P.O. Box 078768, West Palm Beach, FL 33407-0768
5500 Village Blvd.

FPL

FAXED

May 13, 1991

Ms. Cindy Phillips
State of Florida
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

RE: **Sanford Plant, Unit No. 4**
Orimulsion Test Burn
Emissions Testing -
Vanadium Pentoxide

Dear Ms. Phillips:

Please be advised that, on Friday evening, May 10, 1991, Sanford Plant was notified that, due to operating problems with two of our major units which caused those units to come off-line, Sanford Unit No. 4 would be taken off Orimulsion and fired on oil in order to be able to operate at full load, with Sanford Unit No. 5 also on oil. At the time, Entropy Environmentalists were on site conducting some parametric testing, and were scheduled to return on Monday, May 13th, for two additional days of parametric testing and one day of emissions testing for Vanadium Pentoxide, as previously notified.

In light of the need to have Entropy complete the testing underway, Sanford Unit No. 4 was allowed to remain on Orimulsion over the weekend and the Entropy schedule was accelerated. Thus, the Vanadium Pentoxide test scheduled for Tuesday, May 14th, was actually conducted on Sunday, May 12th.

Following the Sunday test, Sanford Unit no. 4 was taken off Orimulsion and is not expected at this time to resume Orimulsion firing until Thursday, May 16th, when it is expected that the FPL System will regain generating stability. At such time as Orimulsion firing is resumed, associated conditions will also resume.

Please call me at (407) 697-6926 if you have any questions.

Sincerely,

Elsa A. Bishop

Elsa A. Bishop
Senior Environmental Coordinator
Florida Power & Light Company

EAB:jm
Enclosure

cc: A. Alexander - DER/Orlando
Charles M. Collins - DER/Orlando

FPL

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May 16, 1991

Mr. John Gray
C/O Pinnacle Company
5445-6 Delaney Avenue
Orlando, Florida 32801

RE: **Sanford Plant, Unit No. 4**
Orimulsion Test Burn
Weekly Opacity Reports - May 6 - 12, 1991

Dear Mr. Gray:

As was agreed during the meeting held on March 5, 1991 between representatives of the Gray family and of FPL, attached please find a copy of the Weekly Opacity Research Status Report relevant to the Orimulsion Test Burn at our Sanford Plant, Unit No. 4 for the week of May 6 - 12, 1991. This is one of several reports submitted to the Florida DER on a weekly basis, as required by the Department's permit authorizing the Test Burn.

Sincerely,

Elsa A. Bishop
Senior Environmental Coordinator
Florida Power & Light Company

EAB:jm

Enclosure

cc: Cindy Phillips - DER/Tall (w/o encl.)
Charles M. Collins - DER/Orlando (w/o encl.)
Saundra Gray - DeBary/Fla. (w/o encl.)

FPL

P.O. Box 078768, West Palm Beach, FL 33407-0768
5500 Village Blvd.

March 21, 1991

Mr. John Gray
C/O Pinnacle Company
5445-6 Delaney Avenue
Orlando, Florida 32801

RE: **Sanford Plant, Unit No. 4**
Orimulsion Test Burn
Weekly Opacity Reports - March 11-17, 1991

Dear Mr. Gray:

As was agreed during the meeting held on March 5, 1991 between representatives of the Gray family and of FPL, attached please find a copy of the Weekly Opacity Research Status Report relevant to the Orimulsion Test Burn at our Sanford Plant, Unit No. 4 for the week of March 11-17, 1991. This is one of several reports submitted to the Florida DER on a weekly basis, as required by the Department's permit authorizing the Test Burn.

Sincerely,

Elsa A. Bishop
Senior Environmental Coordinator
Florida Power & Light Company

EAB:jm

Enclosure

cc: Cindy Phillips - DER/Tall (w/o encl.)
Charles M. Collins - DER/Orlando (w/o encl.)
Sondra Gray - DeBary/Fla. (w/o encl.)

FPL

Inter-Office Correspondence

To:	M. A. Smith, Ph.D.	Date:	March 19, 1991
From:	M. A. Halpin, P.E.	Location:	PLT/OPS
Subject:	Orimulsion Air Operating Permit		

This is the third of a series of weekly reports detailing our efforts to reduce opacity while combusting Orimulsion on Sanford Plant's Unit No. 4.

As reported previously, a statistical analysis of the relationship between opacity and key operating parameters indicates that the strongest correlation exists between opacity and fuel flow.

Further analysis has now been done in this area. To date, approximately 550,000 barrels of Orimulsion have been combusted representing about three 200,000 barrel tanker shipments. Opacity data versus unit generation (load) has been stratified between the individual tanker shipments in an attempt to determine if any differences exist.

Preliminary indications are that there appear to be different relationships between opacity and load based upon fuel constituent concentrations. The Orimulsion combusted from the last fuel shipment, for example, behaved more similarly to oil than earlier shipments, in that opacity did not tend to increase as unit output approached 100%. In order to develop a better understanding of the cause-effect relationship observed, we now intend to compare the chemical properties of fuel shipments received to determine if it is possible to identify variable(s) that may contribute to opacity differences.

MPH

a:\masorim.mph

P.O. Box 078768, West Palm Beach, FL 33407-0768
5500 Village Blvd.

FPL

FEDERAL EXPRESS

March 20, 1991

RECEIVED
MAR 25 1991
DER - BAQM

Mr. Clair Fancy
Division of Air Resources Management
Bureau of Air Quality Management
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, FL. 32399-2400

Re: **FPL Sanford Unit No. 4**
Orimulsion Test Burn Project
Updated Test Matrix

Dear Clair:

I would like to thank you and Cindy Phillips for taking the time to meet yesterday with Bill Green and me, to discuss the revised Orimulsion Test Burn Project Test Matrix, a copy of which is attached. As you are aware, Sanford Unit No. 4 has been off-line since March 13, 1991 due to damage to boiler structural support beams, and it is not expected to return to service until the weekend of March 23-24, 1991. Nevertheless, it is still our intention to complete the Test Burn requiring higher emissions limits by May 31, 1991.

As we discussed, you will note from the attached test matrix that we will be firing natural gas and Orimulsion during the last two weeks in May in order to further evaluate fuel performance, as well as opacity reduction methods.

Please do not hesitate to call me at (407) 697-6926 if you have any questions with regard to the present test schedule. As always, we appreciate the Department's continued guidance and support in this matter.

Sincerely,

Elsa A. Bishop
Senior Environmental Coordinator
Florida Power & Light Company

EAB:ln

Attachment

cc: Cindy Phillips - DER/Tall
Charles M. Collins - DER/Orlando

SANFORD UNIT 4 ORIMULSION TEST BURN PROJECT

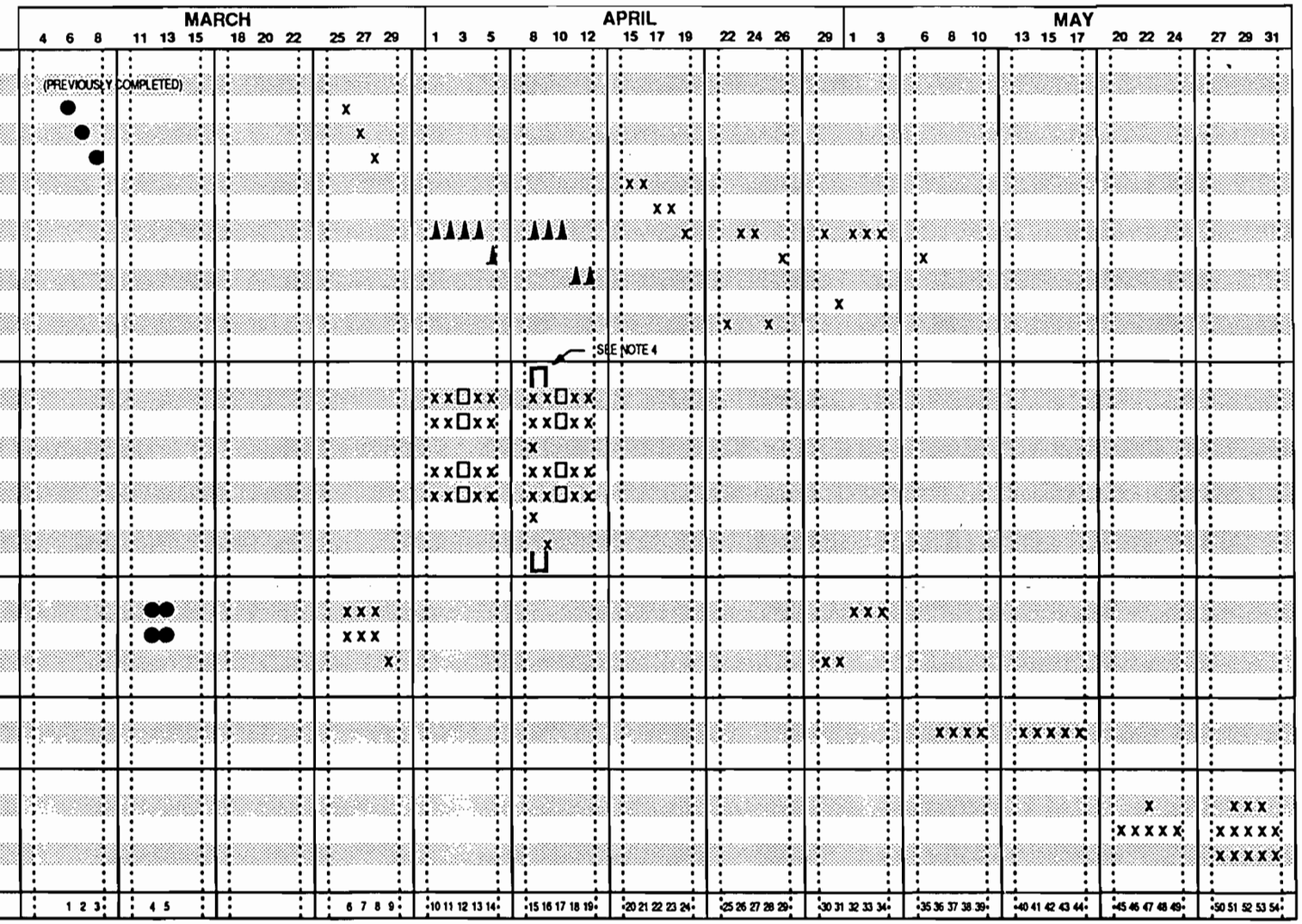
TEST MATRIX

STATUS AS OF: 21 MAR 91

TEST CATEGORY/ DESCRIPTION	RESP	LOAD	DURATION	EXCESS OXYGEN
I BOILER PERFORMANCE TESTS:				
A)	FWEC	VARY	2 HRS EA	VARY.
B)	•	100%	6 HRS	0.40%
C)	•	100%	•	0.70%
D)	•	100%	•	1.00%
E)	•	CONTROL	•	FROM MODEL
F)	•	100%	•	FROM MODEL
G)	•	90-100%	•	OPTIMUM
H)	•	LOAD CHG	•	OPTIMUM
I)	•	75-80%	•	OPTIMUM
J)	•	50%	•	OPTIMUM
K)	•	25%	•	OPTIMUM
II STACK EMISSIONS TESTS:				
A) PARTICULATE	ENTROPY			
B) SO2 (EPA METHOD 6C)	•			
C) SO3 (EPA METHOD 8)	•			
D) NOX (EPA METHOD 7E)	•			
E) VOC (EPA METHOD 25A)	•			
F) TRACE ELEM & METALS	•			
G) V2 O5	•			
III AIR PREHEATER OUTLET EMISSION TESTS:				
A) PARTICULATE (EPA 5/17)	ENTROPY			
B) SO3 (EPA METHOD 8)	ENTROPY			
C) PARTICULATE SIZE DIST	SRI			
IV CONTINUOUS BURN TESTS:				
A) EMISSIONS EQPT TESTS		100%		
V 80/20 CO-FIRE TESTS:				
A) PARTICULATE (EPA 5/17)		100%		
B) OPACITY TEST		100%		
C) OPTIMUM FUEL MIX		100%		

PER TEST NUMBER & SEQUENCE ABOVE

PER TEST NUMBER & SEQUENCE ABOVE



NOTES:

1. CEM'S WILL BE USED TO MONITOR AND RECORD CO, O2, SO2, NOX AND OPACITY.
2. FUEL SAMPLING AS REQUIRED.
3. BOILER DATA WILL BE COLLECTED DURING THE FIRST TWO WEEKS OF APRIL.
4. TEST NUMBERS 15 & 16 DURATION IS TEN (10) HOURS NET.
5. CALENDAR REPRESENTS EVERY MONDAY, WEDNESDAY, AND FRIDAY DATE.

LEGEND:

- X = FORECASTED ORIMULSION TEST
- □ = EMISSION TESTING UNDER SOOT BLOWING CONDITIONS
- ▲ = REFERENCE BOILER LOAD FOR STACK TEST
- ● = COMPLETED ORIMULSION TEST

FPL

P.O. Box 078768, West Palm Beach, FL 33407-0768
5500 Village Blvd.

March 20, 1991

Mr. A. Alexander, Deputy Assistant Secretary
State of Florida Department of Environmental Regulation
Central Florida District
3319 Maguire Blvd., Suite 232
Orlando, Florida 32803

Re: **Sanford Plant, Unit 4**
Orimulsion Test Burn
Fuel Analysis - as Received

Dear Mr. Alexander:

As required in specific condition No. 7e of the Department permit authorizing the Orimulsion Test Burn at FPL's Sanford Unit No. 4, enclosed please find a copy of the analysis of Orimulsion fuel received at the Jacksonville terminal on March 8, 1991.

Please call me at (407) 697-6926 if you have any questions.

Sincerely,

Elsa A. Bishop
Senior Environmental Coordinator
Florida Power & Light Company

EAB:ln

Enclosure

cc: Cindy Phillips - DER/Tall

POWER RESOURCES CENTRAL LABORATORY
FLORIDA POWER AND LIGHT COMPANY
STATE OF FLORIDA LABORATORY CERTIFICATION NUMBERS:
DRINKING WATER CERTIFICATION NUMBER: 56275
ENVIRONMENTAL CHEMISTRY CERTIFICATION NUMBER: E56078

AS-RECEIVED - PSN ORIMULSION

VESSEL: ONDA CHIARA (DELIVERY #4)

DATE COLL'D: 03-08-91 DATE REC'D: 03-09-91 DATE REPORTED: 03-13-91

	ANALYTICAL METHOD	VOLUMETRIC SHIP COMPOSITE	
DENSITY @60F, g/cm3	(ASTM D-4052)	1.0076	
DENSITY @60F, lbs/BBL		353.161	
BTU/LB	(ASTM D-240)	12964	
MBTU/BBL		4578	
MBTU/TON		25928	
% SULFUR	(ASTM D-1552)	2.6	
VISCOSITY @ 31.3C, mPAS SHEAR RATE = 139.1	(ASTM D-4684)	587	
% WATER	(ASTM D-95)	32	
% SEDIMENT	(ASTM D-473)	0.27	
% ASH	(ASTM D-482)	0.14	
% ASPHALTENES	(IP-143)	7.8	
VANADIUM (MG/KG)		266	
SODIUM (MG/KG)		83	
IRON (MG/KG)		5	
NICKEL (MG/KG)		69	
MAGNESIUM (MG/KG)		309	
POUR POINT, F		33	
SO2 (LBS/MILLION BTU)		4.0	
% CARBON,(BY WEIGHT)		60.31	
% HYDROGEN,(BY WEIGHT)		7.03	
% NITROGEN,(BY WEIGHT)		0.50	*
% OXYGEN,(BY DIFFERENCE)		0.02	

COMMENTS: * ANALYZED BY SCHWARKZOPF LABORATORY.

COPIES TO:

J. ALCANTARA, PSN/PLT
R. ALLEN, JEN/NP
E. BISHOP, JEN/NP
D. CHRISTIAN, JPE/EDO
M. HALPIN, PSN/PLT
D. KNUTSON, PRS/EDO
R. LIPPMAN, FR/GO
M. MILLARES, JPE/EDO
J. NORMAN, PRS/EDO
K. OLEN, JRD/NP
J. POCE, FR/GO
R. RUHLMAN, PSN/PLT
B. STUART, PSN/PLT
G. TABOR, FR/GO
R. YOUNG, PSN/PLT
E. CALLANDER, FR/GO

RECEIVED
MAR 2 1 1991
ENV. PERMITTING

ANALYZED BY: J. Uzia / Y. Hamilton

CERTIFIED BY: K. M. O'Donnell DATE: 3/18/91