Florida Department of Environmental Regulation

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

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF PERMIT

Ms. Patsy Y. Baynard
Environmental & Licensing Affairs
Florida Power Corporation
Post Office Box 14042
St. Petersburg, Florida 33233

August 29, 1990

Enclosed is construction permit No. AC 09-162037 and PSD-FL-139 to construct four helper cooling towers, with 9 cells (stacks) per tower, for units 1, 2, and 3 at the Crystal River Plant in Citrus County, Florida. This permit is issued pursuant to Section 403, Florida Statutes.

Any party to this permit has the right to seek judicial review of the permit 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 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 30 days from the date this permit is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

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

Copy furnished to:

B. Thomas, SW Dist.
G. L. Christensen, P.E.

P 280 742 413

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to: Patsy Baynard	
Street and No.: FLA Power Corp	
P.O., State and ZIP Code: P.O. BOX 14042	
Postage: St. Pete, FL	
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date 8-30-90	

PSD-FL-139
AC 09-162037

PS Form 3800, June 1985 ☆U.S.G.P.O. 1989-234-555

...ing returned to you. The return receipt fee will provide you the name of the person delivered to and ...e of delivery. For additional fees the following services are available. Consult postmaster for fees check box(es) for additional service(s) requested.)
Show to whom delivered, date, and addressee's address. 2. ☐ Restricted Delivery *(Extra charge)*
1. ☐ *(Extra charge)*

...le Addressed to:
...Baynard
Power Corp
BOX 14042
...ersburg FL 33733

4. Article Number
P 280 742 413

Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

8. Addressee's Address *(ONLY if requested and fee paid)*

...ure — Addressee

...ure — Agent

Delivery SEP 04 1990

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF PERMIT and all copies were mailed before the close of buisness on 8-30-90.

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

Kim Baker
Clerk

8-30-90
Date

Final Determination

Florida Power Corporation
Crystal River, Citrus County, Florida

Four Helper Cooling Towers for Units 1, 2, and 3

Permit Numbers: AC 09-162037
PSD-FL-139

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

August 15, 1990

Final Determination

The Technical Evaluation and Preliminary Determination for the permit to construct four "Helper Cooling Towers" for Units 1, 2, and 3 at Florida Power Corporation's Crystal River Plant in Citrus County, Florida, was distributed on August 4, 1989. The Notice of Intent to Issue was published in the Citrus County Chronicle on May 16, 1990. Copies of the evaluation were available for public inspection at the Department's Southwest District office in Tampa and Bureau of Air Regulation office in Tallahassee.

No comments were received from any concerned citizen on the Department's Intent to Issue the permit. EPA had no comments except to use deionized water for probe wash during a Method 5 particulate stack test. The DER's Tampa District office had no comments.

We received comments from the Florida Power Corporation on many issues which were resolved in a meeting with the Department which resulted in revised specific conditions.

The following changes were made to the Technical Evaluation and Preliminary Determination:

a. Project Description

The applicant has decided to install four cooling towers with 9 cells (stacks) per tower to cool approximately 735,000 gpm of salt water (from all 4 towers) from 102.4°F to 91°F. Each cell (stack) will be equipped with an I.D. fan at a new designed flow rate of 1,461,135 ACFM.

b. Stack Testing

Since the Department has no experience and/or data available on helping cooling tower emissions, an agreement was reached with FPC that a particulate stack test will be conducted once every (30) months if the emissions during the initial compliance test indicates it is above 80% but less than 100% of its allowable limit of 11.89 lbs/hr. Otherwise a stack test will be conducted once every five years if the initial compliance test results show that particulate emissions are below 80% of the 11.89 lbs/hr allowed limit.

c. Specific Conditions

Specific conditions Nos. 1, 2, 4, and 5 were revised to reflect more accurately the operation, maintenance, and test requirements. All other specific conditions remain as issued.

d. Table in Preliminary Determination

FPC submitted revised tables 1, 2, 5, 6, 7, and 8 on July 26, 1990 which reflects the 9 cells per tower configuration.

The final action of the Department is to issue construction permit No. AC 09-162037 and permit No. PSD-FL-139 as proposed in the Technical Evaluation and Preliminary Determination.

Florida Department of Environmental Regulation

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

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

PERMITTEE:

Florida Power Corporation
P. O. Box 14042
St. Petersburg, Fl 33233

Permit Number: AC 09-162037
PSD-FL-139
Expiration Date: Oct. 1, 1993
County: Citrus
Latitude/Longitude: 28°57'35"
82°42'30"
Project: Helper Cooling Towers
For Units 1, 2, and 3

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

For the construction of four helper cooling towers for Units 1, 2, and 3, consisting of 9 cells (stacks) per tower, to cool approximately 735,000 gpm (from all 4 pumps) of salt water at about 102.4°F to 91°F. Salt water drift emissions are controlled by high efficiency (99.8%) drift eliminators at a designed air flow of 1,461,135 ACFM from each cell.

The project will be located at the existing Crystal River Plant in Citrus County, Florida. The UTM coordinates of this facility are Zone 17, 333.8 km East and 3204.5 km North.

The source shall be 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. FPC's application package received March 9, 1989.
2. DER's letter dated April 7, 1989.
3. FPC's response received May 30, 1989.
4. FPC's letter received July 10, 1989.
5. EPA's letter to FPC received August 2, 1989.
6. Preliminary Determination dated August 2, 1989.
7. FPC's comments received August 28, 1989.
8. EPA's comments received September 8, 1989.
9. FPC's test proposal received September 15, 1989.
10. FPC's comments received October 23, 1989.
11. FPC's Phase II test report received February 6, 1990.
12. FPC's Phase III test report received March 9, 1990.
13. FPC's letter received March 19, 1990.
14. DER's revised Preliminary Determination dated March 28, 1990.
15. FPC's letter dated May 31, 1990.
16. Black & Veatch's FAX message dated July 25, 1990.
17. Final Determination dated July 26, 1990.

PERMITTEE:

Florida Power Corp.

Permit Number: AC 09-162037
PSD-FL-139

Expiration Date: October 1, 1993

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

GENERAL CONDITIONS:

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

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

a. Have access to and copy any records that must be kept under the conditions of the permit;

b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

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

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

a. a description of and cause of non-compliance; and

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

GENERAL CONDITIONS:

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 Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

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

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

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

13. This permit also constitutes:

(x) Determination of Best Available Control Technology (BACT)
(x) Determination of Prevention of Significant Deterioration (PSD)

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.

GENERAL CONDITIONS:

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.

SPECIFIC CONDITIONS:

1. The operating hours for each mechanical draft helper cooling tower pump shall not exceed 4,320 annually (about 6 months per year).

2. The maximum allowable emissions of particulate matter from each cell (stack) is 11.89 #/hour. This is based on a 0.004% drift rate (ratio of drift to the circulation rate) and the following table:

Flow Rate	Total TSP (from all 36 cells)		PM_{10}	
gpm	#/hr	T/yr	#/hr	T/yr
735,000	428	925	214	462

(PM_{10} is approximately 50% of total TSP)

PERMITTEE:

Florida Power Corp.

Permit Number: AC 09-162037
PSD-FL-139

Expiration Date: October 1, 1993

SPECIFIC CONDITIONS:

3. The total TSP and PM_{10} fugitive dust emissions from the sources addressed in the revised technical evaluation are estimated to be 54 TPY and 34 TPY respectively, for inventory purposes. These emissions shall be controlled as detailed in the revised application.

4. Compliance tests, on a randomly selected cell (stack), to be selected by the Department, shall be conducted for each cooling tower while it is operated at 90-100% capacity. Such tests shall be conducted within 120 days of completion of construction while operating at the peak heat load, in accordance with the July 1, 1988 version 40 CFR 60, Appendix A, using EPA Method 5, or any other equivalent method approved by the Department pursuant to F.A.C. Rule 17-2.700(3)-Exceptions and Approval of Alternate Procedures and Requirements. Specifically, when using EPA Method 5, a distilled water rinse shall be used in place of acetone, and the impinger catch shall be excluded from emission calculations. The salt water flow rate during the compliance tests shall be determined using the manufacturer's certified pump curves, or any other equivalent method approved by the Department. If the initial and subsequent compliance test results indicate that the particulate emissions are greater than 80% but less than 100% of its allowable limit of 11.89 lbs/hr per cell (stack), the source will be required to conduct another stack test within thirty (30) months. Whereas, a particulate stack test will be required once every five years if the initial and subsequent compliance test results show that particulate emissions are below 80% of the 11.89 lbs/hr allowed limit. The Department's SW District office and the Bureau of Air Regulation shall be informed as soon as the construction has been completed and a written notification shall be provided at least fifteen (15) days prior to the Thermal Performance and Particulate Compliance tests.

5. Each pump shall be equipped with a "Run-Hour" meter. A log shall be maintained of the hours of operation of each pump supplying salt water to the helper cooling towers. Pump flow rate shall be determined from the manufacturer's certified pump curves, or any other equivalent method approved by the Department.

6. The drift eliminators shall be installed such that minimum bypass occurs. Regular maintenance shall be carried out to keep the drift eliminators functioning properly.

7. The permittee shall comply with all the applicable provisions of Chapters 17-2 and 17-4 of the Florida Administrative Code.

PERMITTEE:

Florida Power Corp.

Permit Number: AC 09-162037
PSD-FL-139
Expiration Date: October 1, 1993

SPECIFIC CONDITIONS:

8. Any changes in the method of operation, equipment, or operating hours shall be submitted to DER's Southwest district office for approval.

9. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to DER's Bureau of Air Regulation prior to 60 days before the expiration of the permit (F.A.C. 17-4.090).

10. An application for an operation permit must be submitted to the Southwest district office at least 90 days prior to the expiration date of this construction permit or within 45 days after completion of compliance testing, whichever occurs first. To properly apply for an operation permit, the applicant 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 (F.A.C. 17-4.220).

Issued this 29 day
of August, 1990

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Dale Twachtmann

Dale Twachtmann, Secretary

Best Available Control Technology (BACT) Determination
Helper Cooling Towers
Florida Power Corporation
Citrus County

The applicant proposes to install four helper cooling towers at the Crystal River power plant located eight miles northwest of Crystal River, Florida. The cooling towers will be constructed to maintain the discharge water temperature at the plant site to a level which complies with the facility's National Pollutant Discharge Elimination System (NPDES) permit limitations. Prior difficulties with complying with the NPDES outflow temperature limitation have initiated this requirement by the Environmental Protection Agency (EPA) that the cooling towers be constructed to maintain the proper temperature.

The applicant has indicated the maximum total annual tonnage of regulated air pollutants emitted from the four cooling towers based on 4,320 hours per year operation to be as follows:

Pollutant	Maximum Emissions lbs/hr Per cell	Maximum Emissions tons/yr All 36 cells	PSD Significant Emission Rate tons/yr
Particulate Matter	11.89	925	25
PM_{10}	5.94	214 (estimate)	15

Rule 17-2.500(2)(f)2. of the Florida Administrative Code requires a BACT review for all regulated pollutants emitted from major facilities in an amount equal to or greater than the significant emission rates listed in the previous table.

BACT Determination Requested by the Applicant

The BACT Determination requested by the applicant is given below:

Pollutant	Determination
Particulate Matter (includes PM_{10})	Drift Eliminators (99.8% efficient)

Date of Receipt of a BACT Application

March 9, 1989

Review Group Members

This determination was based upon comments received from the applicant and the Permitting and Standards Section.

BACT Determination Procedure:

In accordance with Florida Administrative Code Chapter 17-2, Air Pollution, this BACT determination will be 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 Best Available Control Technology 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.

BACT Analysis

A review of the BACT/LAER Clearinghouse does not indicate that BACT determinations have previously been completed for cooling towers.

Evaporative cooling towers are used to provide waste heat rejection at electric power stations in order to improve efficiency and to lower cooling water discharge temperatures to environmentally safe levels. When brackish or saline water is used for cooling purposes there is typically drift emitted from the cooling tower. Drift is defined as the current of water droplets which are mechanically entrained in the cooling tower exhaust flow. Thus, it has a chemical composition similar to the circulating water in the cooling tower.

The Crystal River power units (1-3) use water obtained from the Gulf of Mexico for cooling purposes. In order to minimize the drift emitted from the towers, drift eliminators capable of controlling drift to 0.004 percent of the circulating water have been proposed.

Drift eliminators operate on the principle of centrifugal separation by causing the cooling tower exhaust stream to pass through curved ducts, with the heavy water droplets becoming trapped on the duct walls. Although vendors have guaranteed tower drift rates as low as 0.001 percent, consideration must be given to the test methods that support these guarantees.

There are several test methods that have been used or have been proposed for use to quantify drift rates. These methods are listed as follows:

1) Sensitized Paper
2) EPA Method 13A
3) EPA Method 5
4) Heated Glass Beads Isokinetic Method

The applicant has indicated that each of the mist eliminator vendors who submitted proposals guaranteed a drift rate of 0.001 percent based on the sensitive paper testing method. The sensitized paper method essentially uses the same principal to capture particulates as the mist eliminators themselves. In this method droplet collection is achieved by inertial impaction on water sensitive paper. The paper, which is chemically treated, is suspended above the mist eliminators such that droplets from the cooling tower will impinge upon the paper and generate a well-defined stain. The size and shape of the stain are functions of the impingement dynamics, i.e., speed and angle, and of the original droplet diameter. Based on simulation, a relationship between the stain and the droplet size has been developed.

Although the sensitized paper method has been widely used for drift measurements, it does have a major drawback. Testing has indicated that the sensitized paper method cannot provide data on droplet sizes below about 20-30 microns. Droplets with sizes below this range do not have the mass necessary to be captured by inertial impaction. These droplets tend to exhibit the same characteristic as the gaseous portion of the cooling tower exhaust and pass around the sensitive paper without being captured. This situation can be avoided to some degree by using methods which utilize isokinetic sampling.

Isokinetic sampling methods utilize equipment which allow samples to be drawn from a gas stream with a sampling velocity which is essentially equivalent to the velocity of the gas stream itself, and consequently the tendency for small particles to pass around the sampling device is minimized, thereby allowing the smallest particles to be captured. EPA Methods 13A and 5 and the heated glass beads method utilize the equipment necessary to perform sampling isokinetically.

A review of the isokinetic sampling methods used for sampling cooling towers indicates much variability. Testing results from one cooling tower indicates drift rates ranging from 0.0039 to 0.344 percent using repeated EPA Method 13A testing. This variability suggests that a drift limitation backed by EPA Method 13A testing may result in compliance problems which originate from faults with the test method itself.

Previous testing with the heated glass bead method indicates a testing variability which is much less than that which has been demonstrated by EPA Method 13A. The majority of the testing that has been conducted on cooling tower drift has been completed with either the heated glass bead or sensitized paper method. Based on the amount of data and the level of variability experienced, the heated glass bead method may have a stronger basis for backing a given drift limitation.

EPA Method 5 is another testing method that should be considered. Although EPA Method 5 has not been used previously for cooling tower drift measurement, the EPA believes that this method would yield results which are less variable than EPA Method 13A and would be more in line with the heated glass bead method.

Based on EPA's recommendation, the applicant has conducted recent testing using EPA Methods 5, 13A, and the Hot Bead Isokinetic Test Procedure. The study confirmed EPA's notion and established Method 5 as the preferred test method.

The Method 5 testing indicated that a test cell drift rate of 0.0004% can be achieved under the optimum configuration. This drift rate is based on a limited number of tests. Factors, affecting drift rate when scaling up from a test cell to full scale application, indicate that the drift rate will increase 5 fold. In addition, when comparing any two test results achieved with a specific design configuration, the results between tests varied by a factor of 2. To allow an adequate margin for the test uncertainty, scale-up factors, and operation/maintenance margin, FPC proposes that the permitted drift limit be 0.004%.

Environmental Impact Analysis

A review of the proposed cooling tower installations should account for the uniqueness of this particular project from an environmental standpoint. There are two factors that need to be considered:

1) The overall benefit of constructing the cooling towers

2) The existing background concentrations

As noted in the introduction of this determination, the proposal to construct the helper cooling towers is directed at complying with the EPA's request to reduce the outlet temperature of the cooling water used for units 1, 2, and 3. As this is the case, the proposal should be evaluated from the standpoint of providing an overall benefit to the environment and not the potential air impacts only.

It should be noted that although the cooling towers will emit particulates in the form of salt, the overall contribution to the area from the towers will be minimal. The Crystal River Power Facility is located approximately one mile from the Gulf of Mexico. It is expected that the natural contributions of salt deposition from wave action to this area will be substantially greater than that which would be emitted from the cooling towers.

BACT Determination by DER

Based on the information presented by the applicant and the Department's subsequent review, the Department believes that BACT is represented by using state-of-the-art drift eliminators and by limiting the drift rate to 0.004 percent, with EPA Method 5 or a departmental approved equivalent using the Alternate Sampling Procedure to be used as the basis for compliance.

Details of the Analysis May be Obtained by Contacting:

Barry Andrews, P.E., BACT Coordinator
Department of Environmental Regulation
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended by:

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

August 21 1990
Date

Approved by:

Dale Twachtmann, Secretary
Dept. of Environmental Regulation

29 August 1990
Date

AUG 23 1990

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION
Office of the Secretary

For Routing To Other Than The Addressee

To: _____ Location: _____
To: _____ Location: _____
To: _____ Location: _____
From: _____ Date: _____

Interoffice Memorandum

TO: Dale Twachtmann

FROM: Steve Smallwood

DATE: August 15, 1990

SUBJ: Approval of Construction Permits Nos. AC 09-162037 and PSD-FL-139
Florida Power Corporation

Attached for your approval and signature is a permit prepared by the Bureau of Air Regulation for the above mentioned company to construct four cooling towers with 9 cells (stacks) per tower, to cool approximately 735,000 gpm of salt water from 102.4°F to 91°F for units 1, 2, and 3 at the existing Crystal River plant in Citrus County, Florida.

The Notice of Intent to Issue was published in the Citrus County Chronicle on May 16, 1990.

No comments were received from any concerned citizen on the Department's Intent to Issue the permit. EPA had no comments except to use deionized water for probe wash during a Method 5 particulate stack test.

We received comments from the Florida Power Corporation on many issues which were resolved in a meeting with the Department which resulted in revised specific conditions. The main issue was the frequency of stack testing. Since the Department has no experience and/or data available on helping cooling tower emissions, an agreement was reached with FPC that if the initial and subsequent compliance test results indicate that the particulate emissions are greater than 80% but less than 100% of its allowable limit of 11.89 lbs/hr per cell (stack), the source will be required to conduct another stack test within (30) months. Whereas, a particulate stack test will be required once every five years if the initial and subsequent compliance test results show that particulate emissions are below 80% of the 11.89 lbs/hr allowed limit.

Day 90, after which this permit will be issued by default, is September 23, 1990.

I recommend your approval and signature.

SS/MB/plm

Attachments