



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET  
ATLANTA, GEORGIA 30365

AUG 01 1989

REF: 4APTM/APB/sch

Mr. Billy L. Griffin  
Executive Vice President  
Florida Power Company  
3201 Thirty Fourth Street South  
P.O. Box 14042  
St. Petersburg, FL 33737

file  
RECEIVED  
AUG 7 1989  
DER-BAQM

Dear Mr. Griffin:

This letter is in response to Mr. Eustice Parnelle's letter of July 10, 1989 to Mr. Bruce Miller, regarding the Heated Glass Bead Isokinetic Test Method (IK Method) developed by Environmental Systems Corporation. This method to determine particulate emissions from the proposed mechanical cooling towers, will be acceptable to EPA as an alternate compliance method for particulate matter provided the following commitments and classifications are addressed to EPA's satisfaction:

1. Supporting data that demonstrate the validity of the IK method must be provided. As a minimum, comparative test data under laboratory or field conditions with either Method 13A or Method 5 must be provided. At least nine sets of data at representative levels of concentration (close to the emission standard) is adequate. A Student t-test evaluation of the data must show that the IK method has no bias at the 95 percent confidence level or that the bias is positive.
2. Sample train leak check procedures, nozzle calibration procedures and analytical procedures must be provided.
3. Example calculations for particulate emission rate and isokineticity.
4. Address the following calculations for determination of mineral mass flux ( $F_{kj}$ ) and drift mass flux ( $D_j$ ). Please note that the basis for these calculations is on the IK method sample volume ( $V_s$ ) and the tower's volumetric flowrate ( $Q$ ) instead of the nozzle area and stack area as specified in the IK method

$$F_{kj} = \frac{M_{kj} - M_{bk}}{V_s}$$

where:  $M_{kj}$  and  $M_{bk}$  as defined in the IK method

$V_s$  = IK sample volume in dry standard cubic feet (dscf)

$F_k$ ; mg/dscf of component k in sample j

$$D_j = F_{kj} \times Q$$

where:  $D_j$  = mg/hr of component k in  
sample j

$Q$  = tower's volumetric flowrate  
in dscf per hour.

5. Data to show the adequacy of the quality assurance and quality control procedures.

If you have any questions regarding this letter, please contact me or Mr. Paul Reinermann, of my staff, at 404/347-2904.

Sincerely yours,

*Winston A. Smith*

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

cc: Steve Smallwood, FDER

*Copied CF/B7/file 9*

*Bony*

*Tom*

*Radner*

*Jim Pennington*

*PR*

*9-8-89*

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION IV  
345 Courtland Street, N.E.  
ATLANTA, GA 30308

FACSIMILE TRANSMISSION SHEET

DATE: August 2, 1989 NUMBER OF PAGES: 2 (Included Cover Sheet)

TO: Clair Fency PHONE: 487-3618

ADDRESS: Florida DER FAX NUMBER: (904) 487-3618

FROM: Wayne J. Aronson PHONE: 404-347-2864

If the following message is received poorly or verification, please call  
Wayne Aronson in our office at FTS 257-2864 or commercial  
(404) 347-2864

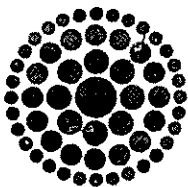
SPECIAL INSTRUCTIONS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PLEASE NUMBER ALL PAGES

REGIONAL OFFICE FAX NUMBER:

<u>MACHINE TYPE</u>	<u>TELEPHONE NUMBERS</u>
3M, EMT 9165	FTS 257-4486 (AUTO) COMM. (404) 347-4486

PANAFAX	FTS 257-4702 COMM. (404) 347-4702
---------	--------------------------------------



**Florida  
Power**  
CORPORATION

RECEIVED  
JUL 28 1989  
DER

July 24, 1989

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

Dear Mr. Raval:

Subject: Crystal River Units 1, 2, & 3  
Proposed Helper Cooling Towers

In response to EPA and FDER's suggestion that Florida Power Corporation (FPC) explore the feasibility of using EPA test method 5 to measure drift rate from the proposed helper towers, a request was made through Black & Veatch (FPC's A & E Contractor) to Zurn and Marley for any information they might have concerning this test method. Their response is attached and indicates that neither have used method 5. This would appear to eliminate method 5 as the basis for a manufacturer's guarantee or be a method that FPC could accept.

Should you have further questions, please let me know.

R. E. Parnelle, P.E.

bm

cc B. L. Griffin

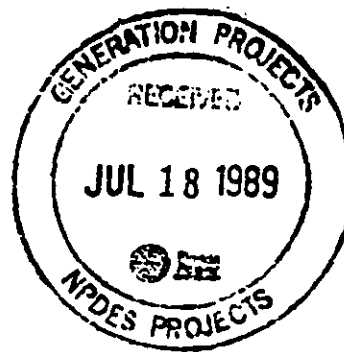


July 17, 1989

Black & Veatch Architects-Engineers  
11401 Lamar  
Overland Park, Kansas 66211

Attention: Mr. Gary L. Christensen  
Project Manager

Subject: Florida Power Corporation  
Crystal River Units 1, 2 and 3  
Helper Cooling Tower Project  
Contract PRO-01100  
Zurn Order No. CT-1023  
Drift Testing - EPA Method 5



DO	✓
DL	✓
LD	✓
MD	✓
PD	✓
RD	✓
SD	✓
TD	✓
UD	✓
VD	✓
WD	✓
XD	✓
YD	✓
ZD	✓
AA	✓
AB	✓
AC	✓
AD	✓
AE	✓
AF	✓
AG	✓
AH	✓
AI	✓
AL	✓
AM	✓
AN	✓
AO	✓
AP	✓
AQ	✓
AR	✓
AS	✓
AT	✓
AV	✓
AW	✓
AX	✓
AY	✓
AZ	✓
BA	✓
BB	✓
BC	✓
BD	✓
BE	✓
BF	✓
BG	✓
BH	✓
BI	✓
BL	✓
BM	✓
BN	✓
BO	✓
BP	✓
BQ	✓
BR	✓
BS	✓
BT	✓
BV	✓
BW	✓
BX	✓
BY	✓
BZ	✓
CA	✓
CB	✓
CC	✓
CD	✓
CE	✓
CF	✓
CG	✓
CH	✓
CI	✓
CL	✓
CM	✓
CN	✓
CO	✓
CP	✓
CQ	✓
CR	✓
CS	✓
CT	✓
CV	✓
CW	✓
CX	✓
CY	✓
CZ	✓
DA	✓
DB	✓
DC	✓
DD	✓
DE	✓
DF	✓
DG	✓
DH	✓
DI	✓
DL	✓
DM	✓
DN	✓
DO	✓
DP	✓
DQ	✓
DR	✓
DS	✓
DT	✓
DV	✓
DW	✓
DX	✓
DY	✓
DZ	✓
EA	✓
EB	✓
EC	✓
ED	✓
EE	✓
EF	✓
EG	✓
EH	✓
EI	✓
EL	✓
EM	✓
EN	✓
EO	✓
EP	✓
EQ	✓
ER	✓
ES	✓
ET	✓
EV	✓
EW	✓
EX	✓
EY	✓
EZ	✓
FA	✓
FB	✓
FC	✓
FD	✓
FE	✓
FF	✓
FG	✓
FH	✓
FI	✓
FL	✓
FM	✓
FN	✓
FO	✓
FP	✓
FQ	✓
FR	✓
FS	✓
FT	✓
FV	✓
FW	✓
FX	✓
FY	✓
FZ	✓
GA	✓
GB	✓
GC	✓
GD	✓
GE	✓
GF	✓
GG	✓
GH	✓
GI	✓
GL	✓
GM	✓
GN	✓
GO	✓
GP	✓
GQ	✓
GR	✓
GS	✓
GT	✓
GV	✓
GW	✓
GX	✓
GY	✓
GZ	✓
HA	✓
HB	✓
HC	✓
HD	✓
HE	✓
HF	✓
HG	✓
HH	✓
HI	✓
HL	✓
HM	✓
HN	✓
HO	✓
HP	✓
HQ	✓
HR	✓
HS	✓
HT	✓
HV	✓
HW	✓
HX	✓
HY	✓
HZ	✓
IA	✓
IB	✓
IC	✓
ID	✓
IE	✓
IF	✓
IG	✓
IH	✓
II	✓
IL	✓
IM	✓
IN	✓
IO	✓
IP	✓
IQ	✓
IR	✓
IS	✓
IT	✓
IV	✓
IW	✓
IX	✓
IY	✓
IZ	✓
JA	✓
JB	✓
JC	✓
JD	✓
JE	✓
JF	✓
JG	✓
JH	✓
JI	✓
JL	✓
JM	✓
JN	✓
JO	✓
JP	✓
JQ	✓
JR	✓
JS	✓
JT	✓
JV	✓
JW	✓
JX	✓
JY	✓
JZ	✓
KA	✓
KB	✓
KC	✓
KD	✓
KE	✓
KF	✓
KG	✓
KH	✓
KI	✓
KL	✓
KM	✓
KN	✓
KO	✓
KP	✓
KQ	✓
KR	✓
KS	✓
KT	✓
KV	✓
KW	✓
KX	✓
KY	✓
KZ	✓
LA	✓
LB	✓
LC	✓
LD	✓
LE	✓
LF	✓
LG	✓
LH	✓
LI	✓
LL	✓
LM	✓
LN	✓
LO	✓
LP	✓
LQ	✓
LR	✓
LS	✓
LT	✓
LV	✓
LW	✓
LX	✓
LY	✓
LZ	✓
MA	✓
MB	✓
MC	✓
MD	✓
ME	✓
MF	✓
MG	✓
MH	✓
MI	✓
ML	✓
MM	✓
MN	✓
MO	✓
MP	✓
MQ	✓
MR	✓
MS	✓
MT	✓
MV	✓
MW	✓
MX	✓
MY	✓
MZ	✓
NA	✓
NB	✓
NC	✓
ND	✓
NE	✓
NF	✓
NG	✓
NH	✓
NI	✓
NL	✓
NM	✓
NN	✓
NO	✓
NP	✓
NQ	✓
NR	✓
NS	✓
NT	✓
NV	✓
NW	✓
NX	✓
NY	✓
NZ	✓
OA	✓
OB	✓
OC	✓
OD	✓
OE	✓
OF	✓
OG	✓
OH	✓
OI	✓
OL	✓
OM	✓
ON	✓
OO	✓
OP	✓
OQ	✓
OR	✓
OS	✓
OT	✓
OV	✓
OW	✓
OX	✓
OY	✓
OZ	✓
PA	✓
PB	✓
PC	✓
PD	✓
PE	✓
PF	✓
PG	✓
PH	✓
PI	✓
PL	✓
PM	✓
PN	✓
PO	✓
PP	✓
PQ	✓
PR	✓
PS	✓
PT	✓
PV	✓
PW	✓
PX	✓
PY	✓
PZ	✓
QA	✓
QB	✓
QC	✓
QD	✓
QE	✓
QF	✓
QG	✓
QH	✓
QI	✓
QL	✓
QM	✓
QN	✓
QO	✓
QP	✓
QQ	✓
QR	✓
QS	✓
QT	✓
QV	✓
QW	✓
QX	✓
QY	✓
QZ	✓
RA	✓
RB	✓
RC	✓
RD	✓
RE	✓
RF	✓
RG	✓
RH	✓
RI	✓
RL	✓
RM	✓
RN	✓
RO	✓
RP	✓
RQ	✓
RR	✓
RS	✓
RT	✓
RV	✓
RW	✓
RX	✓
RY	✓
RZ	✓
SA	✓
SB	✓
SC	✓
SD	✓
SE	✓
SF	✓
SG	✓
SH	✓
SI	✓
SL	✓
SM	✓
SN	✓
SO	✓
SP	✓
SQ	✓
SR	✓
SS	✓
ST	✓
SV	✓
SW	✓
SX	✓
SY	✓
SZ	✓
TA	✓
TB	✓
TC	✓
TD	✓
TE	✓
TF	✓
TG	✓
TH	✓
TI	✓
TL	✓
TM	✓
TN	✓
TO	✓
TP	✓
TQ	✓
TR	✓
TS	✓
TT	✓
TV	✓
TW	✓
TX	✓
TY	✓
TZ	✓
UA	✓
UB	✓
UC	✓
UD	✓
UE	✓
UF	✓
UG	✓
UH	✓
UI	✓
UL	✓
UM	✓
UN	✓
UO	✓
UP	✓
UQ	✓
UR	✓
US	✓
UT	✓
UV	✓
UW	✓
UX	✓
UY	✓
UZ	✓
VA	✓
VB	✓
VC	✓
VD	✓
VE	✓
VF	✓
VG	✓
VH	✓
VI	✓
VL	✓
VM	✓
VN	✓
VO	✓
VP	✓
VQ	✓
VR	✓
VS	✓
VT	✓
VV	✓
VW	✓
VX	✓
VY	✓
VZ	✓
WA	✓
WB	✓
WC	✓
WD	✓
WE	✓
WF	✓
WG	✓
WH	✓
WI	✓
WL	✓
WM	✓
WN	✓
WO	✓
WP	✓
WQ	✓
WR	✓
WS	✓
WT	✓
WV	✓
WW	✓
WX	✓
WY	✓
WZ	✓
XA	✓
XB	✓
XC	✓
XD	✓
XE	✓
XF	✓
XG	✓
XH	✓
XI	✓
XL	✓
XM	✓
XN	✓
XO	✓
XP	✓
XQ	✓
XR	✓
XS	✓
XT	✓
XV	✓
XW	✓
XX	✓
XY	✓
XZ	✓
YA	✓
YB	✓
YC	✓
YD	✓
YE	✓
YF	✓
YG	✓
YH	✓
YI	✓
YL	✓
YM	✓
YN	✓
YO	✓
YP	✓
YQ	✓
YR	✓
YS	✓
YT	✓
YV	✓
YW	✓
YX	✓
YZ	✓
ZA	✓
ZB	✓
ZC	✓
ZD	✓
ZE	✓
ZF	✓
ZG	✓
ZH	✓
ZI	✓
ZL	✓
ZM	✓
ZN	✓
ZO	✓
ZP	✓
ZQ	✓
ZR	✓
ZS	✓
ZT	✓
ZV	✓
ZW	✓
ZX	✓
ZY	✓
ZZ	✓

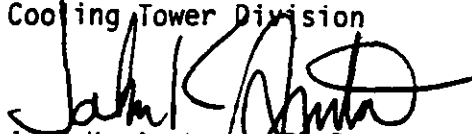
PROJECT: CT  
FILE: 3.6  
2.3.4  
2.5.2

Gentlemen

Confirming our recent conversation, we have no direct knowledge of either the methodology or the results that may be anticipated using EPA Method 5 as the sampling technique.

Very truly yours,

ZURN CONSTRUCTORS, INC.  
Cooling Tower Division

  
John K. Arntson, Ph.D.  
Vice President-Engineering

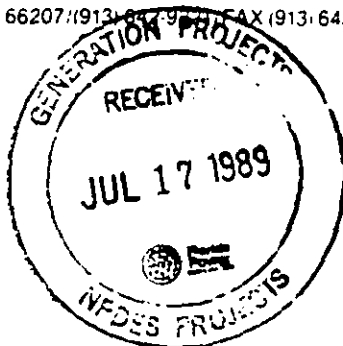
JKA:bgb

cc: J. Gallagher, FPC, St. Petersburg  
J. Lander, FPC, Crystal River  
J. Raysik, Raysik Equipment Co.



# THE MARLEY COOLING TOWER COMPANY

9401 Nall — Suite 102/Shawnee Mission, Kansas 66207 (913) 642-3938 FAX (913) 642-3938



Mr. J. A.	
Mr. J. B.	
Mr. J. C.	
Mr. J. D.	
Mr. J. E.	
Mr. J. F.	
Mr. J. G.	
Mr. J. H.	
Mr. J. I.	
Mr. J. J.	
Mr. J. K.	
Mr. J. L.	
Mr. J. M.	
Mr. J. N.	
Mr. J. O.	
Mr. J. P.	
Mr. J. Q.	
Mr. J. R.	
Mr. J. S.	
Mr. J. T.	
Mr. J. U.	
Mr. J. V.	
Mr. J. W.	
Mr. J. X.	
Mr. J. Y.	
Mr. J. Z.	
PROJECT, C	
ATSM	

July 11, 1989

Black & Veatch Engineers/Architects  
P.O. Box 8405  
Kansas City, Missouri 64114

Attention: G. L. Christensen

Re: Florida Power Corporation  
Crystal River Helper Cooling Tower  
B&V Project #14774

Received			
Date: 7/12/89			
FPC PROJECT 14774			
JGC		DEU	
GLC		KRW	
JWF		RCW	
TAK		RCO	
HK		J. Gander	
JRL		J. Gallagher	
GLM			

Dear Sir:

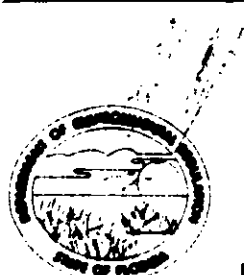
We do not have any experience with EPA Method 5 for determining cooling tower drift. We are not familiar with this procedure at all. Sorry we cannot be of any help on this matter.

Very truly yours,

THE MARLEY COOLING TOWER COMPANY

*Robert E. Hahn*  
Robert E. Hahn  
Regional Manager





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: Clair Fancy

FROM: Tom Rogers *TR*

DATE: July 21, 1989

SUBJECT: Florida Power Corp. Crystal River Cooling Towers

We are currently processing a PSD permit application for the construction of mechanical draft cooling towers to be used with Units 1, 2, and 3 at the FPC Crystal River plant. The application was deemed complete May 30, 1989 with a day 60 of July 28. There remains a conflict between the EPA and FPC on the measurement method to be used for particulates. FPC wants to use a sensitive paper method and the EPA wants to use an isokinetic method, 13-A. The Department (i.e., Pradeep) is leaning toward a modified 13-A method which uses glass beads.

The limiting factor in their air quality analysis is compliance with the PSD increments. Their submitted analysis shows that the 24-hour average increment will just be met using an emission factor of 0.002 percent of the water flow. The sensitive paper method will easily show that the 0.002 level can be achieved. Unfortunately, this method does not count particle sizes below about 15 micrometers. The other test methods tend to show considerably higher particulate emissions, sometimes higher than the 0.002 value. Method 13-A, however, is highly variable. The glass bead method, although it generally shows higher emissions, seems to be a more stable measurement technique.

I'm not sure how either the EPA or FPC will respond to the Department's determination. Thusfar, both the EPA and FPC are sticking to their guns.

DIVISION OF AIR RESOURCE MANAGEMENT

(For Internal Use Only)

**ROUTING AND  
TRANSMITTAL SLIP**

ACTION NO

ACTION DUE DATE

1 TO: (NAME, OFFICE, LOCATION)

Initial

Date

2

Initial

Date

3

Initial

Date

4

Initial

Date

REMARKS:

**INFORMATION**

Review & Return

Review & File

Initial & Forward

**DISPOSITION**

Review & Respond

Prepare Response

For My Signature

For Your Signature

Let's Discuss

Set Up Meeting

Investigate & Report

Initial & Forward

Distribute

Concurrence

For Processing

Initial & Return

FROM:

DATE

PHONE

*FYI*

*FYI. Please give me a  
1 page memo on status of  
this case by Friday. Please  
include input from Pradeep.*

*Alan*

*Roy*



Dated: January 12, 1989.

David Schwarz,

Acting Director, Information and Regulatory  
Systems Division.

[FR Doc. 89-1482 Filed 1-23-89; 8:45 am]

BILLING CODE 6560-50-M

[FRL-3508-2; PSD-FL-007]

**PSD Permit Modification for the Florida  
Power Corp.; Citrus County, FL**

**AGENCY:** Environmental Protection  
Agency (EPA).

**ACTION:** Notice.

**SUMMARY:** Notice is hereby given that a modification to the Prevention of Significant Deterioration (PSD) permit (PSD-FL-007) was issued to Florida Power Corporation, Citrus County, Florida on November 30, 1988. This modification became effective on November 30, 1988. The PSD permit was modified for the purpose of allowing the company to make changes to the two natural draft cooling towers serving units 4 and 5, and to remove the natural draft cooling tower salt drift limits from the National Pollutant Discharge Elimination System (NPDES) permit No. FL 0036366 issued on April 3, 1981, and reissued on June 25, 1986 and incorporate these changes into the PSD permit.

**DATE:** This action is effective as of November 30, 1988, the date of issuance of the PSD permit modification.

**ADDRESSES:** Copies of the permit application, preliminary determination, and final determination and modified PSD permit are available for public inspection upon request at the following locations:

U.S. Environmental Protection Agency,  
Air Programs Branch, 345 Courtland  
Street NE., Atlanta, Georgia 30365.

Bureau of Air Quality Management,  
Florida Department of Environmental  
Regulation, Twin Towers Office  
Building, 2600 Blair Stone Road,  
Tallahassee, Florida 32399-2400.

**FOR FURTHER INFORMATION CONTACT:**  
Lewis Nagler or Wayne Aronson of the  
EPA Region IV, Air Programs Branch at  
the Atlanta address given above,  
telephone (404) 347-2864; (FTS) 257-  
2864.

**SUPPLEMENTARY INFORMATION:** On May 11, 1988, the Florida Power Corporation submitted an application to EPA for a permit modification to their Crystal River Plant located in Citrus County, Florida. Specifically, the permit modification allows the company to make changes to the natural draft cooling towers serving units 4 and 5. In addition, this modification removes the

salt drift limits from the NPDES permit and incorporates them into the PSD permit. The preliminary determination was made by the EPA Region IV Air Programs Branch on October 5, 1988. Comment letters were received from Florida Power Corporation, Hollins Corporation and the Florida Department of Environmental Regulations (DER) during the public comment period. Subsequent to the public comment period, Florida Power Corporation and Hollins Corporation withdrew their comments submitted regarding Public Notice No. 88 FL149. The Florida DER concurred with the BACT analysis and had no other comments regarding the preliminary determination and draft permit.

On November 30, 1988 EPA prepared the Final Determination and Permit Conditions. These conditions require that each of the two natural draft cooling towers not exceed a total suspended particulate emissions rate of 175 lb/hr and that each tower be tested once every five years. Unit 4 is to be tested initially no later than February 17, 1989, and Unit 5 is to be tested by May 1, 1992. Also, the permittee is required to continue salt drift monitoring and expand and modify the existing monitoring program.

The modification to the PSD permit (PSD-FL-007) was issued on November 30, 1988, and became effective on the date of issuance pursuant to § 124.15(b)(3) of the Consolidated Permit Regulations (45 FR 33290, May 19, 1980). The effective date of this permit constitutes final agency action under 40 CFR 124.19(f)(1) and section 307 of the Clean Air Act, for purpose of judicial review. Under section 307(b)(1) of the Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by March 27, 1989. This action may not be challenged later in proceedings to enforce its requirements (see § 307(b)(2)).

Date: January 10, 1989.

Lee A. Dellühns, III,

Acting Regional Administrator

[FR Doc. 88-1483 Filed 1-23-89; 8:45 am]

BILLING CODE 6560-50-M

**FEDERAL EMERGENCY  
MANAGEMENT AGENCY**

**Agency Information Collection  
Submitted to the Office of  
Management and Budget for  
Clearance**

The Federal Emergency Management Agency (FEMA) has submitted to the Office of Management and Budget the

following information collection package for clearance in accordance with the Paperwork Reduction Act (44 U.S.C. Chapter 35).

**Type:** Existing Collection in use without an OMB Control Number.

**Title:** Behavioral Analysis Survey in Support of Hurricane Evacuation Studies.

**Abstract:** The information collected from the behavioral analysis survey will be used to develop reliable data concerning the expected evacuation response of the public vulnerable to hurricane hazards. The data is needed to estimate the time necessary to evacuate the public in the face of various hurricane scenarios.

**Type of Respondents:** Individuals or households.

**Estimate of Total Annual Reporting and Recordkeeping burden:** 600.

**Number of Respondents:** 3,600.

**Estimated Average burden Hours Per Response:** 17.

**Frequency of Response:** One-Time.

Copies of the above information collection request and supporting documentation can be obtained by calling or writing the FEMA Clearance Officer, Linda Shiley, (202) 646-2624, 500 C Street, SW., Washington, DC 20472.

Direct comments regarding the burden estimate or any aspect of this information collection, including suggestions for reducing this burden, to the FEMA Clearance Officer at the above address; and to Francine Picoult, (202) 395-7231, Office of Management and Budget, 3235, NEOB, Washington, DC 20503 within two weeks of this notice.

Date: January 11, 1989.

Wesley C. Moore,

Director, Office of Administrative Support.

[FR Doc. 89-1485 Filed 1-23-89; 8:45 am]

BILLING CODE 6719-01-M

**FEDERAL HOME LOAN BANK BOARD**

[No. 89-5]

**Applications for Unlisted Trading  
Privileges and Opportunity for  
Hearing; Midwest Stock Exchange, Inc.**

Date: January 9, 1989.

**AGENCY:** Federal Home Loan Bank Board.

**ACTION:** Notice of application.

**SUMMARY:** The Midwest Stock Exchange, Inc. has filed, pursuant to section 12(f)(1)(B) of the Securities Exchange Act of 1934 and Rule 12f-1 thereunder, applications ("Applications") with the Federal Home

RECEIVED

JUL 10 1989

DEK-AQM



ENVIRONMENTAL SYSTEMS CORPORATION • 200 TECH CENTER DRIVE • KNOXVILLE, TENNESSEE 37912 • (615) 688-7900

July 6, 1989

Mr. Eustice Parnell  
Florida Power Corporation  
3201 Thirty-fourth Street  
St. Petersburg, FL 33733

For  
PRADEEP RAVAL  
(904) 488-6579

Dear Eustice:

Subject: Application of a "Method 5" - type Sampling to the Proposed  
Crystal River Cooling Tower Drift Emissions Testing

Confirming our telephone conversation today, outlined below is an example calculation indicating expected particulate collection from the subject tower.

Assumptions:

- Water Quality - 30,000 ppm TDS
- Fan Stack Exit Area - 1256 ft<sup>2</sup> (40' diameter)
- Probe Sampling Area - 0.00096 ft<sup>2</sup> (0.42" diameter)
- Water Flow per cell - 15,000 gpm
- Drift Emission Rate - 0.002% of circulating water rate
- Sampling Time - 1 hour - (60 minutes)

$$\left( \frac{0.002}{100} \right) \times \left( \frac{15,000 \text{ gal}}{\text{min} \cdot \text{cell}} \right) \times \left( \frac{8.33 \text{ lbs}}{\text{gal}} \right) \times \left( \frac{454 \text{ gms}}{\text{lb}} \right) \times \left( \frac{0.00096 \text{ ft}^2}{1256 \text{ ft}^2} \right)$$

$$\times \left( \frac{30,000}{10^6} \text{ ppm} \right) \times 60 \text{ min} = 0.00156 \text{ grams} = \underline{\underline{1.56 \text{ mg}}}$$

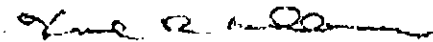
Mr. Eustice Parnell  
July 6, 1989  
Page 2

As I indicated, it would be desirable to collect at least 10 mg of sample. At least 6 hours of testing would be required during which time test conditions (eg. wind, heat load, etc.) could change. Since this method is untested in a cooling tower, (and I would expect some shakedown problems such as excessive moisture on the heated filter and possible carryover), it would be difficult to pre-judge our success. Finally, no data base currently exists upon which to judge the prospects for successfully achieving 0.002% drift rate.

If you need any additional information, please call me.

Sincerely,

ENVIRONMENTAL SYSTEMS CORPORATION



Karl R. Wilber, P.E.  
Senior Vice President

KRW:lhc

cc: Joe Lander, FPC, Crystal River  
Dennis Dingle, FPC, Crystal River

copied  
7-11-89  
PR

W. Thomas	SW District
W. Johnson	EPA
C. Shaver	NPS
B. Andrews	BAW
D. Kaval	BAW
L. Birmingham	BAW

RECEIVED

*file*  
F.1-3

JUL 10 1989

DER-DAQM

FLORIDA POWER CORPORATION

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

TELECOPIER NUMBER 813/866-4390  
OMNIFAX C95 -- Automatic

TELECOPIER NUMBER: 904 488 6579

\*CONFIRMATION NUMBER: \_\_\_\_\_

DATE: 7/7/89

TO: Pradeep Raval

FROM: Eustice Parnell

NUMBER OF PAGES TO FOLLOW: 2

If all of the pages are not received, please call 813/866-4678.

Thank you

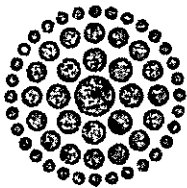
\*If confirmation number is not included, we are not responsible for verification of receipt of this telecopy.

After my FAX has been sent, please do the following with the originals:

- ☒ DESTROY
- ☐ RETURN IN MAIL -- MAC \_\_\_\_\_
- ☐ CALL ME FOR PICK-UP -- EXT. \_\_\_\_\_

PM  
6-22-89  
St. Petersburg

file copy



**Florida  
Power**  
CORPORATION

RECEIVED

JUN 27 1989

DER-BAQM

June 21, 1989

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

Dear Mr. Raval:

Subject: Crystal River Units 1, 2, & 3  
Proposed Helper Cooling Towers

Your question as to whether it is possible to measure the water flow to and from the towers and consider the difference in the two measurements to be drift was posed to our consultant. Their answer is that this would not be possible because the difference in the two measurements would include both evaporation and drift. Since the drift is only 6.87 gpm out of a total flow rate of 687,000 gpm, it would be too small to distinguish between evaporation and drift.

Also the ability to measure tower flow rates is not accurate enough to measure a difference of 6.87 gpm.

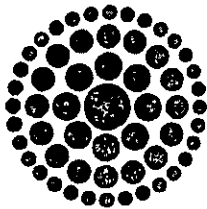
Should there be further questions, please let me know.

Sincerely,

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

bm

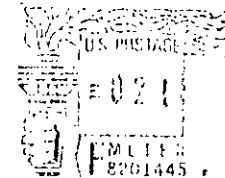
copied: P. Raval  
B. Anderson  
J. Rogers  
B. Sherrill  
H. [unclear]  
C. [unclear]  
CHF/RT



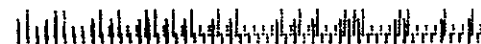
**Florida  
Power**  
CORPORATION

M.A.C. H2G  
POST OFFICE BOX 14042, ST. PETERSBURG, FLORIDA 33733

USPS SHIPMENT  
AUTHORIZATION #00



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



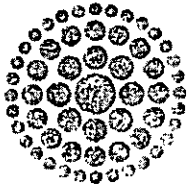
951 675(S)

PERMIT #: AC 09-162037APPLICANT NAME: Florida Power Corp.TYPE OF PERMIT: ACSUBTYPE: 1A

STATUS: \_\_\_\_\_ (IS, DE, GP, EX, WI) PERMIT PROCESSING [FORM #: DER-CA 01]

OFFICE: BAQ

	TIME	TIME	TOTAL		POSITION
DATE	BEGIN	END	TIME (15 MIN)	TASK	TITLE
3-17	9:00	9:20	30 min.	Log in, write receipt, fill out cash listing, enter into PATS	Planner I
3-21	4:00	4:45	45 min	Set up file, make extra copies distribute, write letters to EPA & NPS	Planner I
4-7	2:06	2:23	30 min	Copy & mail incompleteness letter	Planner I
5-30	1:40	1:52	15 min.	Copy & distribute incompleteness Response - PATS update	Planner I



**Florida  
Power**  
CORPORATION

*Ad. Exp. 302 733 4444  
5-26-89  
St. Petersburg, FL*

*file copy*

May 26, 1989

**RECEIVED**

**MAY 30 1989**

**DER-BAQM**

Mr. C. H. Fancy  
Deputy Chief, Bureau of Air  
Quality Management  
Florida Department of Environmental  
Regulation  
2600 Blair Stone Road  
Tallahassee, FL 32399-2400

Re: Air Construction Permit Application  
CR 1, 2 & 3 Helper Cooling Towers  
AC09-162037, PSD-FL-139

Dear Mr. Fancy:

Your letter of April 7, 1989 has been received and a thorough research effort has been undertaken to ensure accurate answers to your five questions. With this submittal, I trust that you will find the application to be complete.

**Question 1:** Please submit a copy of the process flow diagram referred to in Section III of the application form.

**Reply:** The process flow diagram referred to in Section III of the application form is enclosed as Attachment 1.

**Question 2:** Verify the projected particulate emission rate from the proposed cooling tower (428.2 TPY vs. 438.3 TPY).

**Reply:** Particulate emissions from the proposed Helper Cooling Towers were calculated by two different methods, as shown below. The two methods result in nearly identical annual emission rates (432.2 TPY vs. 432.5 TPY). It should be noted that the solids loading in the cooling water (29,100 ppm) has units of weight per volume (mg/l), and using units of weight per weight or volume per volume will result in incorrect emissions.

Method 1 -

$$\begin{aligned} & 687,000 \text{ gpm} \times 3.785 \text{ l/gal} \times 29,100 \text{ mg/l} \times 0.00002 \times \text{g/1000 mg} \\ & = 1513.37 \text{ g/min} \\ & = 25.223 \text{ g/s} \\ & = 200.186 \text{ lb/hr} \end{aligned}$$

$$\begin{aligned} & 200.186 \text{ lb/hr} \times 24 \text{ hr/day} \times 180 \text{ day/yr} / 2,000 \text{ lb/ton} \\ & = 432.40 \text{ tons/yr} \end{aligned}$$



**FEDERAL  
EXPRESS****AIRBILL**USE THIS AIRBILL FOR DOMESTIC SHIPMENTS WITHIN THE CONTINENTAL U.S.A., ALASKA AND HAWAII.  
USE THE INTERNATIONAL AIRWAYBILL FOR SHIPMENTS TO PUERTO RICO.  
QUESTIONS? CALL 800-238-5333 TOLL FREE.PACKAGE  
TRACKING NUMBER

302733498

3027334984

**RECIPIENT'S COPY**

From (Your Name) Please Print <b>Florida Power Corporation</b>		Your Phone Number (Very Important) <b>(813) 866-5525</b>	
Company <b>FLORIDA POWER CORP</b>		Department/Floor No.	
Street Address <b>1201 34TH ST SOUTH</b>			
City <b>TALLAHASSEE</b>		State <b>FL</b>	
ZIP Required <b>32309</b>			
YOUR BILLING REFERENCE INFORMATION (FIRST 24 CHARACTERS WILL APPEAR ON INVOICE.) <b>927-616000-EL001</b>			
PAYMENT <input checked="" type="checkbox"/> Bill Sender <input type="checkbox"/> Bill Recipient's FedEx Acct. No. <input type="checkbox"/> Bill 3rd Party FedEx Acct. No. <input type="checkbox"/> Bill Credit Card		IF HOLD FOR PICK-UP, Print FEDEX Address Here	
<input type="checkbox"/> Cash		Street Address	
		City	
		State	
		ZIP Required	
<b>SERVICES</b>		<b>DELIVERY AND SPECIAL HANDLING</b>	
1 <input type="checkbox"/> <b>PRIORITY 1</b> Overnight Delivery		1 <input type="checkbox"/> <b>HOLD FOR PICK-UP</b> (Fill in Box 1)	
2 <input type="checkbox"/> <b>COURIER-PAK</b> OVERNIGHT ENVELOPE*		2 <b>5/392</b> <input checked="" type="checkbox"/> <b>DELIVER WEEKDAY</b>	
3 <input type="checkbox"/> <b>OVERNIGHT BOX</b>		3 <b>DELIVER SATURDAY</b> (Extra charge) <input type="checkbox"/>	
4 <input type="checkbox"/> <b>OVERNIGHT TUBE</b>		4 <input type="checkbox"/> <b>DANGEROUS GOODS</b> (Extra charge)	
5 <input type="checkbox"/> <b>STANDARD AIR</b> Delivery not later than second business day		5 <input type="checkbox"/> <b>CONSTANT SURVEILLANCE SERVICE (CSS)</b> (Extra charge) (Release Signature Not Applicable)	
		6 <input type="checkbox"/> <b>DRY ICE</b> _____ lbs	
		7 <input type="checkbox"/> <b>OTHER SPECIAL SERVICE</b> _____	
		8 <input type="checkbox"/>	
		9 <input type="checkbox"/> <b>SATURDAY PICK-UP</b> (Extra charge)	
		10 <input type="checkbox"/>	
		11 <input type="checkbox"/>	
		12 <input type="checkbox"/> <b>HOLIDAY DELIVERY</b> (if offered) (Extra charge)	
		Total Total Total	
		Received At 1 <input type="checkbox"/> Regular Stop 2 <input type="checkbox"/> On-Call Stop 3 <input type="checkbox"/> Drop Box 4 <input type="checkbox"/> B.S.C. 5 <input type="checkbox"/> Station	
		FEDEX Corp. Employee No.	
		Date/Time for FEDEX Use	
		Emp. No.	
		Date	
		<input type="checkbox"/> Cash Received	
		<input type="checkbox"/> Return Shipment	
		<input type="checkbox"/> Third Party <input type="checkbox"/> Chg To Del <input type="checkbox"/> Chg To Hold	
		Street Address	
		City	
		State	
		Zip	
		Received By: <b>X</b>	
		Date/Time Received FedEx Employee Number	
		Sender authorizes Federal Express to deliver this shipment without obtaining a delivery signature and shall indemnify and hold harmless Federal Express from any claims resulting therefrom.	
		Release Signature: _____	
		Federal Express Use	
		Base Charges	
		Declared Value Charge	
		Other 1	
		Other 2	
		Total Charges	
		PART #111800	
		REVISION DATE 10/88	
		PRINTED IN U.S.A. FXEM	
		<b>009</b>	
		© 1988 F.E.C.	

Mr. C. H. Fancy  
May 26, 1989  
Page Two

Method 2 -

$$687,00 \text{ gpm} \times 0.00002 \times 1,440 \text{ min/day} \times \text{ft}^3/7.4805 \text{ gal} \\ = 2,644.96 \text{ ft}^3/\text{day of drift}$$

$$2,644.96 \text{ ft}^3/\text{day} \times 28.32 \text{ l/ft}^3 \times 29,100 \text{ mg/l} \times \text{g/1000 mg} \\ = 2,179,743 \text{ g/day}$$

$$2,179,743 \text{ g/day} \times 180 \text{ day/yr} \times \text{lb/453.59 g} \times \text{ton/2000 lb} \\ = 432.50 \text{ tons/yr}$$

**Question 3:** Indicate which operation parameters will be recorded in the daily logs as compliance indicators, since annual emissions are based on limited operation.

**Reply:** The cooling tower control system will log the number of cooling tower pumps and the number of cooling tower fans which are in operation. This data, recorded and logged hourly, will be used to compute the hourly emissions. Hourly emissions will then be summed to arrive at the annual emissions.

**Question 4:** The Department has noted that sensitive paper has been proposed for compliance tests. Please explain your reasons for not using EPA Method 13A, which EPA considers more accurate for determining emissions.

**Reply:** Florida Power Corporation proposed using the sensitized paper (SP) for compliance tests since it is the standard used throughout the cooling tower industry. Also, the SP method is the EPA's accepted method for FPC's natural draft towers at Crystal River. The SP method is a proven test which yields repeatable results, with multiple tests, on the same cell.

The EPA does not have a designated standard test for measuring cooling tower emissions. The EPA has experimented with modifying a stack gas particulate emission test, method 13A, to measure fluorides and chromates from cooling towers. The limited testing has yielded excessive variability with multiple tests on the same cell. In addition, the use of different trace elements yields different drift rates. The existing data base for method 13A testing on cooling towers is too small to determine its application as a standard accepted cooling tower drift test method.

The variability of 13A test results coupled with the limited data base causes FPC considerable concern. FPC cannot confidently or prudently make a large capital dollar investment based upon an unreliable (non-repeatable) test method, which will determine whether or not FPC can ultimately operate the cooling towers. Therefore, FPC requests that the SP method be accepted for compliance tests.

Mr. C. H. Fancy  
May 26, 1989  
Page Three

**Question 5:** Please evaluate the type of mist eliminator required for control of drift from the cooling tower using a top-down Best Available Control Technology (BACT) approach.

**Reply:** The emission of particulate matter (drift) from the mechanical draft cooling towers will be controlled through installation of drift eliminators. The drift eliminator is a device which is placed in the air stream between the tower spray nozzles and the induced draft cooling tower fan as shown on Attachment 3.

Mist generated by the spray nozzles will become entrained in the air stream and will be discharged from the cooling tower through the induced draft cooling tower fan stacks. The mist contains water droplets which range in size from 10 microns to 500 microns in diameter. The larger particles will settle to the ground and will become deposited in the general vicinity of the cooling tower. The smaller droplets will evaporate, turning into a solid particle. This particle, remaining airborne, will contribute to the total airborne particulate matter at the site.

The basic principle of operation of the drift eliminator is to cause the air stream to change direction several times before it enters the inlet plenum of the induced draft cooling tower fan. As the air changes direction, the water droplets cannot rapidly change direction because of their mass. This causes the droplets to impinge against the drift eliminator where they coalesce and eventually drain back into the tower. Drift eliminator technology has evolved over the years with the aim of developing a drift eliminator which achieves high efficiency without causing excessive air flow restrictions and subsequent increase in fan power. Today, state of the art drift eliminators for large mechanical draft cooling towers are manufactured by Brentwood Industries, Munters Corporation and XCEL (subsidiary of the Marley Cooling Tower Company). These eliminators all have similar physical characteristics and have the same basic principle of operation. There is no documented evidence to indicate any difference in the efficiencies between these three manufacturers.

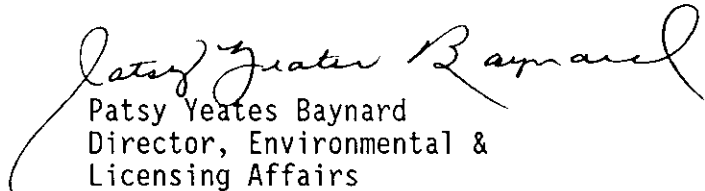
FPC proposed a permit drift rate of .002% based upon a sensitized paper test method. In order to achieve the desired results in the field and not exceed .002%, vendors were asked to guarantee a tower drift rate of .001%. All vendors provided FPC with a guarantee of .001% using the SP method.

Mr. C. H. Fancy  
May 26, 1989  
Page Four

In order to meet guarantees, a test method and value must be agreed upon. A problem arises when BACT is equated to a drift rate without consideration of the test method to be utilized and the accuracy and repeatability of the test method. FPC is committed to use state-of-the-art technology in drift eliminators to achieve BACT. FPC believes the proposed tower with Munters D-15 drift eliminators represents BACT.

Please contact me at (813) 866-4491 if you should need additional information.

Sincerely,


  
Patsy Yeates Baynard  
Director, Environmental &  
Licensing Affairs

cc: Wayne Aronson  
EPA/ATL

Richard Drew  
NPDES Coordinator  
FDER

Peter T. McGarry  
Water Compliance  
Section  
EPA/ATL

copied: P. Kaval  
B. Andrews  
S. Rogers  
B. Thomas, SW Dist.  
C. Shaver, NPS  
CHF/IBT

	PROJECT DESIGN MANUAL	FILE NO. 14774.23.0200
	PROJECT DEFINITION	FPC 050489-0

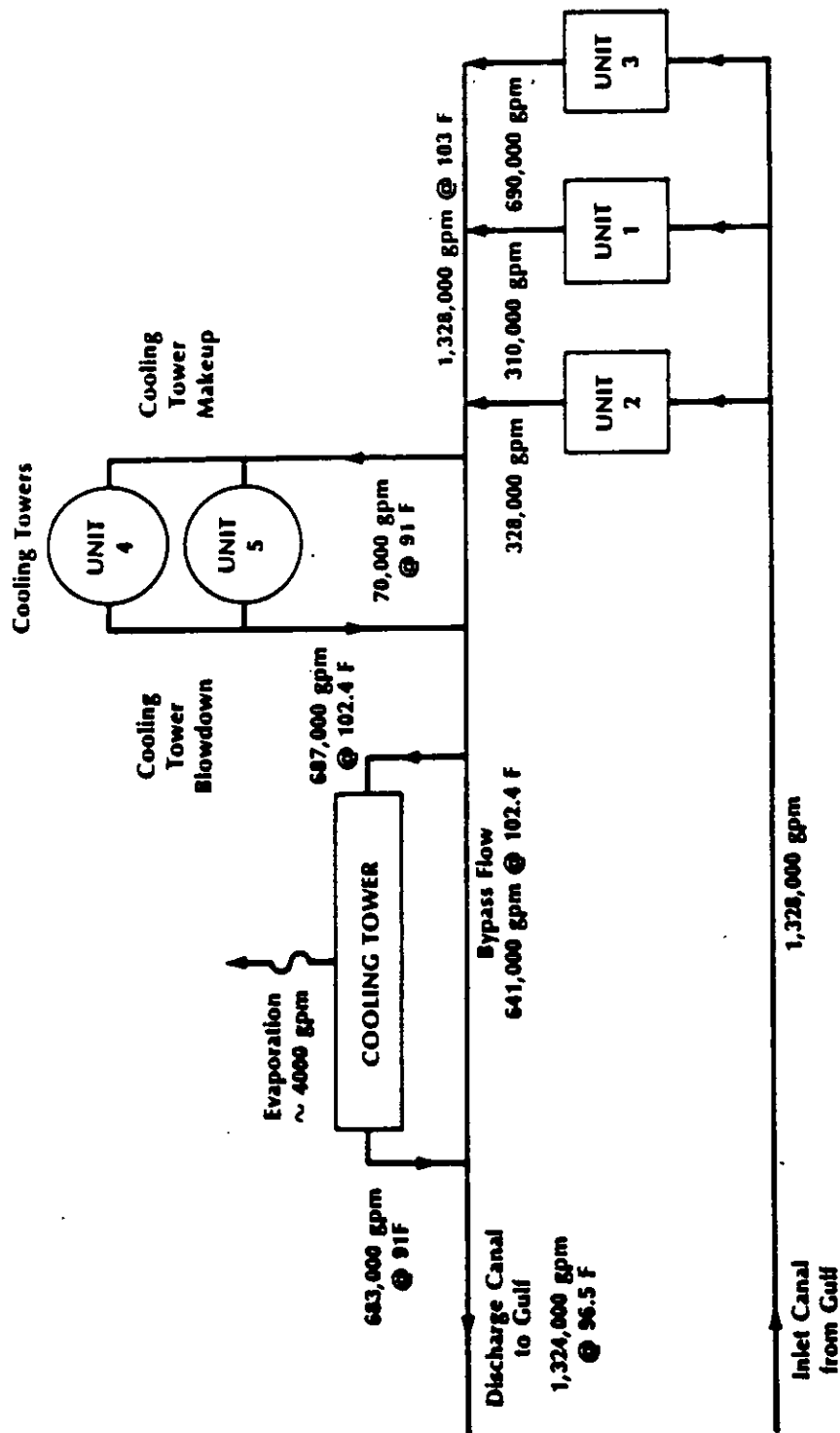


FIGURE 1.1-1. CRYSTAL RIVER SITE FLOW DIAGRAM WITH HELPER COOLING TOWER SYSTEM IN OPERATION



ENVIRONMENTAL SYSTEMS CORPORATION • 200 TECH CENTER DRIVE • KNOXVILLE, TENNESSEE 37912 • (615) 688-7900

February 20, 1989

Mr. Winston A. Smith  
Division Director  
Air, Pesticides & Toxics  
Environmental Protection Agency  
345 Courtland Street  
Atlanta, GA 30365

Dear Mr. Smith:

Subject: Cooling Tower Drift Emissions Tests Results

Pursuant to our meeting in Tampa on February 7, 1989 and the request of Mr. Eustice Parnell (Florida Power Corporation), summarized below are the results of drift measurements using Method 13A and the Sensitive Paper (SP) method. The test results provide the basis of being able to contrast repeat tests of the same cell, as well as compare the indications of drift emissions based on two different test methods.

The majority of the 13A tests were conducted as part of the EPA/Entropy work on chromium emissions from cooling towers. ESC made Sensitive Paper exposures during the tests, however, none of these were concurrent with a specific 13A test time frame.

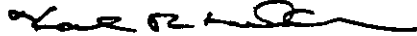
In reviewing the results, we had the following conclusions and concerns.

1. The results of the 13A "repeat" tests yielded excessive variability (this may be in part due to the problems with chromium analyses/conversion).
2. Two of the tests indicated drift rates of greater than 0.2%, a rate which we have not seen with any methods, even on a tower with drift eliminators in disrepair.
3. The Method 13A results were nearly always somewhat higher than the Sensitive Paper results - this is not unexpected and is what we have seen when comparing Sensitive Paper results with our own Isokinetic tests results. Contributing factors including droplet evaporation, interference of ambient, unscrubbed particulate, recirculation of the drift plume, and the inability of the Sensitive Paper to pick up small dry particulates.
4. It is difficult, with this limited and variable data base, to confidently guarantee a drift rate if Method 13A is the basis and if 0.002 percent of circulating water is the desired limit.

Mr. Winston A. Smith  
February 20, 1989  
Page 2

If you have any questions, please call me.

Sincerely,



Karl R. Wilber, P.E.  
Senior Vice President

KRW:dlh

Attachment

cc: Lee DeHihns, Deputy Regional Administration  
Eustice Parnell, Florida Power Corporation (Federal Express)

# RESULTS OF REPEAT TESTS

<u>TEST</u>	<u>TYPE OF TOWER</u>	<u>DRIFT ELIMINATOR</u>	<u>METHOD 13A RESULTS</u>	<u>RATIO OF HIGH TO LOW (13A)</u>	<u>SP RESULTS</u>	<u>RATIO OF 13A TO SP</u>
1	Crossflow	Herringbone Blade-Type	0.484 0.0574 0.0205	23.6	0.0045	8.6 <sup>A</sup>
2	Crossflow	PVC Honeycomb	0.0452 0.0045	10	0.0009	5 <sup>A</sup>
3	Counterflow	PVC Honeycomb	0.0068 0.0022	3.09	0.0006	7.5
4	Counterflow	PVC Honeycomb	0.0749 0.0031	24.2	0.0005	6.0
5	Crossflow	PVC Honeycomb	0.0130 0.0019	6.8	0.0002	9.5 <sup>A</sup>
6	Crossflow	PVC Honeycomb	0.002 0.001	2	0.0004	3.75
7	Crossflow	PVC Honeycomb	0.0823 0.0019	43	0.0008	2.37 <sup>A</sup>
8	Crossflow	PVC Honeycomb	0.0012 0.0014	1.1	0.0002	6.5

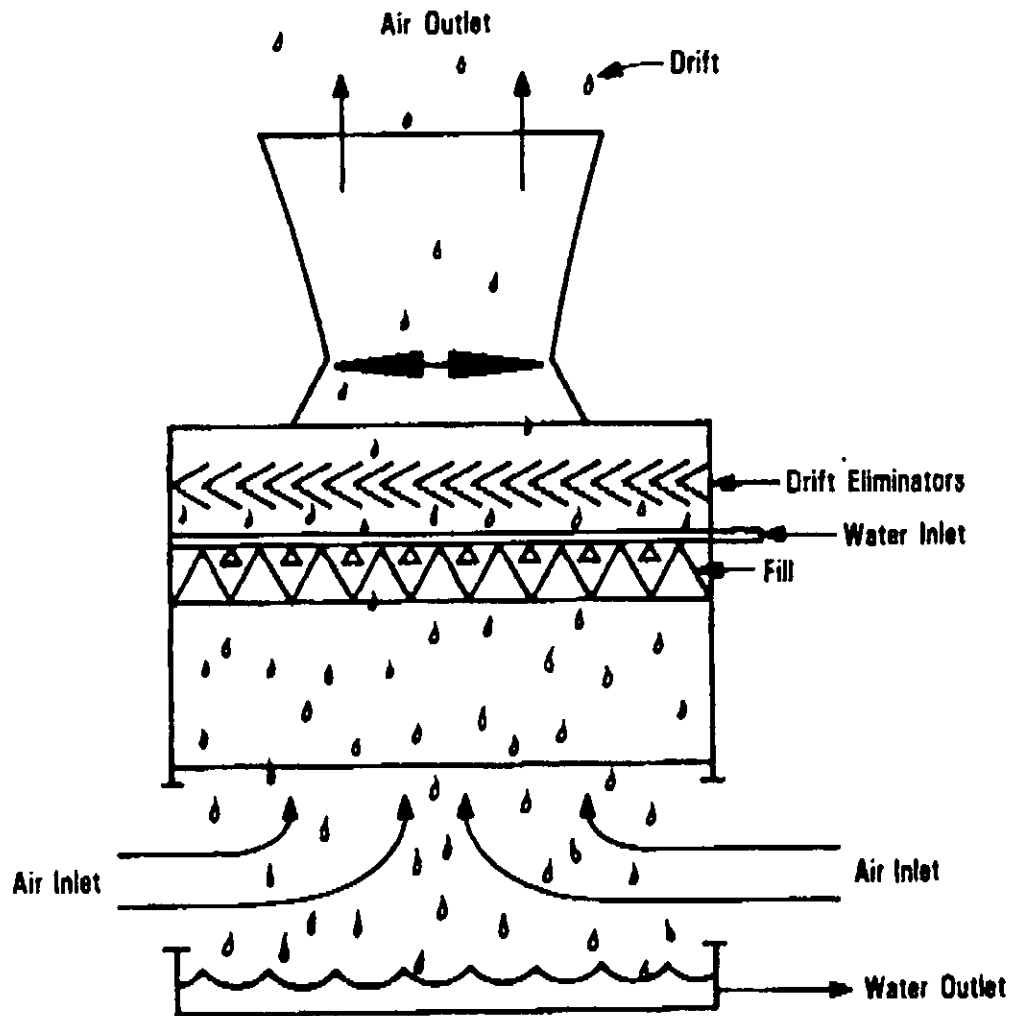
<sup>A</sup> High 13A reading omitted

## ADDITIONAL TESTS

9A Cell	Crossflow	Herringbone	0.344 0.068 0.0089 0.0039	N/A	0.0047 0.0103 0.0072 0.0040	73.2 6.6 1.2 0.98
10A Cell	Counterflow	PVC Honeycomb	0.0087 0.0122	N/A	0.0037 0.0042	2.4 2.9



### Induced Draft



### MECHANICAL DRAFT COUNTERFLOW



PM  
5-3-89  
Atlanta, GA  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET  
ATLANTA, GEORGIA 30365

4APT-APB-cdw

MAY 3 1989

Ms. Patty Adams  
Planner  
Bureau of Air Quality Management  
Florida Department of Environmental  
Regulation  
Twin Towers Office Building  
Tallahassee, Florida 32399-2400

RECEIVED

MAY 5 1989

DER-BAQM

Re: Florida Power Corporation (PSD-FL-139)

Dear Ms. Adams:

We acknowledge receipt of your March 23, 1989, letter containing the permit application for the proposed construction of a Helper Cooling Tower (mechanical draft-counterflow) for Crystal River Units 1, 2, and 3. We offer the following comments which were discussed on April 25, 1989, during a telephone conversation between Pradeep Raval of your agency and Karrie-Jo Shell of my staff.

Best Available Control Technology (BACT) for Particulate Matter (PM)

The BACT analysis was not performed in a "top-down" manner. The applicant chose a 0.002 percent drift rate (PM emission rate of 198.4 lbs/hr) as BACT without evaluating a more stringent limit. According to information submitted to our office from the Marley Cooling Tower Company (Marley), Marley manufactures mechanical draft cooling towers that are guaranteed to meet a drift rate of 0.001 percent. Therefore, we recommend the applicant evaluate the more stringent limit. As you know, the more stringent limit can only be rejected as BACT once it has been determined that meeting this limit is technologically or economically infeasible.

Compliance Test Methods

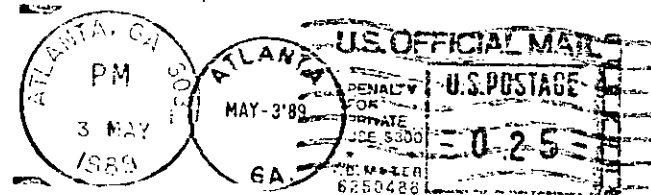
The application states that compliance with the PM emission limit will be determined by using sensitive paper. EPA had previously agreed that the sensitive paper method could be used because the applicant had presented a testing protocol that indicated that test results using the sensitive paper method and method 13A for PM emissions from natural draft cooling towers were comparable. However, it has been determined that this method is not acceptable for mechanical draft cooling towers. Therefore, EPA feels that method 13A with modified analytical procedures for determining PM emissions should be required. (The use of method 13A was discussed on April 20, 1989, during the meeting between representatives from EPA and Florida Power.)

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

OFFICIAL BUSINESS  
PENALTY FOR PRIVATE USE, \$300

**AIR-4**

Ms. Patty Adams  
Planner  
Bureau of Air Quality Management  
Florida Department of Environmental  
Regulation  
Twin Towers Office Building  
Tallahassee, FL 32399-2400



Thank you for allowing us the opportunity to provide our input prior to completion of the preliminary determination. If you have any questions concerning our review feel free to call me or Karrie-Jo Shell 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: Mr. C. H. Fancy, Deputy Chief  
Bureau of Air Quality Management  
Florida Department of Environmental  
Regulation  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

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

*copied: P. Duval  
J. Rogers  
B. Andrews  
B. Thomas sw dist.  
C. Shaver, NPS  
CHP/BT*

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING  
2600 BLAIR STONE ROAD  
TALLAHASSEE, FLORIDA 32399-2400



BOB MARTINEZ  
GOVERNOR

DALE TWACHTMANN  
SECRETARY

FAX TRANSMITTAL LETTER

FAX TO:

*Eustice Parnell*

813 866 4390

TO:

NAME: *Eustice Parnell*

AGENCY: \_\_\_\_\_

TELEPHONE NUMBER: *813/866-4390*

NUMBER OF PAGES (INCLUDING COVER SHEET): *3*

FROM:

Name: *Pradeep Raval*

AGENCY: *DER, BACM*

TRANSMITTAL ON A HITACHI HIFAX-35 PHONE NUMBER 904-488-6579

IF ANY OF THE PAGES ARE NOT CLEARLY RECEIVED, PLEASE CALL  
IMMEDIATELY. Phone No. *904/488-1344*

SENDERS NAME: *Patty Adams*

COMMENTS:

P 274 010 422

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED  
NOT FOR INTERNATIONAL MAIL

(See Reverse)

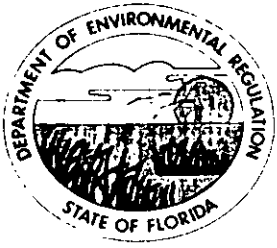
* U.S.G.P.O. 1985-480-794  PS Form 3800, June 1985	Sent to	Ms. Patsy Y. Baynard, FPC
	Street and No.	P.O. Box 14041
	P.O. State and ZIP Code	St. Petersburg, FL 33233
	Postage	
	Certified Fee	
	Special Delivery Fee	
	Restricted Delivery Fee	
	Return Receipt showing to whom and Date Delivered	
	Return Receipt showing to whom Date and Address of Delivery	
	TOTAL Postage and Fees	
Postmark or Date		
Mailed: 4-7-89		
Permit: AC 09-162037		
PSD-FL-139		

<p><b>SENDER:</b> Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.</p> <p>Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.</p> <p>1. <input type="checkbox"/> Show to whom delivered, date, and addressee's address. (Extra charge)</p> <p>2. <input type="checkbox"/> Restricted Delivery (Extra charge)</p>	
<p>3. Article Addressed to:</p> <p>Ms. Patsy Y. Baynard Florid- Power Corp. P. O. Box 14041 St. Petersburg, FL 33233</p>	<p>4. Article Number</p> <p>P 274 010 422</p> <p>Type of Service:</p> <p><input type="checkbox"/> Registered <input type="checkbox"/> Insured</p> <p><input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD</p> <p><input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise</p> <p>Always obtain signature of addressee or agent and DATE DELIVERED.</p>
<p>5. Signature — Address</p> <p>X</p>	<p>8. Addressee's Address (ONLY if requested and fee paid)</p>
<p>6. Signature — Agent</p> <p>X</p> <p><i>Handwritten Signature</i></p>	
<p>7. Date of Delivery</p> <p>APR 13 1989</p>	

PS Form 3811, Mar. 1988

\* U.S.G.P.O. 1988-212-865

DOMESTIC RETURN RECEIPT



## *Florida Department of Environmental Regulation*

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

Bob Martinez, Governor

Dale Twachtman, Secretary

John Shearer, Assistant Secretary

April 7, 1989

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

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

Dear Ms. Baynard:

Re: Air Construction Permit Application for Helper Cooling Tower  
at Crystal River, AC 09-162037, PSD-FL-139

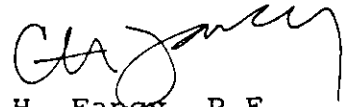
The Department has reviewed your application package dated March 8, 1989, for the construction of a helper cooling tower at Crystal River, and has deemed it incomplete. Please submit the following including all assumptions, calculations, and reference material, to resume the completeness review:

1. Please submit a copy of the process flow diagram referred to in Section III of the application form.
2. Verify the projected particulate emission rate from the proposed cooling tower (428.2 TPY vs. 438.3 TPY).
3. Indicate which operation parameters will be recorded in the daily logs as compliance indicators, since annual emissions are based on limited operation.
4. The Department has noted that sensitive paper has been proposed for compliance tests. Please explain your reasons for not using EPA Method 13A, which EPA considers more accurate for determining emissions.
5. Please evaluate the type of mist eliminator required for control of drift from the cooling tower using a top-down Best Available Control Technology (BACT) approach.

Ms. Patsy R. Baynard  
Page Two  
April 7, 1989

If you have any questions, please contact Pradeep Raval (permitting), Tom Rogers (modeling), or Barry Andrews (BACT) at (904)488-1344 or write to me at the above address.

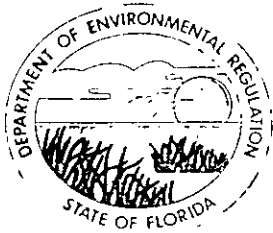
Sincerely,

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

CHF/PR/s

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





## *Florida Department of Environmental Regulation*

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

Bob Martinez, Governor

Dale Twachtman, Secretary

John Shearer, Assistant Secretary

March 23, 1989

Mr. Wayne Aronson, Chief  
Program Support Section  
U.S. EPA, Region IV  
345 Courtland Street, N.E.  
Atlanta, Georgia 30365

Dear Mr. Aronson:

RE: Florida Power Corporation  
Helper Cooling Towers, Crystal River Units 1, 2, & 3  
State Permit Number AC 09-162037  
Federal Permit Number PSD-FL-139

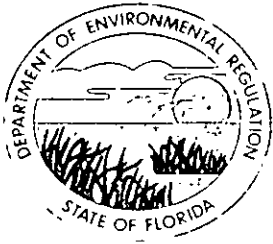
Enclosed for your review and comment is the permit application for the above referenced project. If you have any comments or questions, please contact Pradeep Raval, Barry Andrews, or Tom Rogers at the above address or at (904)488-1344.

Sincerely,

Patty Adams  
Planner  
Bureau of Air Quality Management

/pa

Enclosure



## Florida Department of Environmental Regulation

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

Bob Martinez, Governor

Dale Twachtman, Secretary

John Shearer, Assistant Secretary

March 21, 1989

Mrs. Chris Shaver, Chief  
Policy, Planning and Permit Review Branch  
Dept. of Interior, National Park Service  
Post Office Box 25287  
Denver, Colorado 80225

Dear Mrs. Shaver:

RE: Florida Power Corporation  
Helper Cooling Towers, Crystal River Units 1, 2, & 3  
State Permit Number AC 09-162037  
Federal Permit Number PSD-FL-139

Enclosed for your review and comment is the permit application for the above referenced project. If you have any comments or questions, please contact Pradeep Raval, Barry Andrews, or Tom Rogers at the above address or at (904)488-1344.

Sincerely,

Patty Adams  
Planner  
Bureau of Air Quality Management

/pa

Enclosure