UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV
345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

APR 02 1990

4APTMD-APB-cdw

Mr. Clair H. Fancy, P.E., Chief
Bureau of Air Regulation
Florida Department of Environmental
Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RE: Florida Power Corporation, Crystal River Cooling Towers, PSD Permit FL-139

Dear Mr. Fancy:

EPA Region IV has reviewed the January 1990 supplemental analysis "Particulate Matter Air Quality Impact Assessment for Proposed Helper Cooling Towers for Units 1, 2, and 3 Crystal River Plant."

Based on the proposed emission limits, EPA's review finds that the Prevention of Significant Deterioration (PSD) increments and the National Ambient Air Quality Standards (NAAQS) for particulate matter will be protected. In addition, we believe that there will be no adverse effects on the surrounding vegetation due to salt deposition.

Sincerely yours,

Jewell Harper, Chief
Air Enforcement Branch
Air, Pesticides, and Toxics
Management Division

Florida Power
CORPORATION

RECEIVED
MAR 19 1990
DER - BAQM

March 12, 1990

Mr. Lou Nagler
U.S. Environmental
Protection Agency
Region IV
345 Courtland Street NE
Atlanta, Georgia 30365

Dear Mr. Nagler:

Re: Crystal River Units 1, 2, 3 - Helper Cooling Towers

In Florida Power Corporation's (FPC) February 5, 1990 submittal to the Environmental Protection Agency (EPA) (cc: to Wayne Aronson; FPC letter to W. A. Thomas, Florida Department of Environmental Regulation) there is reference to an EPA/Entropy report providing a particle size distribution for particulate matter omissions expected from the Crystal River Helper Cooling Towers. You verbally requested the specific reference from Mr. Robert McCann, (KBN Engineering). In response to that request the following reference has been provided by Environmental Systems Corporation, Knoxville, Tennessee.

> "NESHAP Cooling Tower Chromium Emissions Test Report", Exxon Company USA Baytown, TX, EMB Report 85-CCT-3, Office of Air Quality Planning and Standards, Research Triangle Park, November 1986.
>
> Authors: EPA - Dan Bivens, #1-919-781-3550
> Entropy Environmentalists - Bill DeWess #1-800-368-7679

Please contact me at (813)866-4387 if you have any further questions.

W. Jeffrey Pardue
Supervisor, Air and Water Programs

mjs

cc: W. A. Thomas - DER Tallahassee
R. McCann - KBN Engineering
W. Aronson - EPA Atlanta
P. Raval
B. Andrews
T. Rogers

PR / Sec

Florida Power
CORPORATION

RECEIVED
MAR 9 1990
DER - BAQM

March 5, 1990

Mr. William A. Thomas
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Thomas:

Re: Crystal River Helper Cooling Towers - AC09-162037,PSD-FL-139

In Florida Power Corporation's (FPC) letter to you on February 5, 1990 final drift testing results were expected to be submitted to the Department of Environmental Regulation (DER) and the Environmental Protection Agency (EPA) by February 19, 1990. Unforseen delays have caused the submittal to be postponed until now. The delay has been discussed previously with Mr. Pradeep Raval of your staff.

Enclosed are two copies of Black & Veatch's report on Phase III Drift Tests, February 1990. Please note that the conclusions support FPC's previous comments regarding the use of distilled water as a solvent in the test procedure and our comments on the proposed drift rate. This completes FPC's data submittal with respect to the referenced permit.

Please contact Mr. W. Jeffrey Pardue (813)866-4387 of my staff if you have any questions.

Sincerely,

for P. Y. Baynard, Director
Environmental and Licensing Affairs

wjp/mjs

cc: Wayne Aronson, EPA Atlanta, w/attachment
Richard Garrity, FDER Tampa, w/attachment
Pradeep Raval, FDER Tallahassee

Florida Power
CORPORATION

February 5, 1990

RECEIVED
FEB 6 1990
DER - BAR

Mr. William A. Thomas
Florida Department of
Environmental Regulation
2600 Blair Stone Rd.
Tallahassee, Florida 32399-2400

Dear Mr. Thomas:

Re: Crystal River Helper Cooling Towers - AC09-162037, PSD-FL-139

On August 21, 1989, Florida Power Corporation (FPC) submitted comments to the Department of Environmental Regulation (DER) expressing concern regarding the reliability and repeatability of drift test data produced by EPA Method 5 and Method 13a. These methods were specified in the DER PSD permit issued on August 4, 1989. To address these concerns, FPC stayed the final issuance of the PSD permit by requesting an extension of time in which FPC could file a request for administrative hearing on the permit. The purpose of the extension was to provide time for FPC to conduct a study to evaluate the three known test methods for measuring particulate emissions. The following comments are offered in response to DER's PSD/Air Construction permit.

Phase I of this study evaluated EPA Methods 5 and 13a and the Hot Bead Isokinetic Test Procedure recommended by a test consultant. The study established Method 5 as the preferred test method. Since the results from the Phase I study indicated drift rates higher than had been expected, a second Phase of the study was implemented to evaluate alternative cooling tower designs to provide a technical basis for selecting optimum design for minimizing particulate emissions. Results of this study are presented in Source Testing Methodology Evaluation for the Proposed Crystal River Units 1, 2, and 3 Helper Cooling Towers - Phase II Testing (Attachment A).

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Company: FLORIDA POWER CORP

Department/Floor No:

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City: T PETERSBURG State: FL ZIP Required: 3 3 7 1 1

To (Recipient's Name) Please Print

William Thomas

Recipient's Phone Number (Very Important): ( ) 33 2

Company: Florida Department of Environmental Regulation

Department/Floor No:

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City: Tallahassee State: FL ZIP Required: 32399-2400

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Near the end of Phase II testing, it was determined that the acetone rinse, specified in Method 5, was not effective for recovering the complete drift sample. A distilled water rinse following the acetone was found to be a much more effective solvent. FPC will be conducting some additional comparison testing beginning February 5, 1990. If the additional testing produces results consistent with the acetone/distilled water rinse near the end of Phase II testing, FPC proposes that the distilled water rinse be specified in the permit.

On October 10 and 11, 1989, FPC's test consultant, Environmental Systems Corporation (ESC), contacted Mr. Paul Reinerman at EPA. Mr. Reinerman agreed that analysis of the impinger catch was not necessary for calculating particulate emissions. FPC concurs and requests that the impinger catch be specifically excluded from drift emission calculations as defined in the permit.

FPC proposes to construct either 4 towers with 9 cells each or 4 towers with 10 cells each. Drift testing will be an extended process because the solids content of water at Crystal River will be 1/2 to 1/3 of that used in the test cell. In order to collect sufficient particulate matter for gravimetric analysis, the test period may be 20 or more hours. Since all cells are equivalent in a rectangular bank of towers, FPC proposes that the permit specify compliance testing on a randomly selected 10% of the cells. Drift rate should be calculated as an average of the cells tested.

On August 23, 1989, FPC submitted comments on DER's Technical Evaluation and Preliminary Determination. FPC reaffirms those comments for DER's consideration in a revised PSD permit.

Based on the ESC report, 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. Therefore to allow adequate margin for test uncertainty, scale-up factors, and operation/maintenance margin, FPC proposes that the permitted drift limit be 0.004%.

KBN Engineering has performed a PSD analysis for the 36 cell and 40 cell helper cooling tower options. Results of that analysis indicate that both the Particulate Matter Total Suspended Particulate (PM-TSP) and Particulate Matter less than 10 microns (PM-10) increments are met (Attachment B).

McVehil-Monet performed deposition modeling of the combined effects of Crystal River Units 1, 2, and 3 helper cooling towers and Crystal River Units 4 and 5 natural draft cooling towers. The model generated isopleths presented in Attachment C indicate that the off-site deposition (with revised particle size distribution) is less than originally predicted. Deposition impacts would, therefore, be less than those projected when the PSD permit and technical evaluation were issued in August, 1989. Additionally, Section 5.0 of KBN's report concludes that environmental impacts to soils and vegetation would be less than originally predicted.

Florida Power Corporation expects to complete final drift testing and submit that data to DER and EPA by February 19, 1990. Approximately $200,000 has been expended to develop a technical database for establishing drift emission characteristics. With these reports and FPC's other comments, we have provided a sound basis to revise the PSD/Air Construction permit. If you have any questions, please contact Mr. W. Jeffrey Pardue of my staff at (813)866-4387.

Sincerely,

Patsy Yeates Baynard, Director
Environmental and Licensing Affairs

wjp/cck
Attachments

cc Wayne Aronson, EPA Atlanta, w/attachment
Richard Garrity, DER Tampa, w/attachment
Pradeep Raval, DER Tallahassee

copied P. Raval
B. Andrews
T. Rogers
C. Shaver
CHA/BT
PR
2-6-90

Steve Smallwood
hand

Florida Power

RECEIVED
OCT 23 1989
Office of the Secretary

October 19, 1989

Mr. Dale Twachtmann, Secretary
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Dear Mr. Twachtmann:

Re: Intent to Issue, Citrus County, Florida Power Corporation Crystal River Power Plant
FDER File Number AC09-162037, PSD-FL-139

On August 21, 1989, Florida Power Corporation (FPC) requested an extension of time until October 31, 1989, in which to file a petition for administrative hearing under Section 120.57 F.S. concerning the subject Intent to Issue. The extension was requested in order to resolve issues related to the proposed test method for measuring particulates from the proposed helper cooling towers.

Be advised that an attempt to obtain comparative data from a vendor failed, which meant that FPC had to find a suitable test facility and arrange for a time period to perform the necessary tests. This took time, but comparative tests between Methods 5, 13A, and Hot Glass Dead Isokinetic have been scheduled and are being accomplished at the Ceramic Cooling Tower Company's facility in Forth Worth, Texas. These tests will not be completed in time to meet the October 31, 1989, deadline.

Regretfully, I must request an additional extension until November 30, 1989, so that the comparative tests can be completed and a report prepared. This has been discussed with Carol Forthmann who stated that the Department had no objections to the filing of this second extension.

Please contact Mr. W. Jeffrey Pardue (813) 866-4387 or Mr. Eustice Parnelle (813) 866-4544 if you have any questions.

Sincerely yours,

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OCT 24 1989
DER - BAQM

for Patsy Yeates Baynard, Director
Environmental and Licensing Affairs

PYB:DER.wa.bs/tdc

Florida Power
CORPORATION

August 21, 1989

Mr. Dale Twachtmann, Secretary
Florida Department of
Environmental Regulation
c/o Office of General Counsel
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Dear Mr. Twachtmann:

Subject: Intent to Issue, Citrus County, Florida Power Corporation Crystal River Power Plant, FDER File Number AC09-162037, PSD-FL-139

Florida Power Corporation (FPC) received notice of DER's intent to issue on August 7, 1989. In accordance with Section 17-103.070 F.A.C., FPC requests an extension of time in which to file a petition for administrative hearing under Section 120.57 F.S. This extension is requested in order to resolve issues related to the proposed test method for measuring particulates from the proposed helper cooling towers.

On behalf of FPC, Mr. W. Jeffrey Pardue contacted Mr. Pradeep Raval on August 18, 1989. In the discussion, Mr. Pardue indicated that FPC is concerned about the reliability and repeatability of the test data produced by the methods proposed in the intent to issue. FPC believes that an alternative test procedure may be more appropriate to measure drift in accordance with Ch. 17-2.700(3) F.A.C. An extension of time is requested in order to allow FPC time to develop the database to support an alternative test procedure.

FPC respectfully requests an extension of the time in which to file a petition for administrative hearing under Chapter 120.57 F.S. Specifically, FPC requests an extension until October 31, 1989. Patricia Blizzard, Corporate Counsel for FPC, has discussed the need for an extension with Carol Forthman who stated that the FDER had no objections to the filing of this extension.

Please contact Mr. W. Jeffrey Pardue (813-866-4387) or Mr. Eustice Parnelle (813-866-4544) if you have any questions.

Sincerely,

John A. Hancock, Vice President
Fossil Operations

wjp/bm

PM
10-20-89
A. Fredieu - FL

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Florida Power
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OCT 23 1989
DER - BAQM

October 19, 1989

Mr. Clair H. Fancy
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Fancy:

Re: Construction Permit Application
Crystal River 1, 2, & 3 Helper Cooling Towers

The following comments concern Mr. Bruce P. Miller's (EPA/Atlanta) letter to you dated August 31, 1989 in response to the Department of Environmental Regulation's Technical Evaluation and Preliminary Determination of the subject application. The comments correspond to those in Mr. Miller's letter.

1. It is understood that both the Department and EPA must approve an equivalent test method.

2. No comment.

3. EPA's comment refers to the basis for determining the estimated emissions from the Helper Cooling Towers contained in Table 2-2 of KBN's report titled "Particulate Matter Air Quality Impact Assessment Florida Power Corporation Crystal River Plant" dated March 1989. The total dissolved solids (TDS) used to estimate maximum emissions was 29,100 mg/l. This number is the average of 4 years of Crystal River 4 and 5 intake data flow weighted to account for blowdown from Crystal River 4 & 5 and was provided to KBN by Florida Power Corporation (FPC). EPA wants the maximum TDS concentration to be one of the highest values experienced in the open water, i.e. 35,000 mg/l. This does not represent actual conditions at Crystal River and therefore is inappropriate for impact assessment. To bring this into perspective, the lowest TDS concentration observed is about 21,000 mg/l. It would seem appropriate and reasonable to use the rate of 29,100 mg/l.

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Mr. Clair H. Fancy
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951 675(S)

4. To assume that 100% of the particulate matter is PM-10 is overly conservative and simplistic. The only way to estimate particle size distribution is by the sensitive paper (SP) method. While this may not measure some of the smaller size particles, it clearly shows that not all is PM-10. The EPA assumption is clearly not appropriate. FPC proposes that a concentration of 50 percent PM-10 of the total mass, a drift rate of .002%, and an effective diameter for the 9 cells that make up each tower be used for modeling.

5. The duration, number of test runs, and averaging procedure is a part of 40 CFR 60 App. A which has been adopted by the Department. To specify such conditions in the permit is unnecessary. EPA's suggestion that tests be performed during "worst case conditions" is impractical. While TDS concentrations are somewhat seasonal, monthly concentrations also vary considerably. The logistics to perform testing to assure EPA's hypothetical "worst case" would be virtually impossible.

6. While the modeling was performed for an emission rate of 25 g/sec (198.4 lb/hr) the results clearly indicate that 25.25 g/sec (i.e. 200.2 lb/hr) would not exceed PSD increments or Ambient Air Quality Standards.

Should you have questions concerning these comments, please contact me at (813)866-4544 or Jeff Pardue at (813)866-4387.

Sincerely,

for R. E. Parnelle, P.E.
Supervisor, Air Programs

bm
cc: P. Raval
B. Andrews
M. Linn
B. Thomas, S.W. Dist.
B. Miller, EPA
C. Shaver, NPS
CHF/BT

PM
10-7-89
Denver, Co.

United States Department of the Interior
FISH AND WILDLIFE SERVICE

MAILING ADDRESS:
Post Office Box 25486
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IN REPLY REFER TO:

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DER - Bureau

RW Air Quality
Mail Stop 60130

Mr. C.H. Fancy, P.E., Deputy Chief
Bureau of Air Quality Management
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Fancy:

Thank you for sending us a copy of Florida Power Corporation's permit application and related information regarding their proposal to install four helper cooling towers at the Crystal River power plant. The Crystal River plant is located near Crystal River, Florida, approximately 21 km north of Chassahowitzka National Wildlife Refuge (NWR). Based on our review of the information you provided, we do not expect that the associated particulate matter emissions from the proposed cooling towers (432.5 tons/year) would significantly impact the air quality or air quality related values at Chassahowitzka NWR.

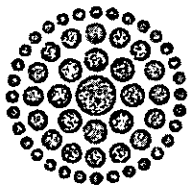
If you have any questions regarding this matter, please contact John Bunyak of our Air Quality Office at (303) 969-2071.

Sincerely,

Ralph F. Fries

Ralph F. Fries
Acting Assistant Regional Director
Refuges and Wildlife, Region 6

cc: Bruce Rawal 10-10-89 RFF
C. Andrews
S. Rogers
CHF/BT



Florida Power
CORPORATION

September 15, 1989

Mr. Pradeep Raval
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Raval:

Re: Source Testing Methodology Evaluation Crystal River Units 1, 2, and 3
Proposed Helper Cooling Towers

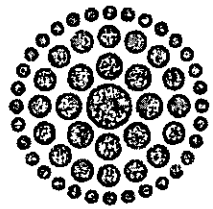
The following is a proposed test plan for the subject effort.

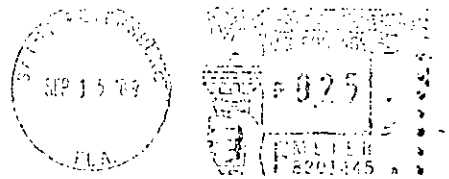
1.0 OBJECTIVES

The objectives of this program are:

1. To establish an acceptable source testing methodology for the proposed Crystal River 1, 2, and 3 cooling towers via comparative tests with the Heated Glass Bead Isokinetic Sampling (HGBIK) Method, EPA Method 13A, and EPA Method 5.

2. To determine whether a significant drift rate dependency exists as a function of water loading (L) and air loading (G).





M.A.C._____
POST OFFICE BOX 14042, ST. PETERSBURG, FLORIDA 33733

Florida Power
CORPORATION

Mr. Pradeep Raval
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

951 675(S)

2.0 OVERVIEW OF WORK SCOPE

2.1 Background

EPA and the Florida Department of Environmental Regulation (FDER) have agreed that the Heated Glass Bead Isokinetic Sampling (HGBIK) system is an acceptable method for drift determination, provided consistency of results vis-a-vis EPA Method 13A or EPA Method 5 can be established. To our knowledge, no drift emission measurements have been performed using Method 5. However, some data exist, although variable, using Method 13A. The absence of substantive available comparative data on either Method 13A or Method 5, the variability of existing comparative data, and the historical use and repeatability of the HGBIK Method solicits a controlled study to establish an acceptable source testing method.

2.2 Scope of Work

2.2.1 Test Facility Selection and Preparation

The test facilities of Ceramic Cooling Tower Company (Ft. Worth, Texas) have been selected, and are available, to perform laboratory comparisons of drift methodologies.

Preparation of the test facility will be required for the tests including, but not limited to:

a. calibration by Environmental Systems Corporation (ESC) of air and water loading sensors,

b. installation and seasoning of drift eliminators,

c. adjustment of water distribution system nozzles and their proximity to the drift eliminators, and

d. tracer addition and evaluation of water chemistry and initial shakedown tests.

Munters D-15 drifter eliminators will be used for the tests.

2.2.2 Test Execution

A minimum of twenty (20) tests will be conducted comparing Method 5, Method 13A, and the HGBIK Method. The following test matrix will be used.

		Water Loading (gpm/ft^2)		
		(4.8)	(6.4)	(7.6)
Air	(370)	1.44	1.92	2.3
Loading	(500)	1.07	1.42	1.69
(fpm)	(630)	0.85	1.13	1.34

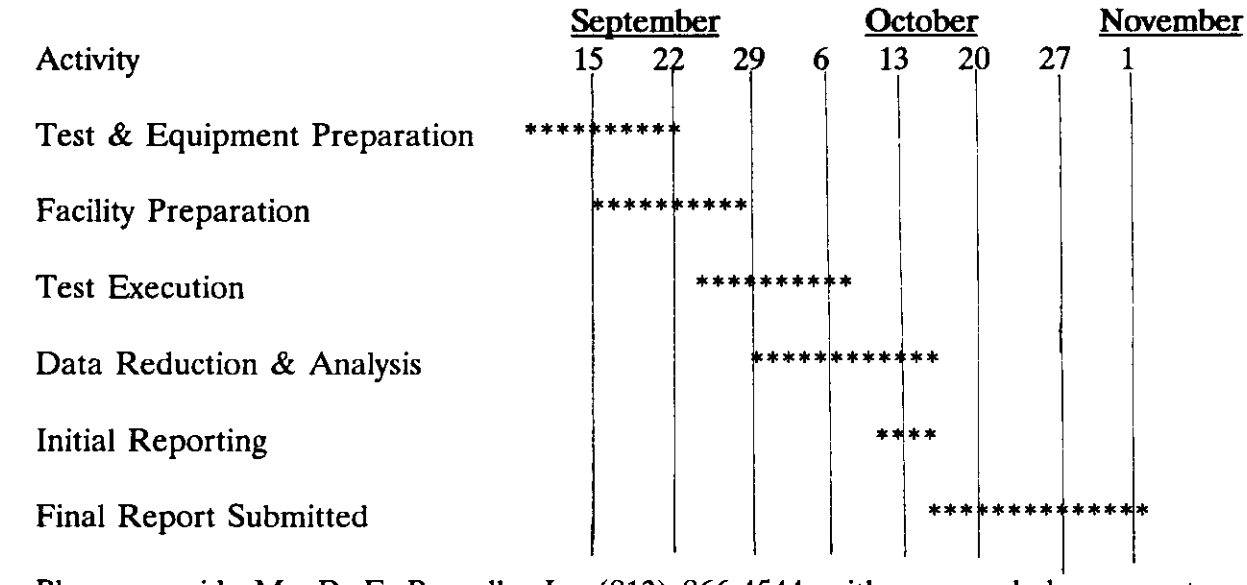
L/Gs are calculated for each test point based on the air and water loading set points and an assumed air density of 0.075 lb/fr^3. Two tests will be run at each L/G for a total of 18 points. Four to six additional tests will be done at the design air loading of 370 gpm and water loading of 6.4 gpm/ft^2.

It is estimated that each test will involve nine (9) equal area (2'x2'each) sampling points over the drift eliminators. A minimum of 30 minutes per point, or a total of 4.5 hours per test will be required to ensure that sufficient sample is acquired for subsequent chemical and gravimetric analysis. Accordingly, only two tests per day will be completed, resulting in a two week test program for the 24 tests.

Data reduction and analysis will be initiated onsite. Specifically, it is currently our plan to perform Method 5 filter desiccating and weighing either at the facility or at a nearby laboratory. Chemical rinses of the IK tubes and Method 13A impingers will also be performed onsite along with multiple "procedural blanks" for each sampling media employed in the test program.

3.0 SCHEDULE

3.1 Schedule



Please provide Mr. R. E. Parnelle, Jr., (813) 866-4544, with your verbal comments and concurrence with this test program as soon as possible followed by a letter. If a meeting is necessary, we are prepared to meet at your earliest convenience. We have already begun the initial efforts in the schedule in order to complete the test program in an expeditious manner.

Sincerely,

for J. A. Hancock
Vice President,
Fossil Operations

/dmj

cc: Winston Smith, EPA

copied BA, BT, J.P, P.R on fax copy 9/19 PR

FLORIDA POWER CORPORATION

3201 - 34 Street South
P.O. Box 14042
St. Petersburg, FL 33733

TELECOPIER NUMBER 813/866-4390
OMNIFAX G9S -- Automatic

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*CONFIRMATION NUMBER: _____

DATE: 15 SEPT 89

TO: PRADEEP RAVAL

FROM: EUSTICE PARNELLE, FLA. POWER Corp, (813)866-4544

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Florida Power
CORPORATION

September 15, 1989

Mr. Pradeep Raval
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Raval:

Re: Source Testing Methodology Evaluation Crystal River Units 1, 2, and 3
Proposed Helper Cooling Towers

The following is a proposed test plan for the subject effort.

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2. To determine whether a significant drift rate dependency exists as a function of water loading (L) and air loading (G).

2.0 OVERVIEW OF WORK SCOPE

2.1 Background

EPA and the Florida Department of Environmental Regulation (FDER) have agreed that the Heated Glass Bead Isokinetic Sampling (HGBIK) system is an acceptable method for drift determination, provided consistency of results vis-a-vis EPA Method 13A or EPA Method 5 can be established. To our knowledge, no drift emission measurements have been performed using Method 5. However, some data exist, although variable, using Method 13A. The absence of substantive available comparative data on either Method 13A or Method 5, the variability of existing comparative data, and the historical use and repeatability of the HGBIK Method solicits a controlled study to establish an acceptable source testing method.

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b. installation and seasoning of drift eliminators,

c. adjustment of water distribution system nozzles and their proximity to the drift eliminators, and

d. tracer addition and evaluation of water chemistry and initial shakedown tests.

Munters D-15 drifter eliminators will be used for the tests.

2.2.2 Test Execution

A minimum of twenty (20) tests will be conducted comparing Method 5, Method 13A, and the HGBIK Method. The following test matrix will be used.

		Water Loading (gpm/ft²)		
		(4.8)	(6.4)	(7.6)
Air	(370)	1.44	1.92	2.3
Loading	(500)	1.07	1.42	1.69
(fpm)	(630)	0.85	1.13	1.34

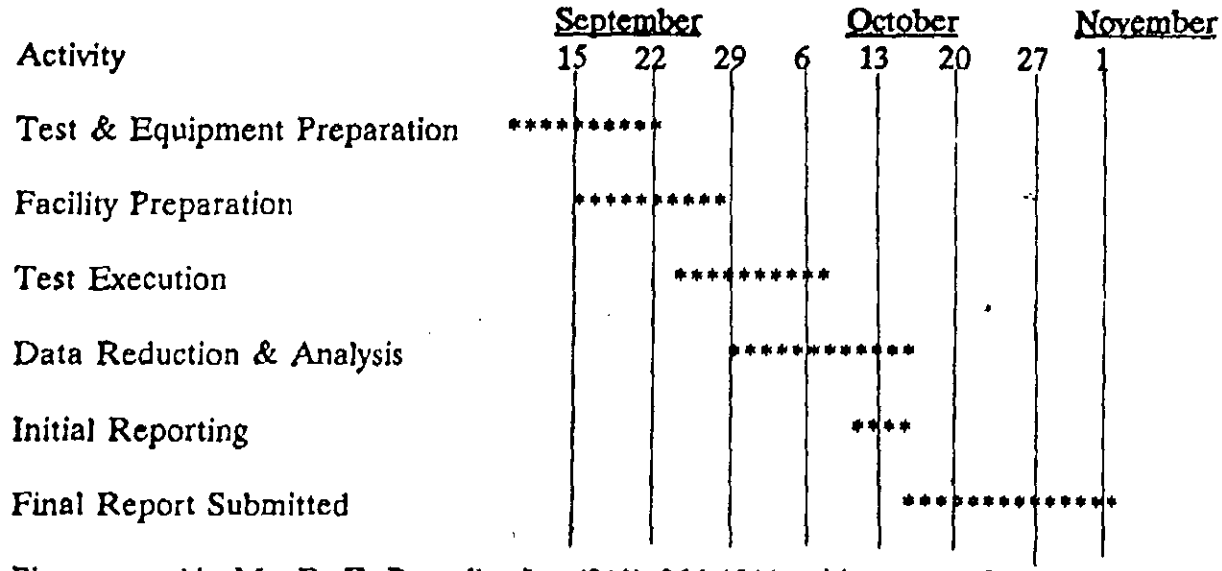
L/Gs are calculated for each test point based on the air and water loading set points and an assumed air density of 0.075 lb/ft³. Two tests will be run at each L/G for a total of 18 points. Four to six additional tests will be done at the design air loading of 370 gpm and water loading of 6.4 gpm/ft².

It is estimated that each test will involve nine (9) equal area (2'x2'each) sampling points over the drift eliminators. A minimum of 30 minutes per point, or a total of 4.5 hours per test will be required to ensure that sufficient sample is acquired for subsequent chemical and gravimetric analysis. Accordingly, only two tests per day will be completed, resulting in a two week test program for the 24 tests.

Data reduction and analysis will be initiated onsite. Specifically, it is currently our plan to perform Method 5 filter desiccating and weighing either at the facility or at a nearby laboratory. Chemical rinses of the IK tubes and Method 13A impingers will also be performed onsite along with multiple "procedural blanks" for each sampling media employed in the test program.

3.0 SCHEDULE

3.1 Schedule



Please provide Mr. R. E. Parnelle, Jr., (813) 866-4544, with your verbal comments and concurrence with this test program as soon as possible followed by a letter. If a meeting is necessary, we are prepared to meet at your earliest convenience. We have already begun the initial efforts in the schedule in order to complete the test program in an expeditious manner.

Sincerely,

for J. A. Hancock
Vice President,
Fossil Operations

/dmj

cc: Winston Smith, EPA

copied P. Andrews
J. Pennington 9-18-89
CF/BT

file

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30365

AUG 31 1989

RECEIVED
SEP 8 1989
DER - BAQM

4APT/APB-aes

Mr. Clair H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management
Florida Department of Environmental
Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Re: Technical Evaluation and Preliminary Determination for Florida Power Corporation-Crystal River Plant

Dear Mr. Fancy:

We have reviewed the above preliminary determination (dated August 2, 1989) for Florida Power Corporation's (FPC), Crystal River, proposed construction of four mechanical draft helper cooling towers for power generating units 1, 2, and 3. We offer the following comments which were discussed on August 29, 1989, in a telephone conversation between Mr. Bill Thomas of you staff and Mark Armentrout of my staff.

1. In the Technical Evaluation and Preliminary Determination report under Section II - Project Description, the discussion regarding test methods should state that an equivalent test method must be approved by EPA in addition to the Florida DER.

2. In the same report, the Rule Applicability Section should be numbered III, not II.

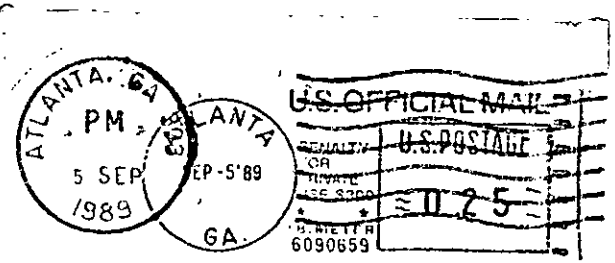
3. In the same report, under Section IV- Source Impact Analysis, Subsection A - Emission Limitations, the allowable particulate emission rate is 200.2 lb/hr; however, assuming 35,000 mg/l of salt in the salt water, the given drift rate of 0.002%, and a water throughput of 687,000 gpm, the estimated actual particulate emission rate is 240 lb/hr. This discrepancy should be investigated.

4. In the same section, under Subsection B - Air Quality Impact Analysis, it is erroneously suggested that only 5 percent of the TSP is PM_{10}. The data base for this information is probably derived from the Sensitive Paper method measurements which can not measure particles less than 20 microns (micrometers). In addition, information contained in the Cooling Tower Drift Measurement Position Paper (Preliminary Draft; July 1989; Karl Wilbur; Environmental Systems Corporation, Knoxville, Tennessee) indicates that more than 50 percent of the TSP is PM_{10}. For modeling purposes, you may assume worst case and assume 100% of the TSP is PM_{10}.

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION IV
345 COURTLAND STREET
ATLANTA, GEORGIA 30365

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

AIR-4



Mr. Clair H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management
Florida Department of Environmental
Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

20

5. On page 5 of the permit, Specific Condition 4, the duration of each test run, the number of test runs and averaging procedure for comparison to the particulate emission limitation need to be specified. In addition, the version (year) of the test method and EPA approval of the equivalent test method should be stated. Because the concentration of particulate (salt) in the cooling water may vary considerably, the testing protocol should specify the conditions that should be present during testing, i.e., under the worst case conditions generating the highest salt concentration in the cooling water.

6. Since modeling was performed using 198.4 lb/hr (25 gm/sec), the permit should specify this limit rather than 200.2 as currently written.

Thank you for considering our comments. If you have any questions, please call Wayne Aronson, Chief, Program Support Section, of my staff at (404) 347-2864.

Sincerely yours,

Bruce P. Miller

Bruce P. Miller, Chief
Air Programs Branch
Air, Pesticides, and Toxics
Management Division

cc: Florida Power Corporation

Copied PK PK
Barry 9-12-89
Tom
CHF/BT

Florida Power
CORPORATION

August 23, 1989

Mr. William A. Thomas
Deputy Chief, Bureau of
Air Quality Management
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Thomas:

Re: Technical Evaluation and Preliminary Determination
for CR 1, 2, 3 Helper Cooling Towers

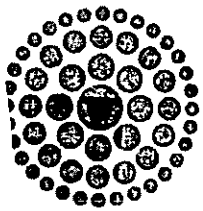
The following comments are offered by Florida Power Corporation concerning the Technical Evaluation and Preliminary Determination and proposed permit to construct Helper Cooling Towers for Crystal River Units 1, 2 and 3.

Technical Evaluation and Preliminary Determination

II. Project Description

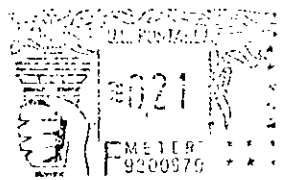
A. First paragraph, the manufacturer's name, "Munter's" should be deleted. The Permit should not endorse a specific manufacturer. FPC will install state-of-the-art high efficiency drift eliminators.

B. Third paragraph, a beginning sentence should be added to read, "There is no EPA reference method to test salt drift from cooling towers. A sensitive paper method is currently... The word "adopted" in the next to last sentence should be preceded by "and expected to be".



DROP SHIPMENT

AUTHORIZATION #'S:



M.A.C._____
POST OFFICE BOX 14042, ST. PETERSBURG, FLORIDA 33733

Florida Power
CORPORATION

Mr. William A. Thomas
Deputy Chief, Bureau of
Air Quality Management
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

951 675(S)

IV. Source Inpact Analysis

A. Emission Limitations. In the last sentence "while" should be changed to read "with all pumps and fans".

Permit Number: AC 09-162037

Page 1 of 6: Second paragraph, "Munter's" should be deleted for reasons stated previously.

Page 5 of 6: Specific Condition 2, after 432.5TPY, should read "which is the equivalent of all pumps operating with a drift emission rate of .002% of the circulating water rate (687,000 gpm)."

BACT Determination

Page 6 of 6: Specific Condition 6, change "no bypass" to "minimum bypass". A no bypass condition is not achievable.

Page 6 of 6: Specific Condition 7, add "No additional ambient monitoring is required for the Helper Cooling Towers."

BACT Analysis

In the paragraph that begins with "The applicant has indicated" the word "contracted" should be changed to "who submitted proposals."

The Intent to Issue requires that a public notice shall be published within 30 days in the legal ad section of a newspaper of general circulation in the area affected. Because the issue of the designated test method is of such importance, it is Florida Power's recommendation that the Public Notice not be published until the test method has been agreed upon by EPA, DER, and Florida Power Corporation. FPC requests DER concurrence with this recommendation.

Specific Conditions

Page 5 of 6: Specific Condition 3. Since this permit does not regulate these emissions, FPC requests this condition be deleted.

Page 6 of 6: Specific Condition 7. Florida Power Corporation is required to continue the salt drift monitoring program in another permit (NPDES FL0003636), therefore, this condition should be deleted from the permit.

Sincerely,

for R.E. Parnelle

R. E. Parnelle
Supervisor, Air Programs

Copied: P. Raval
B. Andrews
J. Rogers
CHF/BT