Xtra Copy

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

Mr. William C. Bannan
Vice President/Operations Manager
Champion International Corporation
Post Office Box 87
Cantonment, Florida 32533-0087

August 2, 1989

Enclosed is construction permit No. AC 17-164445 which authorizes the construction/installation of a pine wood chip screening system that classifies chips according to thickness rather than length. This system will replace an existing system that classifies chips according to length at your facility in Cantonment, Escambia 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.
Deputy Chief
Bureau of Air Quality Management

Copy furnished to:

E. Middleswart, NW District
D. Smith, P.E.
D. Arceneaux, CIC

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 business on 8-2-89.

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.

Martha J. Wise
Clerk

8-2-89
Date

Final Determination

Champion International Corporation

Pine Wood Chip Thickness Screening System

Permit No. AC 17-164445

Florida Department of Environmental Regulation
Bureau of Air Quality Management
Central Air Permitting

July 28, 1989

Final Determination

The application by Champion International Corporation to replace the existing oversized pine chip thickness screening system that classifies chips according to length with a system that classifies pine chips according to thickness has been reviewed by the Bureau of Air Quality Management. The project is to be located at the kraft pulp mill owned by Champion International Corporation, 375 Muscogee Road, Cantonment, Escambia County, Florida. Public notice of the Department's intent to issue the permits appeared in the Pensacola News Journal on June 25, 1989.

Copies of the Technical Evaluation and Preliminary Determination and associated materials have been available at the Department's Northwest District office in Pensacola, and the Bureau of Air Quality Management office in Tallahassee.

Only one comment was received. The Department's Northwest District Office suggested that the permanent source identification number be changed from 10PEN17004203 to 10PEN17004258. The change has been made.

The final action of the Department is to issue the permit with the amendment described above.

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:
Champion International Corp.
P. O. Box 87
Cantonment, Florida 32533-0087

Permit Number: AC 17-164445
Expiration Date: Dec. 31, 1989
County: Escambia
Latitude/Longitude: 30°36'30"N 87°19'30"W
Project: Installation of a Pine Chip Thickness Screening System

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 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 drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

The replacement of the existing oversized pine chip thickness screening system that classifies chips according to length with a system that classifies pine chips according to thickness. Two chip screens, the No. 2 oversized chip re-chipper, and the No. 2 cyclone separator will be removed. One primary disc screen, one secondary disc screen, one tertiary gyratory screen, one air density separator rotary feeder, one air density separator cyclone (Fisher-Klosterman Model No. XQ120-36-1 or equivalent) and blower, two chip slicers, two gyratory fines screens, and one fines blower and two fines separator cyclones (one Fisher-Klosterman Model No. XQ465-56-1 and one Fisher-Klosterman Model No. XQ120-8-1 or equivalent) will be installed. The fines cyclones will be connected in series. The No. 1 cyclone separator (Rader Companies Model E Type 56 equivalent to Fisher-Klosterman Model No. XQ465-56-1), and the No. 1 oversized re-chipper will be retained.

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. Application for a permit to construct a re-chipper mill received May 3, 1989.

2. P. M. Johnson's letter to M. D. Harley dated May 22, 1989, and received May 24, 1989.

3. P. M. Johnson's letters (two) to M. D. Harley dated June 7, 1989, received June 9, 1989.

4. Technical Evaluation and Preliminary Determination dated June 21, 1989.

5. Final Determination dated July 28, 1989.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

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. Nor 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 does not constitute 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, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, 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.

6. The permittee shall at all times 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, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

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

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

c. Sampling or monitoring 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 notify and provide the Department with the following information:

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

b. the period of noncompliance, including exact 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.

PERMITTEE:
Champion International, Corp.

Permit Number: AC 17-164445

Expiration Date: Dec. 31, 1989

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 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 arising under the Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

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 17-4.12 and 17-30.30, 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 is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

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

14. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the Department, during the course of any unresolved enforcement action.

GENERAL CONDITIONS:

b. The permittee shall retain 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), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be 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 date(s) 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 submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. The pine chip thickness screening system is permitted to operate continuously, i.e. 8,760 hrs./yr.

2. The feed rate of pine wood chips to the pine chip thickness screening system shall neither exceed an hourly maximum of 237 tons/hr. nor a monthly average of 3,287 tons/day. The weight shall be determined on an as fed basis.

3. Visible emissions from the pine chip thickness screening system shall be subject to the following emission limitations:

a. Visible emissions from the No. 1 cyclone separator shall not exceed 5 percent opacity (no visible emissions).

b. Visible emissions from the air density separator shall not exceed 5 percent opacity (no visible emissions).

c. Visible emissions from the fines cyclones shall not exceed 5 percent opacity (no visible emissions).

Visible emissions shall be determined by EPA Method 9 (40 CFR 60 revised as of July 1, 1988).

4. Unconfined particulate emissions shall be controlled pursuant to F.A.C. Rule 17-2.610(3). Reasonable precautions shall include, but shall not be limited to the following:

a. Enclosing or covering all conveyor systems.

b. Maintenance of all drop distances at the minimum necessary for proper operation of the source.

c. Application of water or other dust suppressants where necessary to control emissions.

d. Good housekeeping practices including the regular collection and removal of accumulations of dust and spilled materials.

e. Use of hoods, fans, filters, and similar equipment to contain, capture, and/or vent particulate matter.

5. The permittee shall monitor and record the following parameters whenever the pine chip thickness screening system is in operation:

a. The hourly feed rate of pine chips to the pine chip thickness screening system. The hourly feed rate shall be monitored only during compliance testing, unless otherwise ordered by the Department.

b. The daily feed rate of pine chips to the pine chip thickness screening system.

c. The daily hours of operation of the pine chip thickness screening system.

6. All excess emissions from the pine chip thickness screening system shall be subject to the applicable requirements of F.A.C. Rules 17-2.240 [Circumvention], 17-2.250 [Excess Emissions], and 17-4.130 [Plant Operation Problems].

7. All monitoring and recording systems shall be regularly calibrated and maintained in proper working condition pursuant to written procedures and schedules based on the recommendations of the instrument manufacturer.

8. Point source compliance testing shall be conducted pursuant to the following requirements:

a. Initial compliance testing shall be conducted prior to the expiration date of this permit and annually, thereafter.

b. Point source compliance testing shall be conducted with all sources operating at 90 to 100 percent of operation rate allowed by Specific Condition No. 2.

c. Compliance test reports shall include all of the information required by F.A.C. Rule 17-2.700(7).

d. Compliance test reports shall be submitted within 45 days after completion of the testing.

e. Notification of testing shall be furnished to the DER Northwest District office at least 15 days prior to the date that testing is to commence.

9. For purposes of tracking PSD increment consumption the maximum particulate mass emissions from the pine chip thickness screening system are:

a. 0.006 lb./hr. (0.02 ton/yr.) from the No. 1 cyclone separator.

b. 0.21 lb./hr. (0.60 ton/yr.) from the air density separator.

c. 0.63 lb./hr. (1.59 tons/yr.) from the fines cyclone.

The mass emission increases of particulate matter and PM_{10} for

PERMITTEE:
Champion International Corp.

Permit Number: AC 17-164445

Expiration Date: Dec. 31, 1989

SPECIFIC CONDITIONS:

PSD purposes are estimated to be 2 tons/yr. and 0.7 ton/yr., respectively.

10. The permanent source identification number assigned to the permitted source is 10PEN17004258 pine chip thickness screening system. Please cite this number on all test reports and other correspondence concerning the permitted source.

11. The permittee for good cause, may request that this construction permit be extended. Such request shall be submitted to the BAQM prior to 60 days before the expiration date of the permit (F.A.C. Rule 17-4.090).

12. The application for an operation permit must be submitted to the Northwest District office at least 90 days prior to the expiration date of this construction permit or within 45 days after the completion of compliance testing whichever occurs first. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, and 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. Rule 17-4.220).

Issued this 1st day of August, 1989

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

Dale Twachtmann, Secretary

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

For Routing To Other Than The Addressee	
To:	Location:
To:	Location:
To:	Location:
From:	Date:

Interoffice Memorandum

TO: Dale Twachtmann

FROM: Steve Smallwood

SUBJ: Approval of Construction Permit No. AC 17-164445
Champion International Corporation

DATE: July 28, 1989

Attached for your approval and signature is a permit prepared by Central Air Permitting for the above mentioned company to replace the existing oversized pine chip thickness screening system that classifies chips according to length with a system that classifies pine chips according to thickness. The project is located at the kraft pulp mill owned by Champion International Corporation, 375 Muscogee Road, Cantonment, Escambia County, Florida.

This is not a controversial action.

I recommend your approval and signature.

SS/CH/h

attachments

X'tra TEMPO

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

August 4, 1989

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

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

Dear Ms. Baynard:

Attached is one copy of the Technical Evaluation and Preliminary Determination and proposed permit for Florida Power Corporation to construct helper cooling towers at the Crystal River Plant in Citrus County, Florida.

Please submit any written comments you wish to have considered concerning the Department's proposed action to Mr. Bill Thomas of the Bureau of Air Quality Management.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/pr

Attachments

cc: B. Thomas, SW District
W. Aronson, EPA
C. Shaver, NPS
G. Christensen, PE, Black & Veatch
D. Buff, KBN

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of
Application for Permit by:

Florida Power Corporation
Post Office Box 14042
St. Petersburg, Florida 33233

DER File No. AC 09-162037
PSD-FL-139

INTENT TO ISSUE

The Department of Environmental Regulation hereby gives notice of its intent to issue a permit (copy attached) for the proposed project as detailed in the application specified above. The Department is issuing this Intent to Issue for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, Florida Power Corporation, applied on March 9, 1989, to the Department of Environmental Regulation for a permit to construct four mechanical draft helper cooling towers at the Crystal River Plant in Citrus County, Florida.

The Department has permitting jurisdiction under Chapter 403, Florida Statutes, and Florida Administrative Code Rules 17-2 and 17-4. The project is not exempt from permitting procedures. The Department has determined that an air construction permit is required for the proposed work.

Pursuant to Section 403.815, F.S. and DER Rule 17-103.150, 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, at the address specified 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, 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 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 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, Florida Statutes.

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 in 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 REGULATION

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

Copies furnished to:
B. Thomas, SW District
W. Aronson, EPA
C. Shaver, NPS
G. Christensen, PE, Black & Veatch
D. Buff, KBN

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF INTENT TO ISSUE and all copies were mailed before the close of business on 8-4-89.

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.

Martha J. Wise 8-4-89
Clerk Date

State of Florida
Department of Environmental Regulation
Notice of Intent to Issue

The Department of Environmental Regulation hereby gives notice of its intent to issue a permit to Florida Power Corporation, Post Office Box 14042, St. Petersburg, Florida 33233, to construct four mechanical draft helper cooling towers at the Crystal River Plant in Citrus County, Florida.

In accordance with Rule 17-2.500 of the Florida Administrative Code, a Prevention of Significant Deterioration (PSD) Review was required for the project. The pollutants total suspended particulate (TSP) and particulate matter less than 10 microns (PM10) were evaluated. The TSP emissions from the saltwater helper cooling towers are expected to be 200.2 lbs/hr and 432.5 tons per year. A determination of Best Available Control Technology (BACT) for emissions of particulate matter was required. A discussion of how the BACT was determined is included in the Department's preliminary determination.

The maximum degree of TSP increment consumed is as follows:

Area	24-hr ug/m^3	% consumed	Annual ug/m^3	% consumed
Class I	2	20	1	20
Class II	36	97	6	32

The maximum predicted pollutant concentrations from the helper cooling towers are projected to be less than the National Ambient Air Quality Standards (NAAQS). The NAAQS are levels set by the EPA which identify the ambient concentration necessary to protect human health and welfare with an adequate margin of safety.

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. 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 fourteen (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, Florida Statutes.

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, F.A.C.

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 Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dept. of Environmental Regulation
Southwest District Office
4520 Oak Fair Blvd.
Tampa, Florida 33610-7347

Any person may send written comments on the proposed action to Mr. Bill Thomas at the Department's Tallahassee address. All comments mailed within 30 days of the publication of this notice will be considered in the Department's final determination.

Technical Evaluation
and
Preliminary Determination

Florida Power Corporation
Crystal River, Citrus County, Florida

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 Quality Management
Central Air Permitting

August 2, 1989

I. Application

A. Applicant

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

B. Project and Location

The applicant, Florida Power Corporation (FPC), proposes to construct four mechanical draft helper cooling towers for power generating units 1, 2, and 3, to reduce the discharge water temperature at the existing Crystal River Plant in Citrus County, Florida.

The UTM coordinates of the facility are Zone 17, 333.8 km East and 3204.5 km North.

C. Facility Category

The Crystal River Plant is a major facility in accordance with Chapter 17-2 of the Florida Administrative Code (F.A.C.). The proposed project will be a major modification to a major facility. The Standard Industrial Classification (SIC) Code for this plant is Industry No. 4931, Electric Services.

The NEDs Source Classification Code (SCC) for cooling towers is 3-12-999-99 Miscellaneous Machinery (tons processed).

FPC's application was received on March 9, 1989, and was deemed complete on May 30, 1989.

II. Project Description

In order to comply with the NPDES permit for the plant's discharge water temperature, FPC will construct mechanical draft helper cooling towers. Four towers with nine cells each and a total of 36 fans will cool about 687,000 gpm from 102.4°F to 91°F so as to maintain the plant's discharge water temperature at 96.5°F (3-hour average), or 97°F maximum. Drift from the cooling towers will be controlled by Munter's high efficiency drift eliminators.

When the sea (salt) water is sprayed through the tower, the fan induced air flow causes evaporative cooling. Water vapor, salt water droplets, and salt particles are emitted from the towers. It should be noted that saltwater spray is also generated by natural wave action in the nearby Gulf of Mexico. The drift eliminators are expected to be 99.8% efficient. However, the key problem in the evaluation of this project is the determination of the quantity of emissions from the towers. Several test methods have been evaluated.

Sensitive paper is currently used for testing natural draft cooling towers. However, this method is not appropriate for detecting the smaller particle sizes expected from the mechanical draft cooling towers. A modified EPA Method 13A has been used in testing for chromium emissions, and recently for salt water drift emissions. The results from these limited tests showed alarmingly large scatter, thus questioning its validity. Although EPA Method 5 has not been used for testing cooling tower emissions, it is widely used in determining particulate emissions from other sources and may be an appropriate method in this case also. The most widely used method currently in use, adopted by the Cooling Tower Institute, is an isokinetic method using glass bead packing. This method has not been adopted by DER.

For the purposes of determining the emissions from the proposed mechanical draft cooling towers, the Department will accept EPA Method 5, or any other equivalent method approved by DER. At a later date, should data be available to justify the use of some other test method, the Department will re-evaluate the testing requirements, upon request. The total suspended (TSP) particulate matter emissions from the cooling towers are estimated to be 200.2 lbs/hr and 432.5 tons per year (TPY). No accurate data is available on the quantity of particulates less than 10 micrometers in diameter (PM10).

The applicant has also provided a list of fugitive dust emission sources at the facility. Emissions estimates shown on Table 2 have been calculated based on AP-42 emission factors. Fugitive dust emissions which were not included previously in increment consumption analysis have been included in this evaluation. The total fugitive TSP and PM10 emissions from the facility are estimated to be 64.6 and 39.5 tons per year, respectively.

II. Rule Applicability

The proposed project will emit particulate matter and is subject to a preconstruction review in accordance with Chapters 17-2 and 17-4, F.A.C. and Chapter 403 of the Florida Statutes.

The proposed project is located in Citrus County, an attainment area for all the criteria pollutants, in accordance with F.A.C. Rule 17-2.420.

The proposed project is within 100 km of the Chassahowitzka National Wilderness Area, designated as a Class I area in accordance with F.A.C. Rule 17-2.440.

The proposed project is subject to Prevention of Significant Deterioration (PSD) Review Requirements in accordance with F.A.C. Rule 17-2.500(2)(d)4.

The proposed project is subject to a Best Available Control Technology (BACT) determination in accordance with F.A.C. Rule 17-2.630.

The proposed project is subject to emission testing and reporting requirements, in accordance with F.A.C. Rule 17-2.700. Emission testing will be conducted using EPA Method 5, or any other equivalent method approved by the DER.

IV. Source Impact Analysis

A. Emission Limitations

In accordance with the attached BACT determination, the emissions of (drift) particulates from the helper cooling towers will be restricted to 0.002% of the water circulation rate. At a rate of 687,000 gpm, the allowable particulate emission rate will be 200.2 lbs/hr and 432.5 TPY, while operating for 4,320 hrs/year (180 days per year).

B. Air Quality Impact Analysis

Florida Power Corporation (FPC) is proposing to construct helper cooling towers for Units 1, 2, and 3 at their Crystal River power plant. The four towers proposed will process 687,000 gallons per minute of heated cooling water taken from the Gulf of Mexico. The salt contained in this water, as it's released in the evaporation plume, is a source of particulate matter (PM).

The proposed helper cooling towers are expected to operate a maximum of 180 days per year, centering on the summer months. They will be used on an as-needed basis to assure that the outflow water temperature remains at or below the 96.5°F limit contained in the NPDES permit.

Particulate matter emissions from these helper cooling towers are estimated to be 432 tons per year. It is further estimated that less than 5 percent of these emissions (21 tons per year) are of particulates less than or equal to 10 micrometers in diameter (PM10). Both the total particulates and the PM10 emissions are greater than the PSD-significant emission levels for applicability to the Prevention of Significant Deterioration (PSD) rules and regulations contained in Rule 17-2.500 of the Florida Administrative Code. The air quality analysis required by the PSD regulations for these pollutants includes:

- An analysis of existing air quality;
- A PSD increment analysis;
- An Ambient Air Quality Standards (AAQS) analysis;

- An analysis of impacts on soils, vegetation, visibility, and growth-related air quality impacts; and,

- A "Good Engineering Practice" (GEP) stack height determination.

The analysis of existing air quality generally relies on preconstruction monitoring data collected in accordance with EPA-approved methods. The PSD increment and AAQS analyses depends on the air quality dispersion modeling carried out in accordance with EPA guidelines.

Based on these required analyses, the Department has reasonable assurance that the proposed facility, as described in this permit, will not cause or contribute to a violation of any PSD increment or ambient air quality standard.

Analysis of Existing Air Quality

Preconstruction ambient air quality monitoring may be required for all pollutants subject to PSD review. In general, one year of quality assured data using an EPA reference, or the equivalent, monitor must be submitted. Sometimes less than one year of data, but not less than four months may be accepted when Department approval is given.

An exemption to the monitoring requirement can be obtained if the maximum air quality impact, as determined through air quality modeling, is less than a pollutant-specific deminimus concentration. In addition, if current monitoring data already exist and these data are representative of the proposed source area, then at the discretion of the Department these data may be used.

Two particulate matter monitors are located within close proximity of the Crystal River plant. These monitors measure total suspended particulates (TSP) and are operated by Florida Power Corporation. Two years of recent data from each of these monitors are shown on Table 1. The applicant has proposed that the data from station number 2 (the closest monitor to the plant) best represents the particulate levels in and around the plant. Since the applicable ambient air quality standard is based on particulate matter less than or equal to 10 micrometers in diameter (PM10), a conservative estimate of the background concentration levels of these particulates is made by assuming a PM10 background concentration equal to the TSP background concentration. Based on these data an annual average background concentration of 26 ug/m^3 is estimated with a maximum 24-hour average background of 54 ug/m^3. No attempt was made to substract out the contribution of particulates from existing particulate sources at the Crystal River plant.

Modeling Methodology

The Industrial Source Complex Short-Term (ISCST) model (version 6-88167) was used to evaluate the particulate emissions from all sources at the Crystal River plant. All modeling completed by the applicant followed the EPA Guidelines on Air Quality Models (Revised), w/Supplement A (1987). The ISCST model is a general air quality dispersion model capable of evaluating a wide variety of source types and dispersion situations. The model will estimate ground-level concentrations of small particles emitted into the atmosphere by point, area, or volume-type sources. It incorporates elements for plume rise, transport by the mean wind, and Gaussian dispersion. In addition, the model allows for the separation of sources, particulate deposition, building wake downwash, adjustment for calm conditions, and various other input and output features.

Five years of sequential hourly meteorological data (1982-1986) from the National Weather Service Office in Tampa were used in the model. The data collected at this site is considered to be representative of conditions in the area of the Crystal River plant. Since five years of data were used, the highest, second-high short-term predicted concentrations are compared with the appropriate ambient standards.

The stack and emission characteristics used in the model are listed in Table 2. These sources include the proposed new helper cooling towers, the existing cooling towers for Units 4, and 5, the power generation units 1, 2, 4, and 5, and numerous fugitive emissions sources for coal and lime storage and handling. These sources represent all particulate sources in the area of the Crystal River plant. Other sources, at distances away, were not explicitly modeled but are accounted for in the estimated background concentration.

Maximum concentrations were predicted along the plant boundary surrounding the Crystal River site. The contributions due to the proposed helper cooling towers, the PSD increment consuming sources, and all sources together were each calculated. Additional receptors were placed along the northern border of the Chassahowitzka National Wildlife Refuge Class I area (approximately 21 kilometers to the south) to evaluate the PSD increment consumption. A summary of the modeling results is given in Table 3.

A more detailed description of the modeling analysis, along with the model output, is contained in the FPC Crystal River application for the helper cooling towers. The Department has reviewed the applicant's analysis and has found that it conforms with the guidelines established by the EPA and followed by the Department.

PSD Increment Analysis

The PSD increments represents the maximum allowed ambient concentration increase due to new sources of air pollution constructed after a baseline date. The allowed increases are different for different areas of the State. Two classes of areas are defined in the State, Class I areas, of which there are four in the State, and Class II areas, everywhere else. The Class I area increments for total particulates are 5 ug/m^3, annual average, and 10 ug/m^3, 24-hour average. For Class II areas they are 19 ug/m^3, for an annual average and 37 ug/m^3, for a 24-hour average.

The proposed helper cooling towers, along with most other sources of particulate matter at the Crystal River plant, are increment consuming. Only the sources associated with the Units 1 and 2 power generators are not. No other sources in the area surrounding the Crystal River site have been identified as increment consuming. The increment consuming sources at the plant are identified on Table 2.

The Crystal River plant is located in a Class II area. In the area immediately surrounding the plant the increased emissions from new sources were modeled and the increased concentrations compared with the allowed Class II increments. The results show that, off plant property, the maximum increase in particulate matter concentration is 6 ug/m^3, annual average and 36 ug/m^3, 24-hour average. Both of these estimates are less than the allowed Class II increment.

The Crystal River plant is located approximately 21 kilometers from the Chassahowitzka National Wildlife Refuge Class I area. As such, an analysis of the expected increased concentration level of particulates in this area is required. The maximum increases in particulate matter are predicted to be less than 1 ug/m^3, annual average and 2 ug/m^3, 24-hour average. Both of these estimates are less than the allowed Class I increments.

Ambient Air Quality Standards (AAQS)

An ambient air quality standard is defined for particulate matter less than or equal to 10 micrometers in diameter (PM10). The total concentration at a location should not exceed this standard. The estimation of the total impact in the area surrounding the Crystal River plant is determined by adding the maximum predicted modeled concentration to an estimated background concentration.

All sources of particulates in and around the Crystal River plant were included in the modeling. The emissions of particulates calculated for each source were of total

particulates, of which PM10 is a subset. As such, the predicted maximum concentrations represent an over-estimate of the actual PM10 concentrations. Likewise, the estimated background concentration is based on total particulates and, thus, represents an over-estimate of the background sources.

The results of the AAQS analysis shows that the maximum predicted PM10 concentrations, off plant property, are 33 ug/m^3, annual average and 91 ug/m^3, 24-hour average, including a background concentration. These values are well below the AAQS for PM10 of 50 ug/m^3, annual average and 150 ug/m^3, 24-hour average. Table 4 summarizes these results.

Given existing air quality in the area of the Crystal River plant, the emissions from the proposed helper cooling towers are not expected to cause or contribute to an exceedance of the AAQS for PM10.

Additional Impacts Analysis

1. Impacts on Soils and Vegetation

The maximum ground-level concentration of PM10 is predicted to be less than the air quality standard. This standard is defined as both a primary and a secondary standard. The secondary standard is the level below which public welfare-related values, such as soils and vegetation, are protected.

The effects of salt particulate deposition on nearby vegetation and soils, as a result of the emissions from salt water cooling towers, is an issue of concern to local citizens. The applicant evaluated the estimated salt deposition due to the cooling towers in a separate document submitted to the Department. Maximum deposition rates, off plant property, were less than about 10 g/m^2-yr. This amount of deposition is not expected to cause any significant effects on soils or vegetation. The applicant is, however, continuing and expanding its salt deposition monitoring program and its periodic independent assessment of biology in the area surrounding the facility.

The potential impact of the increased emissions of the proposed helper cooling towers on the Class I area are expected to be minimal. Predicted concentration increases are less than the increment and this small amount of salt particulate added to a large natural background is not expected to affect the predominately salt water marsh-type area of the Refuge.

2. Impacts on Visibility

A Level-1 visibility screening analysis was performed by the applicant to evaluate the proposed helper cooling tower's

impact on the Class I area. The results of this analysis show that the increased particulate loading by the helper cooling towers themselves will not significantly impair visibility in the Class I area.

3. Growth-Related Air Quality Impacts

The proposed construction and operation of the helper cooling towers is not expected to significantly change employment, population, housing, or commercial/industrial development in the surrounding area to the extent that a significant air quality impact will result.

4. GEP Stack Height Determination

Good Engineering Practice (GEP) stack height is defined as the greater of: (1) 65 meters or (2) the maximum nearby building height plus 1.5 times the building height or projected width, whichever is less. Applicants cannot take credit for additional pollutant dispersion from stacks built higher than GEP stack height. The proposed helper cooling towers have a stack height of 16.2 meters.

The potential for building wake downwash effects were not considered by the applicant because the nearest off plant property receptors are 950 meters from the proposed helper cooling towers. This distance is far beyond the range for which building wake effects would impact the results.

V. Conclusion

Based on the information provided by FPC, the Department has reasonable assurance that the proposed construction of FPC's helper cooling towers for units 1, 2, and 3, as described in this evaluation, and subject to the conditions proposed herein, will not cause or contribute to a violation of any air quality standard, PSD increment, or any other technical provision of Chapter 17-2 of the Florida Administrative Code.

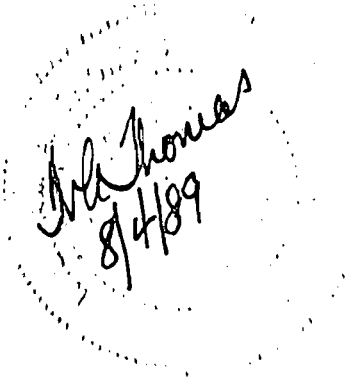

Table 1

Florida Power Corporation Crystal River Power Plant
Summary of Particulate Matter Monitoring Data

Station Number	Time Period	Number of Samples	Percent Data Capture	Annual Geometric Mean (ug/m**3)	Observed 24-Hour Maximum (ug/m**3)	Observed 24-Hour 2nd Maximum (ug/m**3)
2	July 1985-June 1986	57	96.6	24	46	44
	July 1986-June 1987	58	96.7	26	57	54
4	July 1985-June 1986	54	91.5	32	76	61
	July 1986-June 1987	59	98.3	42	95	88

Note: Particulate matter measured as total suspended particulate

Source: Florida Power Corporation

Table 2

Florida Power Corporation Crystal River Power Plant
Source and Emission Characteristics

Source Number		Source Description	Location (m) * X	Location (m) * Y	Height (m)	Area (m2)	Actual Width (m)	Modeled Width (m)	Basis of Emission Rate Scalars	Particulate Emissions (lb/day)	Particulate Emissions (g/s)	Particulate Emissions (g/s/m2)
10		Unit 4/5 Active Ash Pile (wind erosion)	1948	460	12.0	10,118	100.6	100.0	Wind > 12 mph	53	0.28	0.0000277
11		Haul Road to Unit 4/5 Active Ash Pile	1948	460	12.0	10,118	100.6	100.0	12 hr/day	30	0.32	0.0000315
12		Unit 4/5 Coal Transfer	690	-753	3.0	145,352	381.3	380.0	24 hr/day	11	0.06	0.0000004
20		Unit 4/5 Inactive Ash Pile (wind erosion)	1876	393	24.4	15,177	123.2	125.0	Wind > 12 mph	40	0.21	0.0000133
21		Unit 4/5 Inactive Ash Pile (wind erosion)	2000	393	24.4	15,177	123.2	125.0	Wind > 12 mph	40	0.21	0.0000133
30		Unit 4/5 Inactive Coal Pile (wind erosion)	1380	563	3.0	22,764	150.9	150.0	Wind > 12 mph	41	0.22	0.0000096
32		Unit 4/5 Inactive Coal Pile (wind erosion)	1380	381	3.0	22,764	150.9	150.0	Wind > 12 mph	41	0.22	0.0000096
34		Unit 4/5 Inactive Coal Pile (wind erosion)	1561	563	3.0	22,764	150.9	150.0	Wind > 12 mph	41	0.22	0.0000096
35		Unit 4/5 Inactive Coal Pile (wind erosion)	1561	381	3.0	22,764	150.9	150.0	Wind > 12 mph	41	0.22	0.0000096
31		Unit 4/5 Active Coal Pile (maintenance)	1380	563	3.0	22,764	150.9	150.0	24 hr/day	64	0.33	0.0000148
33		Unit 4/5 Active Coal Pile (maintenance)	1380	381	3.0	22,764	150.9	150.0	24 hr/day	64	0.33	0.0000148
40	+	Unit 1/2 Bottom Ash (wind erosion)	145	12	5.0	125,457	354.2	350.0	Wind > 12 mph	360	1.89	0.0000154
41	+	Unit 1/2 Bottom Ash Pile (Progress Materials)	145	12	5.0	125,457	354.2	350.0	12 hr/day	78	0.82	0.0000067
50		Ideal Basic (wind erosion)	-97	-363	5.0	91,058	301.8	300.0	Wind > 12 mph	41	0.22	0.0000024
51		Ideal Basic (general operation)	-97	-363	5.0	91,058	301.8	300.0	24 hr/day	13	0.07	0.0000008
52		Ideal Basic Quarry (wind erosion)	600	3000	3.8	3,147	56.1	56.1	Wind > 12 mph	28	0.14	0.0000459
53		Ideal Basic Quarry (general operation)	600	3000	3.8	3,147	56.1	56.1	12 hr/day	117	1.84	0.0005858
60	+	Unit 1/2 Inactive Coal Pile (wind erosion)	460	-753	5.0	36,423	190.8	190.0	Wind > 12 mph	49	0.26	0.0000071
61	+	Unit 1/2 Inactive Coal Pile (wind erosion)	460	-753	5.0	36,423	190.8	190.0	Wind > 12 mph	49	0.26	0.0000071
62	+	Unit 1/2 Active Coal Pile (maintenance)	460	-753	5.0	36,423	190.8	190.0	24 hr/day	106	0.56	0.0000154

* Relative to helper cooling towers

\+ Not a PSD increment consuming source

Table 2 (continued)

Florida Power Corporation Crystal River Power Plant
Source and Emission Characteristics

Source Number	Source Description	Location (m) * X	Location (m) * Y	Stack Height (m)	Diameter (m)	Velocity (m/s)	Temperature (K)	Particulate Emissions (lb/hr)	Particulate Emissions (g/s)
100	Units 1-3 Helper Cooling Towers	0	0	15.2	10.52	6.20	306.0	198	25.00
110	Unit 4 Cooling Tower	714	508	135.0	65.20	3.32	311.0	175	22.10
120	Unit 5 Cooling Tower	714	690	135.0	65.20	3.32	311.0	175	22.10
130	Units 4 and 5 Power Generation	1077	786	178.2	7.77	21.03	396.0	1251	157.60
135	Unit 4 and 5 Coal Baghouses	932	786	42.7	0.84	21.20	310.0	7	0.88
140 +	Unit 2 Power Generation	677	-750	153.0	4.88	48.77	422.0	463	58.30
150 +	Unit 1 Power Generation	750	-750	152.0	4.57	40.54	417.0	364	45.90
160	Progress Material Baghouses	517	-113	18.3	0.61	11.40	325.0	2	0.21

* Relative to Units 1-3 Helper Cooling towers

\+ Not a PSD increment consuming source

Table 2 continued

Summary of Fugitive Dust Emissions, Crystal River Power Plant

Source	Max. 24-Hr Emissions (lb/day)		Annual Avg. Emissions (TPY)	
	TSP	PM10	TSP	PM10
CR 4/5 Active Ash Storage:				
Transfer operations	0	0	0.023	0.011
Wind erosion	53	53	1.226	1.226
Vehicular traffic	30	13	3.034	1.365
CR 4/5 Inactive Ash Storage				
Wind erosion	79	79	1.839	1.839
CR 4/5 Coal Pile:				
CR 4/5 Transfer operations	36	18	3.440	1.689
Wind erosion	163	163	3.780	3.780
Pile maintenance/traffic	102	46	17.304	7.787
Ash transfer	0	0	0	0
CR 1/2 Bottom Ash Storage:				
• Transfer	0	0	0.006	0.003
• Wind erosion	359	359	8.338	8.338
Progress Materials:				
Transfer	1	0	0.064	0.031
Vehicular traffic	77	35	6.256	2.815
Wind erosion	1	1	0.200	0.200
Ideal Basic:				
Transfer	4	2	0.064	0.031
Vehicular traffic	9	4	0.002	0.001
Wind Erosion	41	41	0.940	0.940
CR 1/2 Coal Pile:				
• CR 1/2 Transfer operations	24	12	1.870	0.924
• Wind erosion	98	98	2.269	2.269
• Pile maintenance/traffic	82	37	13.942	6.274

• Not a PSD increment consuming source

Table 3

Florida Power Corporation Crystal River Power Plant
Screening Model Runs -- Receptors Along Plant Boundary

Proposed Helper Cooling Towers

Year	Max. Annual (ug/m**3)	Distance (m)	Direction (deg)	Max. 24-Hour (ug/m**3)	Distance (m)	Direction (deg)	Day (Julian)	2nd Max. 24-Hour (ug/m**3)	Distance (m)	Direction (deg)	Day (Julian)
1982	1.4	950	230	15.1	950	230	312	10.8	950	230	272
1983	1.3	950	230	13.2	950	230	354	9.5	950	230	294
1984	1.3	950	230	12.1	1600	250	351	8.8	1500	240	165
1985	1.2	1500	240	11.8	950	230	259	11.1	950	230	260
1986	1.2	950	230	15.3	1600	250	263	11.0	950	230	8

All Modeled Sources

Year	Max. Annual (ug/m**3)	Distance (m)	Direction (deg)	Max. 24-Hour (ug/m**3)	Distance (m)	Direction (deg)	Day (Julian)	2nd Max. 24-Hour (ug/m**3)	Distance (m)	Direction (deg)	Day (Julian)
1982	6.4	950	230	42.1	2250	70	235	35.6	2200	75	185
1983	5.8	950	230	54.3	2150	60	314	33.9	2150	60	257
1984	6.4	950	230	40.9	2200	75	231	36.7	2200	80	224
1985	6.3	2200	75	39.1	2200	75	179	37.0	2200	75	152
1986	6.5	2200	75	41.9	2200	80	228	35.7	2200	75	213

PSD Class I Increment Analysis

Year	Max. Annual (ug/m**3)	Distance (m)	Direction (deg)	Max. 24-Hour (ug/m**3)	Distance (m)	Direction (deg)	Day (Julian)	2nd Max. 24-Hour (ug/m**3)	Distance (m)	Direction (deg)	Day (Julian)
1982	0.1	21200	175	1.6	21100	180	67	1.4	21100	177	67
1983	0.1	21100	180	1.7	21100	180	84	1.3	21300	172	167
1984	0.1	21100	180	2.1	21100	180	328	1.5	21100	180	342
1985	0.1	21100	177	1.9	21100	180	354	1.2	21100	180	279
1986	0.1	21100	177	2.4	23800	155	56	2.1	23300	155	56

Table 3 (Continued)

Florida Power Corporation Crystal River Power Plant

Screening Modeling-- Receptors along plant boundary

PSD Class II Increment Analysis

Year	Max. Annual (ug/m**3)	Distance (m)	Direction (deg)	Max. 24-Hour (ug/m**3)	Distance (m)	Direction (deg)	Day (Julian)	2nd Max. 24-Hour (ug/m**3)	Distance (m)	Direction (deg)	Day (Julian)
1982	4.6	950	250	40.2	2250	70	235	32.6	2200	75	185
1983	5.0	2200	75	45.1	2150	60	314	32.5	2200	80	45
1984	5.3	2200	75	38.1	2200	75	231	35.8	2200	80	224
1985	6.0	2200	75	37.4	2200	80	136	34.5	2200	75	152
1986	6.1	2200	75	41.8	2200	80	228	32.6	1550	45	205

Refined Model Results--Receptor Resolution 100 m range by 2 deg. azimuth

PSD Class II Increment Analysis

Year	Days	Max. 24-Hour (ug/m**3)	Distance (m)	Direction (deg)	Day	2nd Max. 24-Hour (ug/m**3)	Distance (m)	Direction (deg)	Day
1982	185, 235	42.9	2200	77	185	32.6	2200	75	185
1983	30, 220	32.7	1700	50	30	32.6	1700	50	220
1984	174, 224	40.5	2200	78	224	35.8	2200	80	224
1985	152, 179	40.7	2200	77	152	34.5	2200	75	152
1986	205, 344	38.0	1550	45	344	32.6	1550	45	205

Table 4

Florida Power Corporation Crystal River Power Plant
Comparison With Ambient Air Quality Standards

Year/ Averaging Period	Proposed Helper Cooling Towers (ug/m**3)	All Modeled Sources (ug/m**3)	Estimated Background (ug/m**3)	Max. Predicted PM10 Conc. (ug/m**3)	PM10 AAQS (ug/m**3)
Annual					
1982	1.4	6.4	26	32	50
1983	1.3	5.8	26	32	
1984	1.3	6.4	26	32	
1985	0.3	6.3	26	32	
1986	0.3	6.5	26	33	
24-Hour					
1982	<4.4	35.6	54	90	150
1983	<3.7	33.9	54	88	
1984	<3.4	36.7	54	91	
1985	<4.5	37.0	54	91	
1986	<4.2	35.7	54	90	

Note: For the 24-hour values listed under the proposed cooling towers, the concentration listed is the maximum contribution at the location of the maximum for all modeled sources. The actual contribution, at the same location and time, would be less.