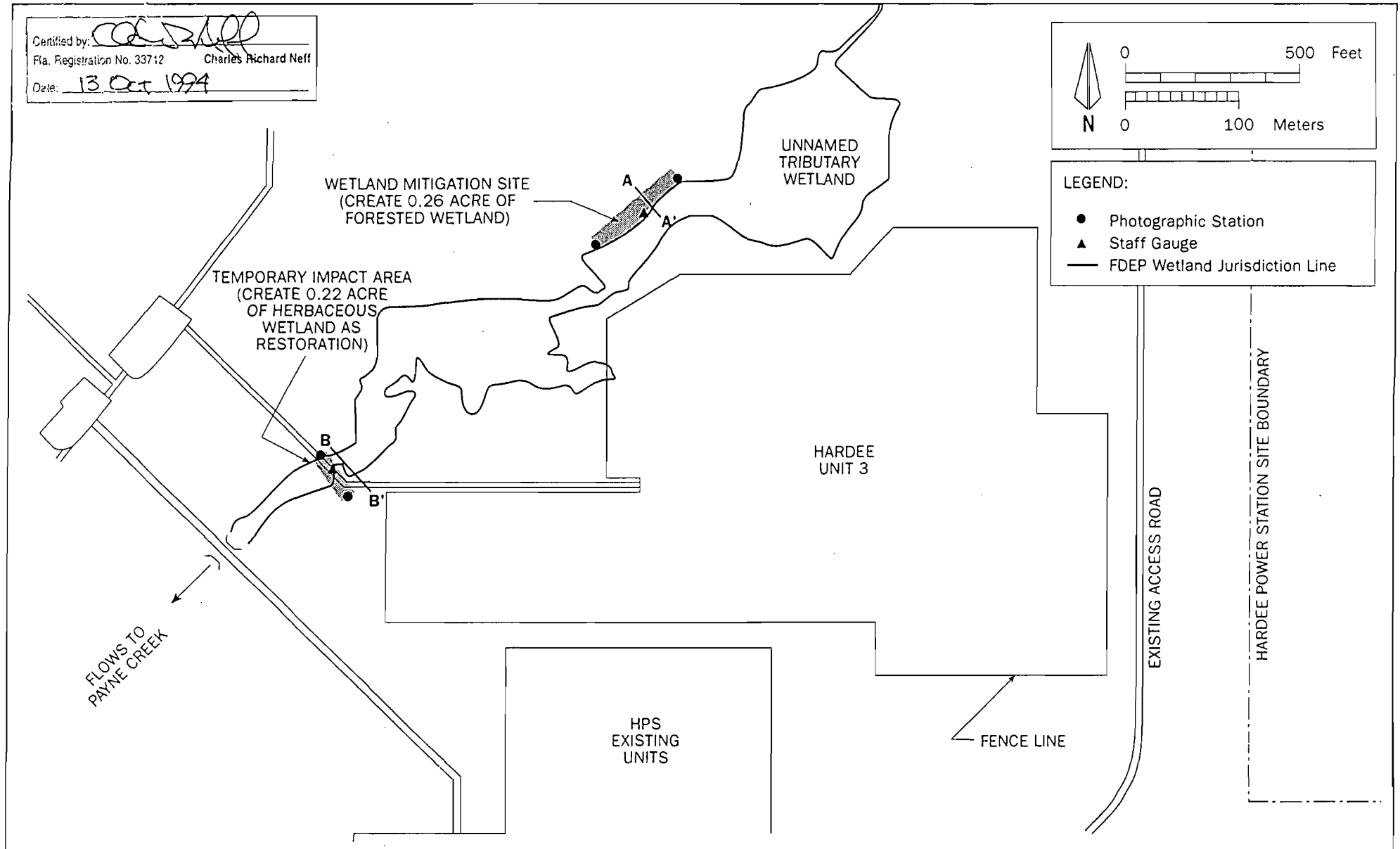


Figure 4
 Plan View of Mitigation Sites
 (Revised 10/12/94)

Source: KBN, 1994.



FDEP.DWF-1

Comment: Include in the report the range of expected values for pH and dissolved oxygen in the cooling pond over the course of a day and of a year.

Response: Both pH and dissolved oxygen (DO) in the cooling reservoir are expected to follow typical diurnal patterns for Florida surface waters. Diurnal studies of these parameters have not been performed and therefore specific ranges are not available.

The addition of the Hardee Unit 3 facility to the Hardee Power Station will not significantly affect the diurnal cycling of pH and DO in the cooling reservoir. It is important to note that the existing cooling reservoir is not a water of the state and is therefore not subject to State of Florida water quality standards.

FDEP.DWF-2

Comment: Are the iron concentrations correctly reported as mg/L in Tables 2.3.2-2 and 2.3.2-3?

Response: Iron concentrations presented in Tables 2.3.2-2 and 2.3.2-3 were obtained from original data sheets reported as mg/L. The iron concentrations reported in the groundwater are the result of naturally occurring iron compounds in the soils, such as the onsite clays, and the reducing environment of the groundwater. The iron concentrations reported for the groundwater are not indicative of contamination

FDEP.DWF-3

Comment: Explain why Table 2-3 in Appendix 10.10 shows no value for Surficial Aquifer seepage. Also explain why Table 2-4 does not report any values for Surface Runoff or Surficial Aquifer Seepage.

Response: The upland area that can potentially contribute surficial aquifer flow is small in extent (i.e., approximately 195 acres) and has soils with a high clay content. Given these factors, surface water runoff will be high (annual average rate of 311,500 gpd, or 19.3 inches/year) when calculated using the SCS Method. The estimated annual average evapotranspiration for the site is 37.9 inches/year (see SCA Table 2.3.3-2). These two values give a total average annual water loss from the upland area of 57.2 inches/year. Since the average annual rainfall for the site is 53.3 inches/year, there will likely be minimal or no recharge of the surficial aquifer, and measured evapotranspiration will be

less than estimated. Based on these calculations, the surficial aquifer seepage to the cooling reservoir was assumed to be zero. Because of these conditions, it was considered prudent to take a conservative approach and assign a surficial aquifer seepage rate of zero.

Surficial aquifer seepage was considered to be zero in Table 2-4 in Appendix 10.10 for the same reason. Table 2-4 presents the overall water budget for the maximum load condition for 880 MW. This table presents the maximum water use conditions for the Hardee Power Station. This analysis assumed the worst-case meteorological conditions that would result in the maximum groundwater withdrawal. The condition of zero rainfall and therefore zero surface runoff was assumed in this analysis, thereby maximizing the amount of groundwater withdrawn.

FDEP.DWF-4

Comment: Identify the location of the design calculations for the storm water detention pond reported to be in Appendix 10.12 (which is the Highway Capacity System). Appendix 10.9 (Erosion and Sedimentation Control Plan) contains no such calculations. (Note: Page 3.8.2-2 makes reference to this Plan being in Appendix 10.10.) Verify that the only treatment in the stormwater detention pond will be through settling and retention/detention.

Response: The design calculations for the stormwater detention pond are located in the third volume of the SCA labeled Storm Water Management Plan. The pond calculations are in Appendix B, Part 2. This volume was supplied to Steve Palmer of FDEP for review by FDEP personnel. Page 3.8.2-2 of the SCA has been revised and is included in this response.

The stormwater detention pond design is discussed in the Plan. Included in this design is a vegetated littoral zone covering 35 percent of the surface of the pond. This littoral zone will provide biological treatment of runoff. Treatment of the stormwater will be through settling, retention/detention, and biological treatment in the littoral zone.

FDEP.IWW-1

Comment: The Industrial Wastewater Section has reviewed the subject document transmitted by August 26, 1994 letter from SECI. The response adequately addresses the questions posed in our June 22 memo. We have no further comment at this time.

Response: Comment acknowledged.

FDEP.PSE-1

Comment: We have reviewed Seminole Electric Cooperative Incorporated (SECI) responses to the finding of insufficiency of their siting certification application for the proposed Hardee Unit 3. The responses provided by SECI are sufficient.

Response: Comment acknowledged.

FDEP.SWD-1

Comment: I have reviewed the response from SECI provided to address each of Al McLaurin's five comments (copy attached). The information submitted by SECI has adequately satisfied each outstanding issue.

Response: Comment acknowledged.

FDEP.SWD-2

Comment: I have reviewed the Seminole Electric Cooperative Incorporated (SECI) Site Certification Sufficient Comments/Applicant Responses for the proposed Hardee Power Plant Expansion (Unit 3). No information regarding construction of the drinking water system was provided. Therefore, this section does not have any further comments. The information necessary to comply with Sections 62-550, 62-551, 62-555 and 62-560, F.A.C. will be required in the conditions of the certification.

Response: Comment acknowledged.

FDEP.SWD-3

Comment: FDEP.SWD-8: Response acknowledged. It is my understanding that ground-truthing of surficially expressed karst features was accomplished by visual inspections.

Response: Comment acknowledged.

FDEP.SWD-4

Comment: FDEP.SWD-9: Response acknowledged. It is my understanding that the depth of loose sands in the area where boring's B-14 and B-15 is a reclaimed area.

Response: Comment acknowledged.

FDEP.SWD-5

Comment: FDEP.SWD-10: Insufficient response. The recent occurrence (5/92) of arsenic in ground water monitoring well HPS-1 has not been adequately explained. It is noted that lead and chromium have not been detected in HPS-1 3/92 and 1/93, respectively. However, contaminants may be drawn onto the site from the upgradient mining area (as inferred by the response) at differing velocities since each metal ion has different diffusion behavior and ionic coefficients. It should be noted that arsenic is generally considered to be substantially less mobile than either lead or chromium and, therefore, would be expected to pass a specific point (while in transit) at a later time. The SECI should elaborate on the effects of the potential scenario of mobilizing offsite contamination onto its facility as well as possible risks to its potable water supply. Gross alpha activity levels should also be addressed in this response.

Response: As previously indicated in the August 1994 sufficiency response, reclamation activities of offsite mined areas located to the north of Well HPS-1 were ongoing at the time of SCA preparation. It was indicated that the reclamation activities were not anticipated to have impacted the concentration of arsenic in the surficial aquifer, however the occurrence of gross alpha may have been affected by the phosphate mining and reclamation activities.

There are no known operations of the existing Hardee Power Station or proposed Hardee Unit 3 facilities that are anticipated to impact ambient concentrations of arsenic or gross alpha in the surficial aquifer. The proposed development and operation of the Hardee Unit 3 facilities are not anticipated to increase the mobilization of potential offsite contamination in the surficial aquifer. No continuous withdrawals are planned from the surficial aquifer. Dewatering during construction will be of limited duration and scope and should not affect offsite areas.

Groundwater quality trends noted for arsenic and gross alpha in the surficial aquifer are not anticipated to impact the potable water supply that is obtained from the production wells that are completed in the Floridan aquifer. The laterally extensive upper and lower confining units that are present at the site act to retard the vertical movement of groundwater between the surficial, intermediate, and Floridan aquifers. As indicated in Section 2.3.2.1.4 of the SCA, recharge to the intermediate and Floridan aquifers is characterized as very low and estimated at less than 2 inches per year.

Groundwater monitoring will continue to be conducted on a periodic basis for the existing well locations, including the analysis of arsenic and gross alpha for samples collected from Well HPS-1. Groundwater monitoring locations proposed for Hardee Unit 3 include two upgradient and two downgradient wells completed in the surficial aquifer to characterize potential water quality impacts from operation of the planned facilities. Arsenic and gross alpha are included in the list of analytical parameters for the proposed groundwater monitoring plan.

Review of the laboratory reports of analyses prepared by Pace Incorporated for the collected groundwater samples indicated that Table FDEP.SWD-10 incorrectly summarized

the results reported for arsenic during the period from October 1991 to March 1992. The attached table presents the revisions as shaded areas to highlight the modifications. The method detection limit for arsenic during the period from October 1991 to March 1992 was reported at 50 micrograms per liter ($\mu\text{g/L}$). The method detection level reported for groundwater samples collected during the period from April 1992 to July 1993 ranged from 4 to 10 $\mu\text{g/L}$. Although the concentration of arsenic at Well HPS-1 exceeds that reported for the balance of the monitor wells at the site, it appears that the concentration at this location has remained relatively stable during the period of record. It is noted that the detected concentrations of arsenic reported for the existing groundwater monitoring network have remained below the drinking water standard of 50 $\mu\text{g/L}$.

Therefore, the proposed monitoring program is considered to be appropriate and will address the reviewer's concerns about groundwater quality trends. Continuation of groundwater monitoring at existing Hardee Power Station facilities will provide supplemental data to further characterize the occurrence of arsenic and gross alpha at Well HPS-1. Implementation of the monitoring program proposed for the Hardee Unit 3 facilities will provide data to characterize background conditions and potential impacts from the detention pond and operations at the power block. The groundwater monitoring program for the proposed Hardee Unit 3 facilities includes laboratory analysis for the parameters currently being conducted for the Hardee Power Station existing facilities, including arsenic and gross alpha.

FDEP.SWD-6

Comment: FDEP.SWD.11: Response acknowledged. Once final design of the Wastewater Collection and Treatment System has been finalized the sampling points for wastestream analyses will then be discussed.

Response: Comment acknowledged.

FDEP.SWD-7

Comment: FDEP.SWD.12: Response acknowledged. Sampling of the wastestreams may be accomplished in accordance with the NPDES permit. However, it should be noted that this sampling is required in order to determine the appropriate ground water monitoring

parameters in the ground water monitoring system. Therefore, parameters not verified to be absent from the collective wastewater stream may be required in the Site Certification.

Response: Comment acknowledged.

FDEP.SWD-8

Comment: FDEP.SWD.13: Insufficient response. The 2-D finite element model should be identified by title. It is my understanding that the input and output files are not available at this time. Further comment in this regard is dependent upon the identification of the model.

Response: As noted in the earlier response, the 2-D finite element modeling results were those developed by Stone & Webster for the 1989 SCA. Stone & Webster was contacted regarding this matter and is currently researching its archives to obtain the necessary documentation. The information, expected during the week of October 17, will be forwarded to FDEP under separate cover as soon as it becomes available.

FDEP.SWD-9

Comment: FDEP.SWD.14: Response acknowledged. The CompQAP will include a provision for measuring static ground water levels in the monitoring wells prior to purging.

Response: Comment acknowledged.

FDEP.SWD-10

Comment: FDEP.SWD.15: Insufficient response. The water quality analysis parameters should be updated. Specific parameters may be deleted dependent upon wastestream analysis results as well as four consecutive quarters of downward trending or (non-trending) water quality results.

Response: The proposed groundwater monitoring parameters for the Hardee Unit 3 facility presented in Appendix 10.5.2 are based on the existing groundwater monitoring requirements at the Hardee Power Station. SECI believes these parameters to be sufficient since a baseline water quality monitoring program has been carried out previously at the Hardee Power Station site. These baseline groundwater quality data should be sufficient to establish groundwater quality conditions at the proposed Hardee Unit 3 site. The situation at the Hardee Power Station is in contrast to the development of greenfield sites where there is no existing groundwater monitoring baseline data available.

FDEP.SWD-11

Comment: I have found Seminole Electric Cooperative's (SECI) sufficiency response to be adequate with regards to surface water concerns. It is proposed that SECI and the TECO Polk Power Station (TPS) shall share a common outfall from the cooling reservoir to Payne Creek as described in the NPDES permit application (Appendix 10.1.2 of the SCA). Will the NPDES permits for the two facilities be identical?

The current NPDES permit (FL0041751) for the cooling reservoir outfall is issued to TPS and requires monitoring for a variety of parameters at the point of discharge during a discharge event. In the event that there is a discharge, the results of these analyses must be submitted to the Southwest District for review.

Response: SECI has applied for a separate NPDES permit for its new unit, for discharges via the existing outfall from the cooling reservoir. SECI expects that its permit will be identical in substantive provisions to the TPS units, particularly as to discharges and effluent limitations at the outfall from the reservoir. Since the TPS and SECI units will be comparable in design and operation, but will be totally separate units, consistent permit conditions would be appropriate. SECI will submit any discharge monitoring reports to FDEP as required under the final permit conditions.

FDEP.SWD-12

Comment: FDEP.SWD-1, page FDEP.SWD-1: The response indicates that applicant will design and operate the WWTP in compliance with the "substantive requirements of Chapter 17-600 and -601, F.A.C." "substantive" means to me that they may comply with the spirit but not necessarily the letter of the rules. This is not adequate. They must comply with all the technical requirements, and not only of Chapter 62(17)-600 and 601, but also any parts of 604, 610, 640, and 699 which may apply to their design and operation.

Response: SECI concurs with the comment in that SECI will comply with the technical requirements of the Department's rules that apply to the new domestic wastewater treatment facility. It will be designed, constructed, and operated in accordance with the applicable non-procedural rules and technical criteria of the Department and the final conditions of certification. While a separate permit approval is not required to be obtained under the certification process, this compliance will be demonstrated by the submittal of appropriate information and design details at the time this facility is designed. This will occur after certification of the project is obtained. SECI therefore will work with the Department to develop appropriate conditions of certification for this submittal to ensure that the Department receives the information it requires. SECI understands such an approach has already been taken with recently certified power plant facilities.

FDEP.SWD-13

Comment: FDEP.SWD-2, page FDEP.SWD-1: My previous comment still stands. I will use the FDEP site certification language as a starting model and provide a draft to Tallahassee for this project as the minimum acceptable requirements for the construction and operation of the wastewater treatment facility.

Response: Comment acknowledged.

FDEP.SWD-14

Comment: FDEP.SWD-6, page FDEP.SWD-3, paragraph 1: I concur with the bulk of the SECI reply. However, submission of the construction permit application form, when the time to build arrives, may be appropriate as the simplest way of conveying information since all of the technical information normally contained on the form will be required in one way or another. A separate permit to construct and to operate will not be issued. That authority is implicit in the site certification approval. But separate department approval of design, placement into service, and operating procedures is required unless all that is accomplished prior to site certification approval. Finally, of high importance to the department is inclusion of the requirement of Florida Statute 403.511(5)(a) which imposes new or changed rule requirements on the construction or operation of a WWTP as a part of a power plant facility. This is especially important with the rule changes imminent in Chapters 62-610, 62-620, 62-640, F.A.C.

Response: SECI acknowledges this comment. SECI will comply with the Department's applicable substantive technical requirements for such facilities, as indicated in the response to FDEP.SWD-12 above. To the extent later adopted standards apply to the facility under Section 403.511(5)(a), F.S., they will be compiled with as well.

FDEP.SWD-15

Comment: FDEP.SWD-6, page FDEP.SWD-4, paragraph 2: I concur that nitrate monitoring will very likely not be a monitoring requirement in the effluent from the WWTP. The decision to include it or not in the groundwater monitoring rests with the Technical Support Division personnel, however, I believe it premature to make a statement that nitrates "will not have a measurable impact on the water quality of the . . . adjacent ground water" until sufficient monitoring is conducted to assure that is true.

Response: Comment acknowledged.

FDEP.SWD-16

Comment: Responses to sufficiency questions have adequately addressed issues concerning wetland mitigation design, hydrology, maintenance and responsibility for meeting success criteria. Conditions of Certification should be tailored to ensure SECI will adhere to

established BMP's during construction and that they will properly execute their proposed mitigation plan. No further sufficiency comments are offered at this time.

Response: Comment acknowledged.

FDEP.SWD-17

Comment: The Solid Waste section does not have any comments on this submittal, as they will not be disposing solid wastes on-site.

Response: Comment acknowledged.

FDEP.SWD-18

Comment: This program did not have any comments.

Response: Comment acknowledged.

Table FDEP.SWD-10. (REVISED) Summary of Selected Groundwater Monitoring Results Reported for Well HPS-1.

Parameter	Standard	Sampling Event												
		7/93	1/93	10/92	9/92	7/92	6/92	5/92	4/92	3/92	1/92	12/91	11/91	10/91
Arsenic ($\mu\text{g/L}$)	50	15	15	16	16	20	14	16	<10	<50	<50	<50	<50	<50
Chromium (mg/L)	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.10	0.42	0.16
Lead ($\mu\text{g/L}$)	15	<5	<5	<5	<5	<5	<5	<5	<5	<5	11	<5	36	14
Gross Alpha, total (pCi/L)	15	12.8	12	20	25	19	23.2	13.2	13.2	104	350	756	424	884
Gross Alpha, dissolved (pCi/L)	N/A	11.4	4	13	14.2	14.3	15.4	7.5	7.5	6.4	3.5	--	--	--

SWFWMD-1

Comment: 1. Grading details for the proposed mitigation area are needed. Seminole Electric Cooperative, Inc. should be advised that mitigation credit can only be granted for the area below the seasonal high water level (SHWL) elevation.

Response: Detailed grading plans have been prepared and are depicted in the attached revised wetland mitigation plan (see Figure 5). The entire mitigation area is at or below the seasonal high water level elevation.

SWFWMD-2

Comment: Based upon the presence of nuisance and upland species in the mitigation area, the existing ground cover will not be acceptable as part of the mitigation proposal. Mulching and/or planting details are needed for the mitigation area. Details should include plan and cross-sectional views showing limits of each distinct zone in reference to proposed control elevations, mulching, proposed plants (species, sizes, densities and relative composition) within each zone, proposed water elevations (SHWL and NP), bottom elevations, and slopes.

Response: The wetland mitigation plan has been revised to include the information requested above. The revised plan is attached.

SWFWMD-3

Comment: A detailed planview of the mitigation area is needed. Details should include views showing limits of the each distinct zone in reference to proposed control elevations, proposed plantings (species, sizes, densities and relative composition) within each zone, and mulching details.

Response: A revised planview of the mitigation area has been prepared and is included as Figure 7 in the attached revised wetland mitigation plan.

Memorandum

Florida Department of Environmental Protection

TO: Richard Donelan
John Brown
Al Rushanan
Trudie Bell
Raoul Clark
Cheri Albin
Mike Hickey

From: Steve Palmer 
Siting Coordination Office

Date: August 20, 1994

SUBJECT: Seminole Electric Cooperative Incorporated Hardee Unit 3 (PA89-25SA)

Attached is the Seminole Electric Cooperative Incorporated (SECI), Site Certification Application insufficiency response for the Hardee Unit 3 electric power generation facility. Review of the response for sufficiency should begin as of this date with comments due to the Siting Coordination Office on November 15, 1994.

If you have any questions, please call me or Buck Oven at 904/ 487-0472.

attachment--

cc: Buck Oven



United States Department of the Interior

FISH AND WILDLIFE SERVICE
1875 Century Boulevard
Atlanta, Georgia 30345

RECEIVED

JUL 11 1994

Bureau of
Air Regulation

IN REPLY REFER TO:

July 1, 1994

Mr. Clair H. Fancy
Chief, Bureau of Air Regulation
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399

Dear Mr. Fancy:

We have reviewed the Prevention of Significant Deterioration (PSD) permit application and the Site Certification Application for Seminole Electric Cooperative Incorporated's (SECI) proposed 440 MW combined cycle gas-fired power plant. The proposed project, Hardee Unit 3, would be located on the existing Hardee Power Station site, in Hardee and Polk Counties, 130 km southeast of Chassahowitzka Wilderness Area (WA), a Class I air quality area, administered by the Fish and Wildlife Service (Service). The proposed project would be a significant emitter of nitrogen oxides (NO_x), sulfur dioxide (SO_2), particulate matter (PM/PM_{10}), carbon monoxide (CO), volatile organic compounds (VOC), and sulfuric acid mist (H_2SO_4). The facility is also subject to PSD regulations for beryllium and inorganic arsenic.

Best Available Control Technology Analysis

We have reviewed the Best Available Control Technology (BACT) analysis and are satisfied that the analysis is complete. We believe either low NO_x combustors or selective catalytic reduction (SCR) represents BACT for gas-fired cogeneration turbines. We support industry and manufacturer efforts to develop technology which approaches control levels achieved by add-on controls. Such pollution control efforts are advantageous provided similar reductions in pollution can be achieved. We agree that 15 ppm represents a BACT limit which manufacturers are currently comfortable guaranteeing to their customers. We understand that some manufacturers are hoping to design combustors which will achieve even lower rates to further approach the rates achieved by SCR. Earlier this year, we reviewed an application for turbines at Tampa Electric Company's (TECO) Mulberry facility. BACT for TECO's turbines was the use of dry-low NO_x combustors to achieve 9 ppm. Therefore, while we do not object to a BACT emission level of 15 ppm NO_x , we suggest

SECI be required to meet the lowest emission rate that is demonstrated as being achievable over a reasonable amount of time. This will help to verify a true BACT limit and may encourage manufacturers to guarantee emission rates lower than 15 ppm.

Since fuel oil will only be used as a backup fuel, we agree that water injection represents BACT for control of NO_x during fuel oil use; however, the Hartwell Energy Limited Partnership in Georgia is required to meet a 25 ppm NO_x emission limit when firing oil, using water injection. Therefore, we believe SECI should also be required to meet a 25 ppm NO_x emission limit.

We agree that low sulfur fuel (.05 percent sulfur content) represents BACT to minimize sulfur dioxide emissions. Likewise, we agree combustion control represents BACT for carbon monoxide. Note that Florida required the Auburndale Power Partners, LP, to meet 15 ppm for carbon monoxide emissions, using combustion control. Again, the lowest demonstrated emission limit should be set as BACT.

Air Quality Modeling Analysis

The air quality dispersion modeling analysis was performed correctly--ISCST2 modeling predicted violations of the Class I SO₂ increment; however, MESOPUFF II modeling predicted that SECI would not contribute significantly to the violations.

The visibility analysis performed with the EPA VISCREEN model indicates that there should be no impact of a coherent visible plume at Chassahowitzka WA.

Air Quality Related Values Analysis

SECI adequately addressed potential effects to Class I Air Quality Related Values, including vegetation, wildlife, and soils. However, in the discussion of effects to wildlife, SECI mentions that the concentrations of metals in plants are predicted to be much lower than Service recommended safety levels for wildlife; therefore, adverse effects to fish and wildlife are not expected. We would like to note that accumulation of some metals, particularly mercury, occurs primarily through the aquatic food chain, not through ingestion of terrestrial vegetation. Fish are known to accumulate mercury and pass on toxic amounts to fish-eating birds, mammals, and reptiles.

When we receive new information on air quality-sensitive receptors at Chassahowitzka WA, we will forward it to you for use by future PSD applicants.

Thank you for providing us the opportunity to comment on the proposed project. If you have questions, please call Ms. Ellen Porter of our Air Quality Branch in Denver at telephone number 303/969-2071.

Sincerely yours,



James W. Pulliam, Jr.
Regional Director

cc: S. Arif
C. Holladay
B. Owen
G. Kissel, SWDise
G. Harper, EPA
M. Opalinski, Sempra Electric
CHF/JB/PL

File Copy

Florida Department of
Environmental Protection

Memorandum

TO: Buck Oven, P.E. Administrator
FROM: *John Brown*
John Brown, P.E. Administrator
DATE: June 27, 1994

SUBJECT: Seminole Electric Cooperative Incorporated (SECI)
Hardee Unit 3 - PA 89-25SA, Mod 8035
PSD-FL-214

The Bureau of Air Regulation finds the above referenced application package insufficient. Based on our initial review of their proposal, we have determined that the following additional information is needed in order to process the application:

1. The application states that the Hardee Power Station was certified for 660 megawatts (MW) in 1990, of which 220 MW was certified for SECI. The application also states that the Hardee Unit 3 Project represents an expansion of the Hardee Power Station site from 220 MW to 440 MW, and the overall site expansion from 660 MW to 880 MW. Please explain why the applicant is seeking approval for 440 MW when 220 MW was already granted to SECI in 1990?
2. Please submit a detailed process flow diagram for the combined cycle unit showing the volumetric air flow rates for each stream when burning natural gas and fuel oil. Also, submit the same for simple cycle operation.
3. Please submit the manufacturer's design specification for the proposed Westinghouse Model 501F combustion turbine. This should include but not be limited to, submitting brochures describing the turbine, associated testing (pilot plant or field) and test methods utilized in determining preliminary laboratory data.
4. Please submit manufacturer's name, model number and maximum steam production rate for the Heat Recovery Steam Generator (HRSG).
5. What is the efficiency of the combustion turbine? Calculate η (refer to 40 CFR 60, Subpart GG) in kilojoules per watt hour, showing all the calculations.

6. Please provide more information on "steam for power augmentation". This should include but not be limited to, providing bench scale test results by Westinghouse, technical articles on the subject and actual field test results obtained on any combustion turbine worldwide. Also, provide names, addresses and telephone numbers of any owners or states that have either installed or permitted combustion turbines with power augmentation. Also, provide a comparative cost analysis if nitrogen injection is utilized to increase turbine power output rather than steam injection, and what effect will nitrogen injection have on exhaust emissions? Additionally, why can the generator capacity needed in the power augmentation mode not be included in the base load capacity of the combustion turbine?
7. Please describe the circumstances including the number of hours under which the turbine will be operated in simple cycle mode?
8. Please provide the names and addresses of all the manufacturers and suppliers that were contacted for budgetary quotations and engineering estimates in developing capital and annualized cost estimates for this project. Also, list other vendors that were contacted for quotations of the combustion turbine, and if any vendor was willing to provide a turbine in 1999 with a NO_x emissions limit guarantee of less than 15 ppmvd, corrected to ISO conditions and 15% O₂.
9. Please recalculate the cost effectiveness (\$/ton NO_x removed) by using 6 ppmvd as the emission limit for a natural gas-fired dry low NO_x combustor equipped with a selective catalytic reduction (SCR) system, and 12 ppmvd as the emission limit for distillate fuel oil. These emission limits are technologically feasible and have been attained by different facilities with SCR.
10. Does the applicant propose to do co-firing of natural gas and fuel oil in the combustion turbine? If so, how long will the co-firing last and provide details on how co-firing will be accomplished.
11. Please submit a detailed listing of all the continuous emission monitoring systems (CEMs) required for this project. This should include the type of the CEM (in-situ or extractive), the pollutant it will monitor, and any associated data acquisition system.

Buck Oven
Memorandum
June 27, 1994
Page Three

12. What kind of control and monitoring equipment do you propose to use for continuously recording power generation, fuel injection and the steam injection rates?
13. What is the estimated annual throughput and type of air pollution control for the fuel oil storage tank? What are the estimated emissions?
14. In Table 7-6 the value for the 3-Hour HSH is incorrectly given as 30.5 for the period 83040212. Based on the modeling output accompanying the application, the value should be 144 for the period 83032418. Please do a refined analysis for this period and update Table 7-7 with a 1983 value for the 3-Hour HSH.

If there are any questions on the above, please call Syed Arif (Engineering) or Cleve Holladay (Modeling) at 488-1344.

JB/SA/bjb

Memorandum

Florida Department of
Environmental Protection

TO: Martha Nebelsiek
Preston Lewis
Al Rushanan
Trudie Bell
Raoul Clark
Cheri Albin
Mike Hickey

RECEIVED

From: Steve Palmer 
Siting Coordination Office

JUN 03 1994

Bureau of
Air Regulation

Date: June 2, 1994

SUBJECT: Seminole Electric Cooperative Incorporated Hardee Unit 3 (PA89-25SA)

This is a reminder that the Seminole Electric Cooperative Incorporated (SECI), Site Certification Application (SCA) for the Hardee Unit 3 electric power generation facility was determined to be complete on May 23, 1994. Review of the SCA for sufficiency should be ongoing with comments due to the Siting Coordination Office on June 27, 1994. A meeting with SECI to discuss any problems or needs for further information has been scheduled for June 14, 1994 at 10:00 a.m. in room 272 of the Twin Towers Building. Please have all reviewers attend this meeting.

If you have any questions, please call me or Buck Oven at 904/ 487-0472.

cc: Buck Oven
Richard Donelan

Florida Department of
Environmental Protection

Memorandum

TO: Martha Nebelsiek
Preston Lewis
Al Rushanan
Trudie Bell
Raoul Clark
Cheri Albin
Mike Hickey

From: Steve Palmer 
Siting Coordination Office

Date: May 23, 1994

SUBJECT: Seminole Electric Cooperative Incorporated Hardee Unit 3 (PA89-25SA)

RECEIVED

MAY 24 1994

Bureau of
Air Regulation

The Seminole Electric Cooperative Incorporated (SECI), Site Certification Application (SCA) for the Hardee Unit 3 electric power generation facility was determined to be complete on May 23, 1994. Review of the SCA for sufficiency should begin as of this date with comments due to the Siting Coordination Office on June 27, 1994. A tentative schedule of events for this project is attached.

If you have any questions, please call me or Buck Oven at 904/ 487-0472.

attachment--

cc: Buck Oven
Richard Donelan

SEMINOLE ELECTRIC COOPERATIVE
HARDEE POWER STATION UNIT 3
PA _____

SCHEDULE OF DATES

<u>ACTION</u>	<u>DATE</u>
SCA filed	May 9, 1994
DEP requests assignment of Hearing Officer and provides list of agencies	May 16, 1994
DEP determines completeness	May 23, 1994
SECI distributes SCA	May 27, 1994
DEP distributes schedule of dates	May 31, 1994
Newspaper and FAW notice of SCA and PSD	June 8, 1994
Agencies file sufficiency recommendations with DEP	June 27, 1994
Newspaper and FAW notice of land use hearing	July 9, 1994
DEP determines sufficiency	July 15, 1994
Agencies submit preliminary statement of issues	July 29, 1994
Land use hearing held	August 22, 1994
SECI submits information for sufficiency	August 24, 1994
DEP final sufficiency review	Sept. 23, 1994
Land use hearing Recommended Order issued	Sept. 21, 1994
Agencies file final reports	October 27, 1994
SECI provides notice of variances and crossings	November 2, 1994
Siting Board issues Final Order for land use hearing	November 22, 1994
Deadline for agencies to become parties	December 8, 1994
DEP issues final report	January 3, 1995
Newspaper and FAW notice of certification hearing	January 21, 1995
Deadline for intervention	February 6, 1995
Certification hearing begins	March 8, 1995
Recommended Order issued	May 15, 1995
Siting Board's Final order	July 25, 1995



Lawton Chiles
Governor

Florida Department of Environmental Protection

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

Virginia B. Wetherell
Secretary

May 10, 1994

Ms. Jewell A. Harper, Chief
Air Enforcement Branch
U.S. EPA, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30308

Dear Ms. Harper:

RE: Seminole Electric Cooperative
Hardee Unit 3
Polk County, PSD-FL-214

The Department has received the above referenced PSD application package. Please review this package and forward your comments to the Department's Bureau of Air Regulation by June 10, 1994. The Bureau's FAX number is (904)922-6979.

If you have any questions, please contact Syed Arif or Cleve Holladay at (904)488-1344 or write to me at the above address.

Sincerely,

Patricia Adams

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

CHF/pa

Enclosures



Lawton Chiles
Governor

Florida Department of Environmental Protection

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

Virginia B. Wetherell
Secretary

May 10, 1994

Mr. John Bunyak, Chief
Policy, Planning and Permit Review Branch
National Park Service-Air Quality Division
P. O. Box 25287
Denver, CO 80225

Dear Mr. Bunyak:

RE: Seminole Electric Cooperative
Hardee Unit 3
Polk County, PSD-FL-214

The Department has received the above referenced PSD application package. Please review this package and forward your comments to the Department's Bureau of Air Regulation by June 10, 1994. The Bureau's FAX number is (904)922-6979.

If you have any questions, please contact Syed Arif or Cleve Holladay at (904)488-1344 or write to me at the above address.

Sincerely,

Patricia Adams

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

CHF/pa

Enclosures

HOPPING BOYD GREEN & SAMS

ATTORNEYS AND COUNSELORS

123 SOUTH CALHOUN STREET

POST OFFICE BOX 6526

TALLAHASSEE, FLORIDA 32314

(904) 222-7500

FAX (904) 224-8551

FAX (904) 681-2964

CARLOS ALVAREZ
JAMES S. ALVES
BRIAN H. BIBEAU
KATHLEEN BLIZZARD
ELIZABETH C. BOWMAN
WILLIAM L. BOYD, IV
RICHARD S. BRIGHTMAN
PETER C. CUNNINGHAM
RALPH A. DEMEO
THOMAS M. DEROSE
WILLIAM H. GREEN
WADE L. HOPPING
FRANK E. MATTHEWS
RICHARD D. MELSON
DAVID L. POWELL
WILLIAM D. PRESTON
CAROLYN S. RAEPPEL
GARY P. SAMS
ROBERT P. SMITH
CHERYL G. STUART

KRISTIN M. CONROY
C. ALLEN CULP, JR.
CONNIE C. DURRENCE
JONATHAN S. FOX
JAMES C. GOODLETT
GARY K. HUNTER, JR.
DALANA W. JOHNSON
JONATHAN T. JOHNSON
RICHARD W. MOORE
ANGELA R. MORRISON
MARIBEL N. NICHOLSON
GARY V. PERKO
KAREN M. PETERSON
MICHAEL P. PETROVICH
DOUGLAS S. ROBERTS
R. SCOTT RUTH
JULIE ROME STEINMEYER

OF COUNSEL
W. ROBERT FOXES

May 9, 1994

HAND DELIVERY

Patty Adams
Bureau of Air Regulation
Department of Environmental Protection
3600 Blair Stone Rd.
Tallahassee, Fla. 32399

RE: Seminole Electric Cooperative;
Application for Site Certification/PSD Permit Application

Dear Ms. Adams:

At the request of Buck Oven, I am sending you four copies of an application for power plant site certification (SCA) which has been filed with the Department today by Seminole Electric Cooperative. The application is for the 440 Mw Hardee Unit #3 at a site in Hardee County, Florida. The SCA contains, in Volume II, Appendix 10.1.5, the completed application for a prevention of significant deterioration (PSD) permit for the Project. Seminole has provided the Department with an application fee of \$72,500 for this project, which has been submitted to Buck Oven.

Please call either Buck Oven or myself should you have any questions on this matter.

Sincerely,



Douglas S. Roberts

Encls.

cc: Preston Lewis (w/o encls.)
Buck Oven (w/o encls.)

RECEIVED

MAY 9 1994

Bureau of
Air Regulation

HOPPING GREEN SAMS & SMITH

PROFESSIONAL ASSOCIATION

ATTORNEYS AND COUNSELORS

123 SOUTH CALHOUN STREET

POST OFFICE BOX 6526

TALLAHASSEE, FLORIDA 32314

(904) 222-7500

FAX (904) 224-8551

FAX (904) 425-3415

March 24, 1995

JAMES S. ALVES
BRIAN H. BIBEAU
KATHLEEN BLIZZARD
ELIZABETH C. BOWMAN
RICHARD S. BRIGHTMAN
PETER C. CUNNINGHAM
RALPH A. DEMEO
THOMAS M. DeROSE
WILLIAM H. GREEN
WADE L. HOPPING
FRANK E. MATTHEWS
RICHARD D. MELSON
DAVID L. POWELL
WILLIAM D. PRESTON
CAROLYN S. RAEPPEL
GARY P. SAMS
ROBERT P. SMITH
CHERYL G. STUART

KRISTIN M. CONROY
CONNIE C. DURRENCE
JONATHAN S. FOX
JAMES C. GOODLETT
GARY K. HUNTER, JR.
JONATHAN T. JOHNSON
ROBERT A. MANNING
ANGELA R. MORRISON
GARY V. PERKO
KAREN M. PETERSON
MICHAEL P. PETROVICH
DOUGLAS S. ROBERTS
LISA K. RUSHTON
R. SCOTT RUTH
JULIE R. STEINMEYER

OF COUNSEL
CARLOS ALVAREZ
W. ROBERT FAYES

RECEIVED

MAR 24 1995

Bureau of
Air Regulation

Mr. Al Linero
Bureau of Air Regulation
Department of Environmental Protection
Magnolia Courtyard
Tallahassee, FL 32399

RE: Seminole Electric Cooperative, Inc.;
Hardee Unit 3;
Comments on Proposed PSD Permit PSD-FL-214

Dear Mr. Linero:

On behalf of Seminole Electric Cooperative, Inc. (Seminole), I wish to offer the following comments on the Department's proposed prevention of significant deterioration (PSD) permit and the supporting preliminary BACT determination for Seminole's Hardee Unit 3 Project. These written comments supplement the oral and preliminary comments Seminole provided at our meeting on March 7, 1995. Attached to this letter is a marked-up copy of the proposed PSD permit and the preliminary determination with suggested changes. Several of these proposed changes are discussed below.

Steam Augmentation

As we explained in the recent meeting, Westinghouse is developing a dry low NOx combustor that will allow each CT to maintain its minimum output of 150 MW (and the entire unit to achieve 440 MW) during all ambient conditions without the use of steam augmentation. Therefore, Seminole no longer requests a different emission rate for NOx and other emissions for that condition. However, to accommodate the minimum power output throughout the range of ambient conditions, the combustor requires the use of more fuel, thus increasing the heat input rate for the CTs and the emissions of several pollutants. This increased heat input is reflected on the attached markup. The heat input for natural gas changes from 1,799 MMBtu/hr to 1,862 MMBtu/hr and for oil firing, from 1,972 MMBtu/hr to 1,965 MMBtu/hr.

Mr. Al Linero
March 24, 1995
Page 2

This change in gas turbine design maintains the proposed emission concentrations (in PPM, i.e., 15 PPM for NOx) in the proposed PSD permit, but because of the increased heat input, the emissions of several pollutants in pounds per hour and tons per year increase marginally. These emissions changes are also reflected in the enclosed revised emissions table under Specific Condition B.1., on page 6 of 13 of the proposed permit. Even with this minor increase in total emissions, Seminole's analysis indicates that the outcome of the air quality impact analysis will not significantly change and that all air quality standards will be maintained, and no PSD increments will be exceeded.

Fuel Bound Nitrogen

While Westinghouse has been able to eliminate the need for steam augmentation for the selected CTs, these combustion turbines will only be able to meet the proposed maximum nitrogen oxide emission rate of 42 ppm with a fuel oil containing up to 0.015% nitrogen. For fuel oil containing a greater level of nitrogen, Westinghouse and Seminole continue to request that an allowance for fuel bound nitrogen (FBN) be granted of up to an additional 12 ppm based upon a fuel with a maximum fuel bound nitrogen level of 0.03%. As previously explained to the Department, both orally and through a February 9, 1995 letter from Seminole to Bruce Mitchell, the new dry low NOx combustors are optimized to control nitrogen oxide formation while firing natural gas, the primary fuel, limiting control techniques for NOx formation during oil firing. This dual fuel combustor design makes it impossible for Westinghouse to achieve a thermal NOx level low enough that can accommodate a FBN of 12 ppm while staying within the proposed 42 ppm concentration during oil firing, regardless of fuel nitrogen content.

Like most recent CT projects with DLN combustors and dual fuel capability, the Hardee Unit 3 is being permitted before the combustor design is finalized, constructed and tested. Thus, the Department's permitting levels are well in advance of currently demonstrated technology. It may well be that when placed in operation in 1999, the Westinghouse DLN combustor will be able to achieve a NOx emission rate for all levels of FBN lower than the requested 54 ppm maximum. Also, by 1999, fuel oil with a maximum FBN content of 0.015% may be readily available without an unnecessary extra cost burden to Seminole's consumers. But at this time, those assurances cannot be given by Westinghouse or the fuel suppliers. Without the requested FBN allowance of up to 12 ppm, based upon measured FBN levels, Seminole will be forced to forego oil firing in order to assure compliance with the permit limits or be forced to pay a premium for guaranteed FBN levels of 0.015% from the fuel oil suppliers. However, Seminole's analysis, based upon

Mr. Al Linero
March 24, 1995
Page 3

surveys of fuel oil suppliers, indicates that such a premium is not BACT when considering the required BACT factors.

The Department's proposed conditions allow the Department to seek to revise the permitted NOx emission rates and levels based upon actual levels achieved during initial operation of the new unit. Seminole is willing to accept that condition. However, Seminole restates its request for a FBN allowance of up to 12 ppm for fuel oil with a maximum FBN of 0.03%.

Other Permit Provisions

Most of the other comments are reflected in the handwritten comments on the attached permit package which the Department issued. Several items warrant particular discussion as follows.

The identified changes in emission rates and levels throughout these marked-up documents are due to the change in the fuel usage and heat input rate as explained above.

At page 6 of 13 of the proposed PSD permit, footnote A to Specific Condition B.1. has been revised to reflect that the 1-hour averaging time for emissions is applied during required compliance testing.

At page 8 of 13, in Specific Condition 6., Seminole requests that approved periods of excess emissions include periods of switching between fuels (natural gas and fuel oil). Experience with CTs suggests that there can be short spikes in emissions when switching fuels and engaging different emission control systems, such as water injection to control NOx. If periods of excess emissions for fuel switching are not authorized, the alternative would be to shutdown the CT and restart it on the second fuel, which would result in even greater total emissions during that shutdown and startup process. Thus, from an emissions standpoint, the requested authorization would result in lower emissions. The Department's excess emissions rules, 62-210.700(5), FAC, authorize the Department to approve periods of excess emissions in such a circumstance based upon "operational variations in types of industrial equipment operations. . .to provide reasonable and practical regulatory controls consistent with the public interest."

At page 9 of 13 in the permit, Seminole proposes revising Specific Condition C.1.i. to allow submittal of natural gas vendor data as a custom fuel sampling procedure for monitoring the sulfur content of natural gas and fuel oil. We understand USEPA must approve such a procedure, but recognizing it in the permit as a possibility would avoid any future need for a permit modification.

Mr. Al Linero
March 24, 1995
Page 4

At page 9 of 13 in the permit, Seminole proposes revising Specific Condition C.1.j. to allow the use of other EPA approved test methods for compliance tests on CTs without having to seek approval as an alternate test method or a permit modification.

We appreciate the opportunity to provide these comments. Should you or your staff have any questions concerning these comments, please do not hesitate to contact either Ken Bachor at Seminole at 813/963-0994 or me. Following your review of these comments, we also request a meeting with your staff and Clair Fancy to discuss any and all outstanding issues in an effort to resolve these issues prior to the scheduled certification hearing on April 17th. I will call you to set up this meeting.

Sincerely,

A handwritten signature in cursive script, appearing to read "Doug S. Roberts".

Douglas S. Roberts

Encls.

cc: Said Arif, BAR
Steve Palmer, Siting Coord.
Richard Donelan, OGC

Memorandum

Florida Department of
Environmental Protection

TO: Richard Donelan
Preston Lewis
Tom Rogers
Phil Coram
Al Rushanan
Al Bishop
Don Kell
Trudie Bell
Mary-Jean Yon
Vickie Sharpe
Mike Hickey

RECEIVED

JAN 28 1994

Bureau of
Air Regulation

From: Steve Palmer *SP*
Siting Coordination Office

Date: January 26, 1994

SUBJECT: Seminole Electric Cooperative Incorporated
Hardee Unit 3

Comments on the revised plan of study for Seminole Electric Cooperative Incorporated's Hardee Unit 3 are due to the Siting Coordination Office on February 21, 1994. If you have any questions, please call me at 487-0472.

cc: Buck Oven

Memorandum

Florida Department of
Environmental Protection

TO: Steve Palmer, P.E.
Power Plant Siting Office

FROM: Richard M. Harvey, Director
Division of Water Facilities

DATE: December 15, 1993

SUBJECT: SECI/HARDEE POWER STATION UNIT 3

I understand Seminole Electric seeks a binding agreement to limit the scope of information and methodology the Department may use in processing the referenced Siting Certification Application. This Division vigorously opposes such preemptive agreements for this or any other project.

Binding agreements complicate the completeness, sufficiency, and condition-drafting phases of the siting process. It is impossible to predict all the types of information and methodology that will be needed once the applicant chooses from among project alternatives.

This project in particular involves myriad interconnected water quality and quantity issues which may affect critical water bodies such as Payne Creek, the Peace River, and the Floridan Aquifer. Since alternative sources of cooling water include reuse of reclaimed water (domestic and industrial), water cropping, ground water, and stormwater from nearby mine sites, it is not clear what information will ultimately be needed to determine reasonable assurance for clean water. The air, biological, land and solid waste issues, and the proximity of two large ongoing projects (TECO/Polk and FPC/Polk power plants), add greatly to the complexity.

We must be able to determine whether the proposed project will comply with the rules of the department without having our hands tied by a binding up-front agreement. Complete information, obtained through free inquiry under statutory and rule provisions, is needed for the facilities that will finally be built.

In the event that a binding agreement is executed, we insist that it stipulate a thorough environmental assessment of all possible alternatives.

If you have any questions or need further information, please call Geof Mansfield or Al Rushanan at 487-1855.

RMH/aVr

cc: Richard Donelan
Rick Garrity
Buck Oven

Florida Department of
Environmental Protection

Memorandum

TO: Richard Donelan
Preston Lewis
Tom Rogers
Phil Coram
Al Rushanan
Al Bishop
Trudie Bell
Mary-Jean Yon
Joe Bakker

FROM: Steve Palmer *SAP*
Siting Coordination Office

DATE: October 27, 1993

SUBJECT: Seminole Electric Cooperative Incorporated
Hardee Unit 3, Proposed Plan of Study

RECEIVED

OCT 28 1993

Division of Air
Resources Management

Attached is a copy of the proposed Plan of Study for Hardee Unit 3 submitted by Seminole Electric Cooperative Incorporated (SECI) on October 26, 1993. SECI plans to meet with Department staff regarding this plan of study in December, 1993.

We will be having an in-house meeting to discuss this proposal at 10:00 on November 15, 1993 in room 272 of the Twin Towers Building. If you or your representative cannot attend this meeting, please call me.

attachment---

cc: Pam McVety
Buck Oven
file



Lawton Chiles
Governor

Florida Department of Environmental Protection

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

Virginia B. Wetherell
Secretary

October 26, 1993

Mr. M.P. Opalinski
Manager of Environmental Affairs
Seminole Electric Cooperative
16313 North Dale Mabry Highway
Tampa, Florida 33688-2000

Dear Mr. Opalinski:

In regards to the Seminole Electric Cooperative, Inc. proposed Hardee Unit 3 construction, I have reviewed your request to use existing ambient monitoring data to fulfill the PSD preconstruction monitoring requirements. In view of the existing monitoring data in the area of the proposed facility and given that this area is similar in nature to the areas where the existing data has been taken, the use of these data may be considered adequate for satisfying the preconstruction monitoring requirements. In using these data, you must show that the data adequately represents existing air quality near the proposed site. This justification should be contained in your air quality analysis report of the PSD application.

The acceptance by the Department to use existing monitoring data to meet the preconstruction monitoring requirements does not preclude the Department from requiring post construction monitoring for some pollutants. If you have any questions or need further clarification please call me at 904/488-0114, or write to me at the letterhead address.

Sincerely,

A handwritten signature in cursive script that reads "Thomas G. Rogers".

Thomas G. Rogers
Administrator

TGR/tr

cc: H. Oven
P. Lewis



Jeb Bush
Governor

Department of Environmental Protection

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

David B. Struhs
Secretary

July 9, 2001

Mr. Mike Roddy
Senior Environmental Engineer
Seminole Electric Cooperative, Inc.
Post Office Box 272000
Tampa, FL 33688-2000

RE: **Payne Creek Generating Station**
Air Permit No. PSD-FL-214A/PA-89-25SA

RECEIVED

JUL 16 2001

BUREAU OF AIR REGULATION Facility#
0490340

Dear Mr. Roddy:

Thank you for your submission of the initial emissions testing protocol for the Payne Creek combustion turbines. The original copy was sent by mail and received by this office May 23, 2001. Due to missing material in the original submission, the corrected protocol was e-mailed to this office on June 15, 2001. For your reference, a copy of the e-mailed document is attached. The Department has reviewed and accepted this protocol with the following comments.

The allowable error figures stated on page 9 are not clearly worded and should be interpreted as per Reference Method 7E (as $\pm$ the applicable percentage of span). The calibration gasses stated on page 10 should include a zero and span gas as well as calibration gasses at $\sim 30\%$ and $\sim 60\%$ of span, as per Reference Method 10. A listing of test personnel contacts is missing and should be sent prior to testing.

Fuel oil sampling was not addressed in the protocol. The samples shall be obtained during the testing period for each turbine, or for one turbine if fuel is drawn from a common source. The oil sample(s) shall be analyzed for heating value (for accurate heat input calculation), sulfur, and metals as required by permit. Fuel bound nitrogen shall be determined if an allowance is required for NO_x emissions. Sample(s) shall be obtained at a point representative of fuel oil entering the turbine combustors. After discussing the matter with the PSD section in Tallahassee, it appears that the analytical procedure specified for arsenic may be in error. An EPA approved analytical method for arsenic determination is Method 7061A, from EPA publication SW-846, entitled *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*. Heating value and sulfur content of pipeline natural gas may be provided by analysis of samples representative of that delivered to Payne Creek reasonably close to the date of initial compliance testing. This analysis may be obtained from the supplier of the natural gas. Additionally, all fuel oil and natural gas metering devices shall be calibrated according to manufacturer's specifications. A record of calibration data and correction factors shall be submitted with the emissions test report.

Should you have questions regarding this matter you may contact me at 813-744-6100 Ext. 113.

Yours truly,

William E. Schroeder
Environmental Engineer
Southwest District

WES/ws
Attachment
cc: W. Proses
A. Linero
J. Kahn

"More Protection, Less Process"

Printed on recycled paper.

PERFORMANCE TEST PROTOCOL
Initial Certification Test

Combined Cycle Units 1 and 2

for

Seminole Electric Cooperative Inc.
Payne Creek Generating Station
Bowling Green, Florida

Prepared By:

RMB Consulting and Research, Inc.
5104 Bur Oak Circle
Raleigh, North Carolina 27612
(919) 510-5102

CONTENTS

SECTION 1.0 – INTRODUCTION.....	1
SECTION 2.0 – FACILITY DESCRIPTION.....	2
2.1 Facility Location.....	2
2.2 Unit Description	2
2.3 Reference Methods Sampling Location	3
SECTION 3.0 – REFERENCE METHOD COMPLIANCE TESTING.....	3
3.1 Sample and Velocity Traverse (RM 1).....	3
3.2 Determination of Non-Sulfuric Acid Particulate Matter and Analysis (RM 5B).....	3
3.3 Sulfuric Acid (H ₂ SO ₄) Mist Emissions (RM 8).....	6
3.4 Visible Emissions (RM 9)	7
3.5 Volatile Organic Compounds (RM 18)	7
3.6 Instrumental Reference Methods – NO _x (RM 7E) and CO (RM 10)	8
3.7 Instrumental Reference Methods – O ₂ and CO ₂ (RM 3A)	10
3.8 Stack Gas Velocity and Volumetric Flow Rate (RM 2) and Moisture Content (RM 4)	10
SECTION 4.0 – COMPLIANCE TESTING FOR OTHER POLLUTANTS.....	10
4.1 Sulfur Dioxide (SO ₂)	11
4.2 Beryllium and Arsenic.....	11
SECTION 5.0 – TEST EQUIPMENT CALIBRATIONS.....	11
SECTION 6.0 – TEST REPORTS	11
APPENDIX A – PERFORMANCE TEST CONTACT LIST	A-1

List of Tables

SECTION 1.0

TABLE 1. Combined Cycle Turbine Units Maximum Allowable Emission Limitations	2

SECTION 3.6

TABLE 2. Anticipated Analyzer Spans and Calibration Gas Values (Natural Gas)	9
TABLE 3. Anticipated Analyzer Spans and Calibration Gas Values (No. 2 Fuel Oil)	9

1.0 INTRODUCTION

Seminole Electric Cooperative Inc. (Seminole) Payne Creek Generating Station (Payne Creek) is subject to the emissions testing and monitoring requirements as set forth by the Environmental Protection Agency (EPA) in Title 40 of the Code of Federal Regulations (CFR) Parts 60 and 75.

The purpose of the test program as outlined in this performance test protocol is to determine compliance with specific air emission permit limits issued by the Florida Department of Environmental Protection (FDEP) Permit No. PSD-FL-214A/PA-89-25SA. This protocol outlines the procedures to be followed, the test methods to be used, and any differences between the test methods proposed in this document as opposed to the test methods suggested in the referenced air permit.

Testing will be performed on the respective outlet stack (downstream of the Heat Recovery Steam Generator (HRSG)) of the two (2) combined cycle combustion turbine units located at the facility. Testing will be conducted at 95-100% of full load (rated heat input) when firing natural gas as well as No. 2 fuel oil. The testing is required to demonstrate compliance with a total NO_x emissions limit on each unit from Payne Creek, when burning natural gas, of 12 parts per million (ppm) by volume corrected to 15 percent oxygen (O₂) as calculated on a dry basis and when burning No. 2 fuel oil, 42 ppm by volume corrected to fifteen percent oxygen (O₂) as calculated on a dry basis. The testing will be performed in accordance with the requirements as stated in Specific Condition Nos. C.1.a. through C.1.j. of the referenced air permit. In addition to NO_x, emissions of carbon monoxide (CO), particulate matter (PM), sulfur dioxide (SO₂), volatile organic compounds (VOC), sulfuric acid (H₂SO₄) mist, beryllium, arsenic, and visible emissions (VE) will also be determined. These pollutants and their respective emission limitations are described in Table 1. Table 1 also describes the applicable test methods to be used for each pollutant as well as the suggested run times of each reference method.

NOTE: Some emission limitation values and testing requirements differ for select pollutants during the initial certification as opposed to subsequent annual compliance testing. This performance test protocol only addresses the emission limitations and testing requirements applicable to the initial certification as required by the referenced air permit.

The tests for each pollutant will be conducted simultaneously if practicable and where appropriate. Testing is currently scheduled for November 2001, and is subject to change depending on the construction schedule and turbine operating load availability.

**Table 1. Combined Cycle Turbine Units Maximum Allowable Emission Limitations
(Initial Certification Only)**

POLLUTANT/ TEST METHOD ¹ / (RUN LENGTH) ²	FUEL	CONCENTRATION	TURBINE EMISSION RATE ³ (lb/hr)	FACILITY EMISSION RATE ⁴ (TPY)	FACILITY EMISSION RATE ⁵ (TPY)
NO _x RM 7E (1-hour)	Gas	12 ppmvd @ 15% O ₂	68	596	906
	Oil	42 ppmvd @ 15% O ₂	336	504	
CO RM 10 (1-hour)	Gas	20 ppmvd	71	622	618
	Oil	25 ppmvd	91	136	
PM/PM ₁₀ RM 5B (3-hours)	Gas		7	65	147
	Oil		67	100	
H ₂ SO ₄ Mist RM 8 (1-hour)	Gas		1	6	39
	Oil		22	34	
VOC RM 18 (1-hour)	Gas	5 ppmvd	10	88	99
	Oil	10 ppmvd	21	31	
VE RM 9 (1-hour)	Gas & Oil	≤ 10% opacity			
SO ₂ ASTM Fuel Analysis	Gas		5	47	182
	Oil	0.05% by weight	101	152	
Beryllium SWC Fuel Analysis	Oil		0.0049	0.007	0.007
Arsenic SWC Fuel Analysis	Oil		0.0097	0.014	0.014

¹Flow, O₂/CO₂, and moisture determinations will be made simultaneously where applicable.

²All RM test runs will be performed in triplicate (i.e., three (3) RM runs per pollutant).

³Emission rate in lb/hr/turbine will be determined during initial performance test.

⁴The annual emission limitations for natural gas are based upon two CTs operating at full load for 8,760 hours per year per turbine. The annual emission limitations for No. 2 fuel oil are based upon two CTs operating at full load for 1,500 hours per year per turbine.

⁵If both natural gas and No. 2 fuel oil are used at the facility during the same year.

2.0 FACILITY DESCRIPTION

2.1 Facility Location

Payne Creek Generating Station (ORIS Code 007380) is located at 6697 County Road 663, Bowling Green, Florida, Zip Code 33834. The two combined cycle turbine units are presently being constructed and are expected to be completed on or before September 15, 2001. The units are identical Westinghouse Model 501F (D) combined cycle power plants consisting of two (2) 157.5 MW (nominal) combustion turbines (Units CT1 and CT2), two (2) heat recovery steam generators (HRSGs), and a 173 MW (nominal) steam turbine generator for a total facility-wide nominal rating of 488 MW at base load. Each unit will combust pipeline natural gas (primary) and No. 2 low sulfur fuel oil (back-up only) with a sulfur content limit not to exceed 0.05 percent by weight.

2.2 Unit Description

Each CT at Payne Creek will be dispatched as a gas-fired base load unit. Each unit will be equipped with dry low-NO_x (DLN) combustors and a Selective Catalytic Reduction (SCR)

system for NO_x control when firing natural gas (primary fuel) and wet (water) injection for NO_x control when firing No. 2 fuel oil (backup fuel). Also, each CT will be equipped with a carbon monoxide oxidation catalyst control system. The units will not be equipped with add-on emission controls for particulate or any other of the remaining pollutants. Flue gases from each unit exhaust through separate 18 foot inside diameter circular stacks that have an exit height of 175 feet above ground level.

2.3 Reference Methods Sampling Location

The emission sampling location for both units consist of four (4) equally spaced ports located on each units' 175 foot stack at approximately 157 feet above grade. The stack inside diameter (ID) for both stacks will be 12 feet. All reference method sampling ports will be standard 6-inch flanges. The four reference method sampling port locations will meet the EPA Reference Method 1 (RM 1) criteria for upstream and downstream distances.

3.0 REFERENCE METHOD COMPLIANCE TESTING

This section includes a brief discussion of the test methods that will be used for sampling and analysis at the Payne Creek facility. Any deviations from standard procedures are clearly noted below. Unless stated otherwise, all stack sampling will be performed in strict accordance with the applicable test methods as prescribed in the referenced air permit. Since both CT's are of similar engineering design, further discussion and reference to an individual unit or stack implies reference to both units. Testing will be conducted in triplicate on each unit and each fuel separately (i.e., three (3) test runs per unit per fuel per pollutant). In order to document the tested process conditions, the combustion turbine operator will generate a log of one-minute data, for each of the test runs, of the following CT parameters:

- CT Megawatts
- Fuel Flow
- CT Inlet Temperature
- CT Exhaust Temperature
- IGV Demand
- Combustor Shell Pressure
- Combustor Shell Temperature
- Applicable pollutant control process data
- Applicable HRSG process data

3.1 Sample and Velocity Traverse (RM 1)

The location of the traverse points used to determine the velocity of the stack gas within the circular stack is based on the relation of the stack diameter to the upstream and downstream distances to the nearest flue gas disturbances. The number of traverse points used for the isokinetic sampling techniques (Methods 5B and 8) will be determined from Figure 1-1 of Method 1, Appendix A, 40 CFR Part 60.

3.2 Determination of Non-Sulfuric Acid Particulate Matter and Analysis (RM 5B)

The sampling and analytical procedures used for particulate matter (PM) sampling follow the procedures outlined in Method 5B, Appendix A, 40 CFR Part 60. The PM emissions, which exclude any sulfuric acid (H₂SO₄) particulate matter present, will be based upon the mass

collected on the out-of-stack filter and acetone rinse of the probe nozzle, probe liner, and front-half of the filter holder. In accordance with Specific Condition No. C.1.a. of the referenced air permit, PM sampling will be performed under the premise that all particulate matter will be assumed to have an aerodynamic diameter of less than ten microns (PM_{10}).

Prior to leaving the laboratory, glass fiber filters will be numbered for identification, heated for 2 to 3 hours at $320 \pm 10^\circ\text{F}$, desiccated for 2 hours, and pre-weighed to the nearest 0.1 mg. Replicated weighings will be conducted at least 6 hours apart until consecutive measurements agree to within 0.5 mg. Silica gel (indicating type, 6-16 Mesh) will also be pre-weighed to between 200 and 300 grams after drying for 2 hours.

The inside dimensions of each stack will be measured and recorded. The number of sampling points and the location of these points on a traverse will be determined by the guidelines set forth in 40 CFR Part 60, Appendix A, Method 1. These points will then be marked on the probe for easy reference and visibility.

A preliminary traverse will be conducted to determine the range of velocity heads and the pressure of the stack. An approximate stack temperature will also be obtained during the same traverse and an approximate moisture content will be estimated based on knowledge of the emission source type and attendant characteristics as well as prior testing experience. From these data, the correct nozzle size and isokinetic K-factor will be determined.

Cyclonic flow will also be determined at this time. If the average cyclonic flow is indicated to be greater than 20° , the overall flow condition in the stack will be considered unacceptable, and a means of corrective action will be determined.

Specific condition No. B.1.(a) of the referenced air permit implies that the prescribed emission limitations are based upon 1-hour averages. In the interest of sample acquisition integrity and accuracy, it is proposed to perform all particulate matter sampling over an individual test run period of three (3) hours duration. The runs will be performed in triplicate for both natural gas and No. 2 fuel oil, for a total of three 3-hour runs per fuel per unit. If Method 1 indicates that a twelve (12) point traverse should be conducted, the particulate sample will be collected isokinetically for fifteen (15) minutes at each of the 12 sample points in the stack for a total test time of 180 minutes per run. If Method 1 indicates that a twenty-four (24) point traverse should be conducted, the particulate sample will be collected isokinetically for 7.5 minutes at each of the 24 sample points in the stack for a total test time of 180 minutes per run.

The sample train will consist of four (4) impingers with 100 ml of DI water in the first and second impingers. The third impinger will remain empty and the fourth impinger will contain approximately 200 to 300 grams (g) of silica gel. The first and second impingers shall be of the standard Greenburg-Smith design. The third and fourth impingers shall be of the modified Greenburg-Smith design (i.e., an unstricted tip on the glass tube insert of the impinger). After assembling the train with the probe as indicated by Method 5, the system will be leak-checked by plugging the inlet to the probe nozzle and pulling a vacuum of at least 15 inches of mercury (Hg). A leakage rate not in excess of 0.02 cfm will be considered acceptable. The pitot

tube system will also be leak-checked with at least 3 inches of water, and any leaks found will be corrected.

The glass probe and filter assembly will be maintained at a temperature of $320 \pm 25^{\circ}\text{F}$. Crushed ice will be placed around the impingers. After a suitable warm-up period, the nozzle will be placed at the first traverse point with the tip pointing directly into the gas stream. The pump will be started and the sampling rate adjusted to isokinetic conditions. After the required time interval has elapsed, the probe will be repositioned to the next traverse point and isokinetic sampling will be re-established. This will be continued for each point on the traverse until the run is completed. Readings, as identified in Figure 5-2 of RM 5, will be taken at least every 7.5 minutes or if significant changes in stack conditions necessitate additional adjustments in flow rate. At the conclusion of each run, the pump will be turned off and final readings will be recorded. A final leak-check of the system will be performed as previously described at the highest vacuum encountered during testing and a leak-check of the pitot system will be repeated. Again, a leakage rate not in excess of 0.02 cfm will be considered acceptable. If deemed necessary, leak checks will also be performed in between test port changes.

The RM 5B filter will be recovered and placed into a properly identified petri dish or other suitable sample container (Container 1). In addition, any filter material that adhered to the filter holder gasket will be recovered and transferred to the container. The probe nozzle, probe liner, and front-half of the filter holder will be rinsed a minimum three times with acetone. The acetone rinse will be recovered and placed in a separately labeled container (Container 2).

To determine the effluent moisture concentration, the contents of the first three impingers will be measured either volumetrically to the nearest 1.0 ml or gravimetrically to the nearest 0.5 grams (g). The fourth impinger containing the silica gel will be weighed to the nearest 0.5 g. The condensed impinger catches and absorbed silica gel mass will be totaled and applied to the moisture calculation equations provided in Method 4 (see Section 3.8 of this document).

Analysis of the RM 5B sample will be made following the procedures of §4.3 of RM 5 with the following exceptions – initially, the probe sample will be dried at ambient temperature. Then, both the probe and filter samples will be oven-dried at a temperature of 320°F for six (6) hours to volatilize any condensed sulfuric acid that may have been collected in the samples. The samples will then be desiccated for 2 hours and be weighed to constant weight.

PM emission rates will be calculated using the standard RM 5 equations. A blank of the sample reagents will be prepared and analyzed in accordance with the procedures in RM 5 for each site visit. The RM 5B blanks (same as RM 5) will include a sample particulate filter and a measured amount of acetone (approximate to the average amount of acetone used during sample recovery). The acetone blank will be evaporated to dryness following the same procedures used to evaporate the RM 5B acetone rinses. The RM 5B acetone rinse sample and filter will be oven dried for six (6) hours at 320°F prior to being placed in the desiccator. After desiccating the sample filter and acetone blank for 24 hours, both will be weighed to a constant weight. The results will be reported to the nearest 0.1 mg.

3.3 Sulfuric Acid (H₂SO₄) Mist Emissions (RM 8)

EPA Method 8 is used to determine combined sulfuric acid mist and sulfur trioxide (SO₃). The sampling procedures and apparatus are identical to EPA Method 5/5B except for the following:

- A filter bypass is used prior to the first impinger replacing the Method 5B filter
- The first impinger contains a solution of 80% isopropyl alcohol (IPA)
- A filter is placed in the connecting glassware between the first and second impinger
- The second and third impingers contain a solution of 3% hydrogen peroxide
- The sampling train is purged with ambient air for 15 minutes following sampling to remove any residual sulfur dioxide from the IPA fraction

Specifically, the H₂SO₄ sample will be collected isokinetically for 5 minutes at each of 12 (or 2.5 minutes at each of 24) sample points in the stack location for a total test time of 60 minutes. A glass probe and stainless steel nozzle assembly will be connected to a sample train consisting of four (4) impingers with 100 milliliters (ml) of 80% IPA in the first impinger, 100 ml of 3 % hydrogen peroxide in both the second and third impingers, and the fourth impinger will contain approximately 200 grams (g) of silica gel. The first and third impingers shall be of the standard Greenburg-Smith design. The second and fourth impingers shall be of the modified Greenburg-Smith design (i.e., an unstricted tip on the glass tube insert of the impinger). A glass filter holder, with a glass frit filter support and a silicone or Teflon rubber gasket, will be placed between the first and second impingers. The filter holder will not be heated, and the sample filter (M5-type) contained inside of the filter support will be untared. All glassware and equipment preparation will adhere to the procedures as outlined in RM 8.

After each test run, the sample train will be purged with ambient air at a rate of the average <H of the test run used for that particular sampling train for a period of 15 minutes.

For sample recovery, the impinger contents, sample filter, and sample rinses will be divided into the following sample containers:

- Container 1. The contents of the first impinger will be transferred to a 250-ml graduated cylinder. The rinse solutions (80 % IPA) from the nozzle, probe, connecting umbilical (if necessary), first impinger, and the front-half of the filter holder will also be added to the graduated cylinder. The solution in the graduated cylinder will then be diluted to 250-ml with 80 % IPA. The untared sample filter will be added and mixed with the contents of the graduated cylinder before being transferred to a storage container. Container 1 will be maintained in a chilled environment.
- Container 2. The contents of the second and third impinger will be transferred to a 1000-ml sample container. The rinse solutions (deionized (DI) water) from the second and third impingers and connecting glassware will also be added to the sample container. The solution in the sample container will be diluted to 1000-ml with DI water. *(NOTE: This container recovery step is optional since this particular portion of the sample catch is not used in the H₂SO₄ recovery and determination process.)*

A blank of the sample reagents will be prepared and analyzed in accordance with the procedures in RM 8 for each site visit. Analysis of samples, blanks, and audit will be made in accordance with procedures outlined in §§4.3-4.5 of RM 8. Analysis will be by the Barium Thorin titration method.

To determine the H₂SO₄ mist concentration, the results of the titration of Container 1 will be entered into the following equation as provided in §6.5 of RM 8:

$$C_{H_2SO_4} = K \times \left(\frac{N \times (V_t - V_{tb}) \times \left(\frac{V_{sol}}{V_a} \right)}{V_{mstd}} \right)$$

Where:

- $C_{H_2SO_4}$ = Concentration of H₂SO₄ and SO₃ (lb/dscf)
- K = 1.081e-4 (lb./meq)
- N = Normality of titrant (meq/ml)
- V_t = Volume of titrant used on sample (ml)
- V_{tb} = Volume of titrant used on blank (ml)
- V_{sol} = Total volume of solution in which sample is contained (ml)
- V_a = Volume of sample aliquot titrated (ml)
- V_{mstd} = Volume of gas sample @ standard conditions (dscf)

A set of three 1-hour test runs will be performed on each unit for both natural gas and No. 2 fuel oil, for a total of three 1-hour runs per fuel per unit.

3.4 Visible Emissions (RM 9)

EPA Method 9 will be used to determine compliance with the opacity limits for the two units. A set of three 1-hour test runs will be performed on each unit for both natural gas and No. 2 fuel oil, for a total of three 1-hour runs per fuel per unit. The percent opacity will be measured (to the nearest 5%) as visible emissions by a trained and certified visible emissions evaluator. The visible emissions evaluator is required to be certified every six months by field trials. Proof of valid certification will be provided in the test report.

Visible emissions will be observed by the qualified evaluator and recorded every fifteen seconds during each 1-hour test run. The average of the three (3) sets of 240 fifteen second readings for each fuel will be compared to the visible emissions limit of ≤ 10% opacity as specified in the referenced air permit.

3.5 Volatile Organic Compounds (RM 18)

In accordance with Specific Condition No. C.1.e. of the referenced air permit, volatile organic compound emissions (VOCs) may be determined by either RM 18 or RM 25A. The term VOC is defined as any carbon containing compound excluding non-organic carbon containing compounds such as CO, CO₂, etc. In addition, the organic compounds methane (CH₄) and ethane (C₂H₆), which are present in the units' emissions are excluded from the definition of VOC. Since RM 25A measures the *total* gaseous organic concentration of vapors including

methane and ethane and since this reference method does not quantify the concentrations of individual organic compounds, VOC determinations made using RM 25A may be biased high if the effluent from the turbines contain methane and/or ethane. Therefore, the VOC's will be quantified using RM18 sampling and analytical procedures incorporating the most recent changes promulgated in February 2000. A set of three 1-hour composite tedlar bag samples will be taken from each unit for both natural gas and No. 2 fuel oil. Samples will be collected using the sampling provisions of RM 18 with off-site gas chromatography (GC) using a flame ionization detector (FID). Off-site analysis will be completed within 24 hours by an independent GC analysis laboratory.

3.6 Instrumental Reference Methods — NO_x (RM 7E) and CO Determination (RM 10)

Source emission testing will be performed to demonstrate compliance with the NO_x requirements specified in the referenced air permit. Specific Condition No. C.1.d. requires that Method 7E (RM 7E) be performed should sampling take place downstream of the HRSG, as is the case for this particular test program. A set of three 1-hour test runs will be performed on each unit for both natural gas and No. 2 fuel oil, for a total of three 1-hour runs per fuel per unit.

The testing is required to demonstrate compliance with a total NO_x emissions limit on each unit from Payne Creek, when burning natural gas, of 12 parts per million (ppm) by volume corrected to 15 percent oxygen (O₂) as calculated on a dry basis and when burning No. 2 fuel oil, 42 ppm by volume corrected to fifteen percent oxygen (O₂) as calculated on a dry basis. Testing will also be performed to verify the turbine vendor's carbon monoxide (CO) emission guarantees to ensure that the Prevention of Significant Deterioration (PSD) threshold is not triggered. As is the case for NO_x, a set of three 1-hour test runs will be performed on each unit for both natural gas and No. 2 fuel oil, for a total of three 1-hour runs per fuel per unit. NO_x and CO samples will be analyzed simultaneously. Method 10 (RM 10) will be used to determine CO emissions. Since RM 7E and 10 are instantaneous, "real time" test methods, NO_x and CO compliance will be determined at the time of the initial certification.

For NO_x, an effluent sample will be extracted continuously from a single, representative point within the stack and a portion of the sample will be conveyed to an instrumental chemiluminescent analyzer for determination of NO_x concentration in ppmvd. RM 7E incorporates by reference the procedures outlined in Method 6C. Hence, all sample conditioning and transport will comply with the requirements as prescribed in RM 6C. To ensure compliance with RM 7E test standards, a three-point (i.e., zero, mid- and high-scale) analyzer calibration error check (i.e., direct analyzer calibration) will be conducted on the NO_x analyzer prior to initiating the compliance testing. For RM 7E, the mid-scale calibration gas is required to be 40-60% of span, while the high-scale calibration gas is required to be 80-100% of span. This check is conducted by sequentially injecting the zero and span calibration gases directly into the analyzer, recording the responses, and comparing these responses to the actual tag values of the calibration gas cylinders. During the direct calibration, it is permissible to set the analyzer for the zero adjustment using the zero calibration gas and the span adjustment using only one of the two upscale calibration gases. The reference calibration gases used during this test program will be certified following EPA Protocol analysis procedures. Copies of the calibration gas "certificates of analysis" will be provided in the final test reports. Acceptable system

performance checks dictate that the difference between the analyzer responses and the respective cylinder tag values will not exceed $\geq 2\%$ of span.

Zero and upscale system calibration checks (i.e., system bias calibration) will be performed both before and after each test run in order to quantify reference measurement system sampling system bias and calibration drift. In instances when the test runs immediately follow one another, the post-cal for the run immediately preceding a subsequent run shall also be the pre-cal for that forthcoming run. Upscale is either the mid- or high-range gas, whichever most closely approximates the flue gas level. During these checks, the calibration gases are introduced into the sampling system at the probe outlet so that they are conveyed throughout the entire sampling system in the same manner as the flue gas samples. Drift is defined as the difference between the pre- and post-test system bias calibration responses. Sampling system bias is defined as the difference between the test run calibration check responses (system bias calibration) and the initial calibration error responses (direct analyzer calibration) as a percentage of span. If an acceptable post-test bias check result is obtained but the zero or upscale drift result exceeds the drift limit, the test run is considered valid; however, the direct analyzer calibration and system bias check procedures must be repeated before conducting the next test run. A run is considered invalid and must be repeated if the post-test zero or upscale calibration check result exceeds the bias specification. Again, the direct analyzer calibration and system bias check procedures must be repeated before conducting the next test run. Acceptable system performance checks dictate that system bias calibration checks will not exceed $\geq 5\%$ of span or, for drift checks, $\geq 3\%$ of span. Tables 2 and 3 summarize the anticipated analyzer spans and calibration gas values to be used on each fuel during this test program.

Table 2. Anticipated Analyzer Spans and Calibration Gas Values (Natural Gas)

ANALYZER	SPAN	CALIBRATION GAS VALUES	
		MID-SCALE	HIGH-SCALE
NO _x	0-20 ppm	8.0-12.0 ppm	16.0-20.0 ppm
CO	0-20 ppm	~6 ppm	~12 ppm
O ₂	0-25%	10.0-15.0%	20.0-25.0%
CO ₂	0-20%	8.0-12.0%	16.0-20.0%

Table 3. Anticipated Analyzer Spans and Calibration Gas Values (No. 2 Fuel Oil)

ANALYZER	SPAN	CALIBRATION GAS VALUES	
		MID-SCALE	HIGH-SCALE
NO _x	0-100 ppm	40.0-60.0 ppm	80.0-100.0 ppm
CO	0-25 ppm	~7.5 ppm	~15 ppm
O ₂	0-25%	10.0-15.0%	20.0-25.0%
CO ₂	0-20%	8.0-12.0%	16.0-20.0%

NOTE: Depending upon concentrations typically seen during equipment setup, analyzer spans and calibration gas values are subject to change.

Emissions of CO will also be extracted continuously from the stack via the same sample transport system as that used for NO_x sampling. A portion of the sample will be conveyed to a Thermo Environmental Instruments (TEI) Model 48C Gas Filter Correlation Non-Dispersive Infrared (GFC/NDIR) analyzer that is used for continuous CO analysis. Determining CO emissions will be determined in a manner identical as that for NO_x with the exception that the two span calibration gases are required to be ~30% and ~60% of the CO analyzer span.

3.7 Instrumental Reference Methods — O₂ and CO₂ Determination (RM 3A)

Oxygen (O₂) and carbon dioxide concentrations will be determined using the procedures described in RM 3A. RM 3A incorporates by reference the same sampling and calibration procedures outlined for the determination of NO_x emissions. O₂ and CO₂ values will be used in order to calculate values of dry gas molecular weight, excess air, and lb/million Btu emission rates where applicable. RM 3A values will be obtained during all pollutant test runs performed throughout the test program.

3.8 Stack Gas Velocity and Volumetric Flow Rate (RM 2) and Moisture Content (RM 4)

Emission rates of NO_x, CO, SO₂, VOC, beryllium, and arsenic will be determined from the isokinetic velocity values obtained during the RM 5B or RM 8 test runs that most closely coincide with the times used to determine the NO_x, CO, SO₂, VOC, beryllium, and arsenic concentrations. If no representative corresponding velocity data is available, separate RM 2, RM 3A, and RM 4 test runs will be performed in order to determine the most accurate emission rates of these remaining pollutants.

The average gas velocity and resultant volumetric flow rate in the stacks will be determined from measurements of the velocity head with a Type S pitot tube simultaneously during the isokinetic RM 5B and RM 8 runs. Calibration of the pitot tubes will be performed to verify the face opening alignments, external tubing diameter, and base-to-opening plane distances. A base line coefficient value of 0.84 will be assigned to each pitot tube. An inclined oil manometer will be used to measure velocity heads and stack static pressure. Flue gas temperatures will also be measured during the traverses using calibrated Type K thermocouples.

The moisture content of the gas stream will also be determined simultaneously during the isokinetic RM 5B and RM 8 runs by extracting the gas sample at a known and regulated rate through the RM 5B and RM 8 glass condenser trains. The condenser trains will consist of four glass impingers connected in series with leak free glass U-tube connectors. The gas samples will be extracted through the impinger trains (maintained below 68°F at all times in an ice bath) with a vacuum pump and the amount of gas sampled will be measured with a calibrated dry gas meter. In the event that separate individual RM 4 results will be needed, samples will be extracted from the stack in a quantity of a minimum of twenty-one (21) dry standard cubic feet per §2.2.2 of RM 4.

4.0 COMPLIANCE TESTING FOR OTHER POLLUTANTS

The referenced air permit also includes emission limitations and subsequent initial compliance testing requirements for various pollutants where the concentrations of these pollutants will not be determined during the aforementioned performance testing program. Rather, the referenced air permit provides alternate means and/or methods of determining these concentrations. Where requested by FDEP, pollutant concentrations will be converted into emission rates using the

applicable conversion equations. Volumetric flow rates achieved during the performance testing program will be used in order to compare the measured pollutant concentrations to the stated emission limitations as prescribed in the referenced air permit. The subject pollutants and the corresponding proposed test methods are as follows:

4.1 Sulfur Dioxide (SO₂)

For natural gas fuel, natural gas supplier data indicating the sulfur content of the natural gas via fuel analysis will be submitted. ASTM D1072-80, D3031-81, D4084-82, or D3246-81 (or equivalent) is the required method for determining the sulfur content of the natural gas fuel. Analysis responsibilities and custom monitoring schedules performed and agreed upon pursuant to 40 CFR Part 60, New Source Performance Standard (NSPS) Subpart GG, §§60.334(b) and 60.335(e) will be made between Seminole Electric and FDEP personnel under separate cover.

The sulfur content of the No. 2 fuel oil will also be submitted. ASTM D4294 (or equivalent) is the required method for determining the sulfur content of the fuel oil. The maximum sulfur content of the fuel oil shall not exceed 0.05 percent by weight. Compliance will be demonstrated in accordance with the requirements of 40 CFR Part 60, §60.334(b).

The sulfur contents of the natural gas and No. 2 fuel oil will be performed by a separate testing contractor (e.g., fuel(s) vendor).

4.2 Beryllium and Arsenic

Trace elemental concentrations of beryllium and arsenic via fuel analysis will be tested using solid waste regulations SWC 846 Method 7090/91 and Method 3040. Beryllium and arsenic concentrations will be determined for No. 2 fuel oil only. As is the case for sulfur content, any fuel analyses will be performed by a separate contractor.

5.0 TEST EQUIPMENT CALIBRATIONS

Test equipment will be calibrated before and/or during use in the field. Interference checks and response time checks will be performed on each monitor (as applicable) and the entire monitor sampling systems before field use. An NO to NO₂ converter efficiency test will be performed on-site with the procedures described in §5.6.1 of Method 20 (RM 20).

6.0 TEST REPORTS

Upon completion of the test program, a preliminary report summarizing the test results will be generated for Seminole Electric internal review prior to drafting the final report. The final report will include all field test data, process data, emissions calculations, calibration data, test method descriptions, stack information, and laboratory results. Two copies of the final test report will be submitted to the Florida Department of Environmental Protection (FDEP) for review.

APPENDIX A

PERFORMANCE TEST CONTACT LIST



RECEIVED

MAR 1 2001

BUREAU OF AIR REGULATION

February 26, 2001

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

RE: Payne Creek Generating Station
PSD-FL-214A / PA-89-25SA

Dear Mr. Linero:

As required in the above referenced permit, Seminole Electric Cooperative, Inc. is submitting the equipment descriptions for the Turbines, SCR System, CO Catalyst System, and the CEMS. We are currently in the process of preparing the CEMS Protocol and will forward it to your office soon. If you have any questions or require any additional information please call me at (813) 963-0994, extension 1224.

Sincerely,

Mike Roddy
Senior Environmental Engineer

cc: Hamilton S. Oven

W501FD II Combustion Turbine

The W501F combustion turbine consists of a 16-stage, high efficiency axial compressor, an integral combustion chamber equipped with 16 can-annular combustors, and a 4-stage reaction type turbine. The combustion turbine is directly coupled to the generator at the compressor end.

Ambient air is drawn through the inlet manifold and inlet casing into the compressor. It is pressurized to approximately 16 atmospheres and fed into the combustors, where it is mixed with fuel and ignited, raising the temperature of the mixture of air and combustion products. The compressed and heated mixture (gas) then expands through the turbine, dropping in pressure and temperature as the heat energy is converted into mechanical work. A portion of the power thus developed by the turbine is used for driving the compressor, with the balance of power used to drive the generator. The expanded gases are then exhausted into the heat recovery steam generator (HRSG).

Combustion System

The combustion system consists of 16 can-annular Dry Low NOx combustors configured to burn primarily natural gas with No. 2 distillate oil as a backup fuel.

The presence or absence of flame and the uniformity of the fuel distribution between combustors are monitored by thermocouples located downstream of the last stage turbine blades. These can also detect combustor malfunctions when at load.

CO CATALYST

The gas turbine exhaust passes through the carbon monoxide catalytic oxidation system where the carbon monoxide is oxidized. The oxidation reaction between oxygen and carbon monoxide, which is enhanced by the catalyst, occurs at 500°F and above to form carbon dioxide.

The CO converter unit assembly is composed of special stainless steel foil, corrugated and folded back and forth upon itself to make a honeycomb core. The core is encased in a stainless steel enclosure measuring approximately 4 square feet. This core and enclosure is called a "module."

These modules are fitted into an internal support frame made of carbon steel. Expansion seals on the outside of the internal support frame assures that the exhaust passes through the catalyst. The expansion seals also accommodate thermal expansion. The above mentioned components are installed in an external support structure which serves as a duct spool piece.

This catalyst structure is constructed of carbon steel with a stainless steel liner over the insulation, and has a manway on one side wall. The manway is for installation and removal of catalyst modules.

Test catalyst cores or "buttons" (cylinders about 3 inches dia.) are located in various catalyst modules. The test catalyst buttons are mounted for easy replacement from time to time for lab testing.

SELECTIVE CATALYTIC REDUCTION (SCR)

This section of the HRSG provides a system for aqueous ammonia injection into the gas path with a resulting ninety approximately (90) percent NO_x removal efficiency. The SCR includes the reactor housing, transitions, internal support structure, catalyst and ammonia skid.

The plant will be equipped with a SINO_x emission control system that will have a dedicated reactor housing with catalyst, ammonia injection grid, recycle gas skid, metering panel, and system control from the plant's existing DCS system.

Aqueous ammonia approximately (27 % wt) will be used as the reducing agent. The SINO_x system is connected to the supply piping and the amount of ammonia that is injected is determined by a flow control and metering valve.

The metered amount of the ammonia solution is injected, in accordance with the actual emission source load, into the exhaust gas system upstream of the SINO_x-catalyst (feed forward control system). The correlation curve/map (Predictive Emission Monitoring System, PEMS) of the NO_x-mass flow, relative to the load, is finalized during start-up/commissioning in actual field operating conditions. Additionally, signals corresponding to the actual NO_x and O₂ concentration as measured by the plant CEMS (Continuous Emission Monitoring System) at the stack are transferred to the DCS system to monitor the control and optimize the PEMS map if required.

A two-phase (liquid-air) injection nozzle atomizes the reducing agent in the spray evaporator. Recycled exhaust gas is used for evaporating the reducing agent. This carrier air/gas with the evaporated, premixed reducing agent is then injected into the exhaust gas via the ammonia injection grid piping assembly located upstream of the (SCR) catalyst in the HRSG duct. In the presence of the highly active homogeneous mixture, extruded SINO_x (SCR) catalyst will convert the nitrogen oxides (NO_x) by reacting with the ammonia (NH₃) to form harmless molecular nitrogen (N₂) and water.

The SINO_x system will be controlled by means of the plant Teleperm (TXP) DCS system. The display of system status/messages and operator controls will be made available on the existing TXP Operators Stations located within the plant control room.



MODEL 5600 CHEMILUMINESCENT NO_x ANALYZER

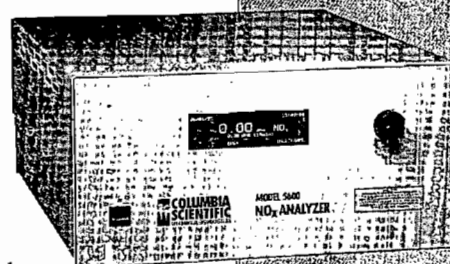
TECHNICAL
BULLETIN

THE MODEL 5600 ANALYZER OFFERS SUPERIOR SENSITIVITY

THROUGH PHOTON COUNTING. The 5600 microprocessor-controlled NO_x Analyzer performs specific, real-time and continuous dry analysis of ambient level nitric oxide and nitrogen dioxide in gas mixtures by detecting chemiluminescence resulting from the nitric oxide/ozone reaction.

The Model 5600 NO_x Analyzer derives its stability from maintaining the reaction chamber and the photomultiplier tube, each in thermally stable environments. This temperature stabilization ensures accurate readings over widely varying ambient temperatures without the need for moving parts such as a chopper. Furthermore, the 5600 Analyzer uses an exclusive photon-counting technique that filters photomultiplier noise far more effectively than conventional analog techniques. This results in improved sensitivity and long-term stability.

The logical menu-driven operation is extremely user-friendly and features a liquid crystal display and rotary encoder (knob) which does not require a keyboard. Ease of maintenance is enhanced by the interchangeability of many Model 5600 components with those of other 5000-series analyzers.



SENSITIVITY— Superior sensitivity through photon counting. No A/D conversions.

ENVIRONMENTAL

MONITORING— EPA approved for ambient air monitoring.

OUTPUTS— Wide autoranging from 0 to 50,000 ppb.

EASE OF USE— Easily read backlit liquid crystal display. Graphic user interface using rotary encoder. No keyboard required.

EASY MAINTENANCE— No mechanical choppers or moving parts.

PREDICTIVE

DIAGNOSTICS— Parameters are measured, checked continuously and alarmed with an output to printer or external computer.

MODEL 5600

PERFORMANCE SPECIFICATIONS

	5600 NO _x Analyzer	EPA Requirements
Range (full scale in ppb, ppm, µg/m ³ , or µg/m ³):	0-50,000	0-500
Noise (RMS) at zero:	0.05	5.0
Lower Detection Limit:	0.1	10.0
Interference Equivalent:	<20	60
Zero Drift (24 hr):	±1	±10
Span Drift (24 hr):	±1%	±5%
Precision at 500 ppb:	±3 ppb	±20 ppb
Lag Time:	8 sec.	20 min.
Rise Time (to 95%):	120 sec.	15 min.
Linearity:	±1%	NA
Temperature Range:	10° to 35° C (32° to 95° F)	20° to 30° C (68° to 86° F)
Unattended Operation, days:	<7	7

OPERATIONAL SPECIFICATIONS

Flow Rates:	Sample 500 ml/min, O ₃ Generator 125 ml/min.
Power Requirements:	115/230 vac, 50/60 Hz, 500 W
Humidity Range:	0 to 95% RH (noncondensing)
Output:	Display: 0-50,000 ppb NO _x RS-232: 0-50,000 ppb NO _x Centronics parallel printer port provides data plus alarms, time of day and averages
Pump Requirements:	External Pump; 1.0 lpm flow; vacuum >500 mm Hg
NO ₂ to NO Converter:	Molybdenum-filled cartridge
Converter Life Expectancy:	>2000 ppm hours of NO ₂

PUBLICATION #39041001

FOR MORE INFORMATION
OR TO ORDER, PLEASE
CONTACT YOUR FORNEY
REPRESENTATIVE.

Forney Corporation
3405 Wiley Post Road
Carrollton, TX 75006-5185
Telephone: 972/458-6100
Fax: 972/458-6650
www.forneycorp.com



Forney Corporation
Registered to ISO 9001
Certificate No. A1854



FM No. 30122

Columbia Scientific Model 5200-P Paramagnetic Oxygen Analyzer

The 5200-P Oxygen Analyzer (Ex-Situ) is a rugged and light-weight instrument which may be used for discontinuous or continuous measurement of the oxygen content in a clean and dry gas sample. The sampling system of the analyzer includes an internal fine filter in order to prevent foreign matter entering into the measuring cell. A flowmeter with needle valve introduces the sample gas into the measuring cell at the required flow rate.

Paramagnetic measurement of oxygen prevents any inaccuracy of measurement due to the cross sensitivities of other gases because the paramagnetism of oxygen is significantly greater than that of other common gases and consequently the molecules of oxygen are attracted more strongly by a magnetic field. The magneto-dynamic cell consists of two nitrogen-filled quartz spheres arranged in the form of a dumb-bell. A single turn coil of platinum wire is placed around the dumb-bell which is suspended in a symmetrical non-uniform magnetic field. At the center of the dumb-bell is a small mirror. When the surrounding gas contains oxygen, the spheres are pushed out of the magnetic field caused by the relatively strong paramagnetism of oxygen. The force on the dumb-bell is corrected by a current through the coil which is controlled by a photo-detection system via a light beam and the mirror on the dumb-bell. The feedback current, required to compensate the torque acting on the dumb-bell will be proportional to the oxygen concentration in the gas sample through the cell.

Due to the extremely fast response time, and negligible cross sensitivity from other sample gas components, the 5200-P Analyzer is ideal for measuring oxygen concentrations in flue gases, inert gas installations, food packaging machines, ambient air and medical applications.

Technical Specifications of Model 5200-P Oxygen Analyzer

Measuring range:	0-100 volume % oxygen, linear..
Meter indication:	Digital meter; • 3½ digit 18mm high LCD-indicator for 0-100% oxygen reading.
Output signals:	0-10VDC, non-isolated, load > 100 KΩ, for each selected range. * Option: • 0-20mA or 4-20mA, isolated or non-isolated, max. load 300Ω, for the chosen measuring range. ** Option: • Oxygen alarm for minimum or maximum contact.
Response time for 90% FSD:	< 3 seconds at 60 l/h. air.
Accuracy after calibration:	± 1 volume % of span.
Reproducibility:	< 1 volume % of span.
Influence of ambient temperature:	Zero point ± 0.02 volume % oxygen per C°. Sensitivity ± 0.1 volume % oxygen per C°.
Influence of barometric pressure:	The oxygen reading will vary in direct proportion to changes of the barometric pressure which is continuously measured and compensated.
Influence of sample gas flow:	Variations in gas flow between 0 and 60 l/h. will show a difference of < 1% by volume oxygen.
Gas inlet pressure:	Minimum 0.01 barg. Maximum 1 barg.
Gas outlet pressure:	Outlet of analyzer must always discharge freely in the open atmosphere.
Flow rate of sample gas:	Adjustable between 7 and 70 l/h with needle valve on the flow-meter. Maximum flow 60 l/h.
Ambient temperature:	During operation between -10° C and +55° C.
Storage temperature:	Between -20° C and +60° C. Relative humidity 0-90% RH.
Power supply:	Internal power unit for 115/220 VAC, selectable, +/- 10%, 40-60 Hz., 3.5VA.
Materials in contact with sample gas: resin.	Platinum, Glass, Polypropylene, Stainless Steel 316, Viton and Epoxy
Sample gas connection:	Hose nipple for DN 11-4mm tube.
Dimensions:	Height = 120mm, Width = 120mm, Length = 80mm, (Designed for mounting on CEMS auxiliary panel. Readout mounted on CEMS front panel)
Weight:	1 Kg.

REMARKS:

- * Optional mA output signal is only applicable to the chosen measuring range.
- ** Oxygen alarm always includes relay output (switch-over contact).

WARNING:

An external fine filter must always be at the sample gas inlet of the 5200-P analyzer.

Depending on the specification of the sample gas to be measured, it may be necessary to use a gas conditioning system.

Without precautions, the 5200-P analyzer is only suitable for measuring of non-hazardous gases and gas mixtures in non-hazardous areas.