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5500 Village Blvd.

FEDERAL EXPRESS

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April 4, 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  
Weekly Compliance Reports - March 25-31, 1991

Dear Ms. Phillips:

As required by the specific conditions of the Department's permit and Order authorizing the Orimulsion Test Burn, enclosed please find the compliance reports for the week of March 25-31, 1991 as follows:

<u>Required in Specific Condition No.</u>	<u>Report Title</u>
8h & 8i (Order Condition No. 15)	Burn Schedule/Fuel Usage/Full Power Burn Days
8j (Order Condition No. 15)	Daily Opacity Logs
8j (Order Condition No. 15)	Summary - Opacity CEM 6-min. Averages
(Order Condition No. 18)	Opacity Research Status Report

**FEDERAL EXPRESS**

QUESTIONS? CALL 800-238-5355 TOLL FREE.

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PACKAGE  
TRACKING NUMBER**

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**864037033L**

**RECIPIENT'S COPY**

From (Your Name) Please Print <b>Elsa A. Bishop</b> Company <b>FNL</b> Street Address <b>5900 VILLAGE BLVD</b> City <b>WEST PALM BEACH FL</b>		Date <b>4/4/91</b>	Your Phone Number (Very Important) <b>(407) 697-6925</b> Department/Floor No.	To (Recipient's Name) Please Print <b>Cindy Phillips</b> Company <b>DER</b> Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip® Codes.) <b>2600 Blair Stone Road</b> City <b>Tallahassee, Florida</b>		Recipient's Phone Number (Very Important)  Department/Floor No.  State <b>FL</b>
--	--	-----------------------	---	---	--	---

YOUR INTERNAL BILLING REFERENCE INFORMATION (First 24 characters will appear on invoice.) <b>Environmental Affairs 6024-90-000-000-630</b>	IF HOLD FOR PICK-UP, Print FEDEX Address Here Street Address City State ZIP Required
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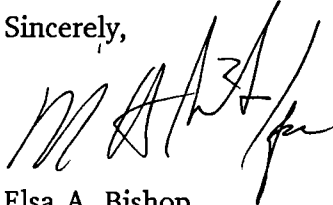
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Sanford Plant, Unit No. 4  
Orimulsion Test Burn  
Weekly Compliance Reports  
Page 2

For your convenience, we have compiled all the above reports into one booklet. This format will be repeated for each reporting cycle throughout the Orimulsion Test Burn.

If you have any questions, please call me at (407) 697-6926.

Sincerely,

A handwritten signature in black ink, appearing to read 'E.A. Bishop', with a stylized flourish at the end.

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

EAB:jm

Enclosure

cc: Mr. A. Alexander - DER/Orlando (w/o encl.)



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

FEDERAL EXPRESS

April 4, 1991

Mr. A. Alexander, Deputy Assistant Secretary  
State of Florida Department of Environmental Regulation  
Central Florida District  
3319 Maguire Blvd., Suite 232  
Orlando, Florida 32802

RE: **Sanford Plant, Unit No. 4**  
**Orimulsion Test Burn**  
**Weekly Compliance Reports - March 25-31, 1991**

Dear Mr. Alexander:

As required by the specific conditions of the Department's permit and Order authorizing the Orimulsion Test Burn, enclosed please find the compliance reports for the week of March 25-31, 1991 as follows:

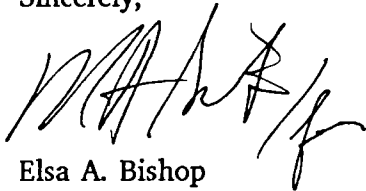
<u>Required in</u> <u>Specific Condition No.</u>	<u>Report Title</u>
8h & 8i (Order Condition No. 15)	Burn Schedule/Fuel Usage/Full Power Burn Days
8j (Order Condition No. 15)	Daily Opacity Logs
8j (Order Condition No. 15)	Summary - Opacity CEM 6-min. Averages
(Order Condition No. 18)	Opacity Research Status Report

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If you have any questions, please call me at (407) 697-6926.

Sincerely,



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

EAB:jm

Enclosure

cc: Cindy Phillips - DER/Tall (w/o encl.)

FPL SANFORD PLANT  
WEEKLY ORIMULSION SUMMARY

WEEK ENDING 03/31/91

ORIMULSION  
HEAT VALUE 4.486 MMBTU/BBL

#6 OIL  
HEAT VALUE 6.322 MMBTU/BBL

DAY	DATE	ORIMULSION BURNED BBLs	FULL POWER BURN DAYS	#6 OIL BURNED BBLs
MONDAY	03/25/91	18808	0.8680	0
TUESDAY	03/26/91	19483	0.8992	0
WEDNESDAY	03/27/91	16763	0.7737	0
THURSDAY	03/28/91	17388	0.8025	0
FRIDAY	03/29/91	16192	0.7473	0
SATURDAY	03/30/91	15401	0.7108	0
SUNDAY	03/31/91	11847	0.5468	0
TOTALS		115882	5.3482	0

Tempora 80% thru 5/31/91

Sanford PLANT  
**DAILY OPACITY EMISSIONS REPORT**  
 Form 4954 (Non-Stocked) Rev. 2/84

UNIT NO. **MON** DATE **MAR 25 1991**  
 4 (80% Orimulsion)

SIX MINUTE INTERVALS											Six Minute Intervals > 80%	
Time	1	2	3	4	5	6	7	8	9	10	This Hour	Last 24 Hours
12MN											12MN	
1AM											1AM	
2											2	
3											3	
4											4	
5											5	
6											6	
7											7	
8											8	
9											9	
10						C2 84		C2 81			10	2
11											11	
12N											12N	
1P											1P	
2											2	
3											3	
4											4	
5											5	
6											6	
7	C2 88	C2 87	C2 84	C2 81			C2 80		C2 86		7	6
8											8	8
9						C2 84	C2 82				9	2
10											10	10
11											11	

**A MALFUNCTION**  
 MALFUNCTION  
 \* 1 Monitor Out of Service  
 \* 2 Burner Problem  
 \* 3 Control Problem  
 \* 4 Other

**B START-UP/SHUT-DOWN**  
 1 Start-Up  
 2 Shut-Down

**C LOAD CHANGE/SOOT-BLOWING**  
 \*1 Rapid Load Change  
 2 Soot-blowing  
 3 Liming Boiler  
 4 Cleaning Air Pre-heater  
 A rapid load change is defined as a change that occurs at the rate of 0.5% per minute or more and exceeds 10% of the units rated capacity and occurs when the unit is operating at greater than 10% of rated capacity, excluding startup and shutdown.

**INSTRUCTIONS**  
 Fill in the opacity and reason code or codes in the appropriate box whenever the opacity exceeds 20% for any 6 minute period on the recorder. Example: 50A3 indicates an opacity reading of 50% attributed to control problems.  
 Use the comment column where additional explanation is appropriate.  
 \*Lead cause + corrective action

Document chart lab will provide reason codes

Tempora 80% thru 5/31/91

Sanford PLANT  
**DAILY OPACITY EMISSIONS REPORT**  
 Form 4954 (Non-Stocked) Rev. 2/84

UNIT NO. 4 (80% Orimulsion)	DATE TUE MAR 26 1991
--------------------------------	-------------------------

Time	SIX MINUTE INTERVALS										Six Minute Intervals > 80%	
	1	2	3	4	5	6	7	8	9	10	This Hour	Last 24 Hours
12MN											12MN	
1AM											1AM	
2											2	
3											3	
4											4	
5											5	
6											6	
7											7	
8											8	
9											9	
10											10	
11											11	
12N											12N	
1P											1P	
2											2	
3											3	
4											4	
5											5	
6											6	
7											7	
8			850.2	840.2	820.2	870.2	920.2	810.2	0280		8	7
9		830.4									9	8
10											10	
11											11	

**A MALFUNCTION**

- MALFUNCTION
- \* 1 Monitor Out of Service
  - \* 2 Burner Problem
  - \* 3 Control Problem
  - \* 4 Other

**B START-UP/SHUT-DOWN**

- 1 Start-Up
- 2 Shut-Down

**C LOAD CHANGE/SOOT-BLOWING**

- \* 1 Rapid Load Change
  - \* 2 Soot-blowing
  - \* 3 Liming Boiler
  - \* 4 Cleaning Air Pre-heater
- A rapid load change is defined as a change that occurs at the rate of 0.5% per minute or more and exceeds 10% of the units rated capacity and occurs when the unit is operating at greater than 10% of rated capacity, excluding startup and shutdown.

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Use the comment column where additional explanation is appropriate.

Document chart lab will provide reason codes



Temporarily 80% thru 5/31/91

Sanford PLANT  
**DAILY OPACITY EMISSIONS REPORT**  
 Form 4954 (Non-Stocked) Rev. 2/84

UNIT NO. \_\_\_\_\_ DATE **WED MAR 27 1991**  
*4 (80% Orimulsion)*

SIX MINUTE INTERVALS											Six Minute Intervals > 80%	
Time	1	2	3	4	5	6	7	8	9	10	This Hour	Last 24 Hours
12MN											12MN	
1AM											1AM	
2											2	
3									8102	8102	3	2
4	8102		0284	8502	8302						4	6
5											5	
6											6	
7	0285	9102				8102					7	3
8											8	
9											9	
10											10	
11											11	
12N											12N	
1P											1P	
2											2	
3											3	
4	0280										4	10
5						0286					5	11
6							0281			8202	6	13
7	0286	0284	0281		0282						7	17
8											8	
9											9	
10											10	
11											11	

**A MALFUNCTION**

- MALFUNCTION
- \* 1 Monitor Out of Service
  - \* 2 Burner Problem
  - \* 3 Control Problem
  - \* 4 Other

**B START-UP/SHUT-DOWN**

- 1 Start-Up
- 2 Shut-Down

**C LOAD CHANGE/SOOT-BLOWING**

- \* 1 Rapid Load Change.
  - \* 2 Soot-blowing
  - \* 3 Liming Boiler
  - \* 4 Cleaning Air Pre-heater
- A rapid load change is defined as a change that occurs at the rate of 0.5% per minute or more and exceeds 10% of the units rated capacity and occurs when the unit is operating at greater than 10% of rated capacity, excluding startup and shutdown.

**INSTRUCTIONS**

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Use the comment column where additional explanation is appropriate.

*Document chart lab will provide reason codes*

Tempora 80% thru 5/31/91

Sanford PLANT  
**DAILY OPACITY EMISSIONS REPORT**  
 Form 4954 (Non-Stocked) Rev. 2/84

UNIT NO. **THU MAR 28 1991**

4 (80% Orimulsion)

SIX MINUTE INTERVALS											Six Minute Intervals > 80%	
Time	1	2	3	4	5	6	7	8	9	10	This Hour	Last 24 Hours
12MN											12MN	
1AM											1AM	
2											2	
3											3	
4											4	
5								C2 85			5	1
6							C2 89				6	1
7											7	
8											8	
9											9	
10											10	
11											11	
12N											12N	
1P											1P	
2										C-2 81	2	1
3											3	
4											4	
5										C2 98	5	1
6	C2 80	C2 94		82C2	88C2						6	4
7											7	
8								C2-81	C2-93		8	2
9					82C2	86C2	82C2	81C2	86C2		9	5
10				84C2							10	1
11					80C2						11	1

**A MALFUNCTION**

**MALFUNCTION**

- \* 1 Monitor Out of Service
- \* 2 Burner Problem
- \* 3 Control Problem
- \* 4 Other

**B START-UP/SHUT-DOWN**

- 1 Start-Up
- 2 Shut-Down

**C LOAD CHANGE/SOOT-BLOWING**

- \* 1 Rapid Load Change
- \* 2 Soot-blowing
- \* 3 Liming Boiler
- \* 4 Cleaning Air Pre-heater

A rapid load change is defined as a change that occurs at the rate of 0.5% per minute or more and exceeds 10% of the units rated capacity and occurs when the unit is operating at greater than 10% of rated capacity, excluding startup and shutdown.

**INSTRUCTIONS**

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Use the comment column where additional explanation is appropriate.

Document chart lab will provide reason codes

\*Always use 1 consecutive section

Temporary 80% thru 5/31/91

Sanford PLANT  
**DAILY OPACITY EMISSIONS REPORT**  
 Form 4954 (Non-Stocked) Rev. 2/84

UNIT NO.	DATE
4 (80% Orimulsion)	FR MAR 29 1991

SIX MINUTE INTERVALS											Six Minute Intervals > 80%		
Time	1	2	3	4	5	6	7	8	9	10		This Hour	Last 24 Hours
12MN											12MN		
1AM							83C2		81C2	84C2	1AM	3	3
2	85C2	80C2	83C2	89C2	91C2		85C2				2	6	9
3											3		
4											4		
5										81C2	5	1	10
6	89C2	87C2	82C2	81C2	81C2			84C2	82C2		6	7	17
7											7		
8											8		
9											9		
10							84C2	83C2			10	2	19
11											11		
12N											12N		
1P											1P		
2											2		
3							C-2 82 C-4 82	C-2 83 C-4 83	C-2 80 C-4 80		3	3	22
4											4		
5											5		
6			C-2 82 C-4 82		C-2 89 C-4 89						6	2	24
7								C-2 81 C-4 81			7	1	25
8				C-2 85 C-4 85			C-2 87 C-4 87	C-2 81 C-4 81			8	3	28
9		C-2 81 C-4 81									9	1	29
10								C-2 86 C-4 86	C-2 88 C-4 88	C-2 82 C-4 82	10	3	32
11	C-2 82 C-4 82	C-2 87 C-4 87	C-2 86 C-4 86	C-2 86 C-4 86	C-2 84 C-4 84						11	5	37

**A MALFUNCTION**  
 MALFUNCTION  
 \* 1 Monitor Out of Service  
 \* 2 Burner Problem  
 \* 3 Control Problem  
 \* 4 Other

**B START-UP/SHUT-DOWN**  
 1 Start-Up  
 2 Shut-Down

**C LOAD CHANGE/SOOT-BLOWING**  
 \*1 Rapid Load Change  
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 3 Liming Boiler  
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Document chart lab will provide reason codes

\*Need cause + corrective action

Tempora 80% thru 5/31/91

Sanford PLANT  
**DAILY OPACITY EMISSIONS REPORT**  
 Form 4954 (Non-Stocked) Rev. 2/84

UNIT NO. **SAT** MAR 30 1991  
 4 (80% Opacity)

SIX MINUTE INTERVALS											Six Minute Intervals > 80%		
Time	1	2	3	4	5	6	7	8	9	10		This Hour	Last 24 Hours
12MN											12MN		
1AM											1AM		
2										C283	2	1	1
3			C282		C284	C282					3	3	3
4											4		
5											5		
6											6		
7			C281			C282	C283	C283	C282		7	5	8
8											8		
9											9		
10					C288	C284					10	2	10
11											11		
12N				C281	C285						12N	2	12
1P											1P		
2											2		
3											3		
4				C282	C280					C287	4	3	15
5						C2400	C2400	C2100	C2100	C2100	5	5	20
6	C490	C4100	100C4	92C4	100C4	100C4		85C4	92C4	82C4	6	9	29
7		83C4		81C4		81C4	91C4	93C4	100C4	90C4	7	7	36
8	C280					87C2	86C2		80C2	80C2	8	8	41
9						84C2	89C2	86C2	80C2		9	4	45
10						80C2	83C2	87C2			10	3	48
11											11		

**A MALFUNCTION**

MALFUNCTION

- \* 1 Monitor Out of Service
- \* 2 Burner Problem
- \* 3 Control Problem
- \* 4 Other

**B START-UP/SHUT-DOWN**

- 1 Start-Up
- 2 Shut-Down

**C LOAD CHANGE/SOOT-BLOWING**

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Temporary 80% thru 5/31/91

Sanford PLANT  
**DAILY OPACITY EMISSIONS REPORT**  
 Form 4954 (Non-Stocked) Rev. 2/84

UNIT NO.	DATE
4 (80% Orimulsion)	MAR 31 1991

SIX MINUTE INTERVALS											Six Minute Intervals > 80%		
Time	1	2	3	4	5	6	7	8	9	10		This Hour	Last 24 Hours
12MN									90C2	92C2	12MN	2	2
1AM	91C2	97C2	82C2				81C2				1AM	4	6
2											2		
3											3		
4				81C2		83C2	83C2	83C2	81C2	82C2	4	6	11
5	82C2	82C2	81C2			82C2	82C2				5	5	16
6				81C2			81C2		81C2		6	3	19
7	85C2	80C2	81C2	82C2				86C2	88C2	87C2	7	7	25
8											8		
9											9		
10										80C2	10	1	
11					81C2						11	1	26
12N											12N		
1P											1P		
2											2		
3											3		
4											4		
5			C281	C282			C288	C286	C287	C289	5	6	32
6											6		
7											7		
8											8		
9											9		
10	C281	C281	C281	C281							10	4	35
11	C282										11	1	

**A MALFUNCTION**

MALFUNCTION

- \* 1 Monitor Out of Service
- \* 2 Burner Problem
- \* 3 Control Problem
- \* 4 Other

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- 2 Shut-Down

**C LOAD CHANGE/SOOT-BLOWING**

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Use the comment column where additional explanation is appropriate.

Document chart lab will provide reason codes

**CONTINUOUS EMISSIONS MONITORING REPORT  
FLORIDA POWER AND LIGHT  
SANFORD PLANT  
UNIT FOUR  
OPACITY MONITOR  
ORIMULSION TEST BURN PROJECT  
MARCH 25-31, 1991**

**DATA COMPILED BY  
SPECTRUM SYSTEMS INC.  
PENSACOLA, FL**

**SECTION 1**  
**SIX MINUTE OPACITY AVERAGES**

The following data was compiled from a copy of the original strip chart recordings provided to Spectrum Systems Inc. by Florida Power and Light for unit four at the Sanford Plant. Hourly averages were obtained by taking the sum of the valid six minute averages and dividing by the number of valid averages. This gives a real average based on known good minutes. The squares on the data table that are blacked in are the six minute averages that were deemed invalid due to calibrations happening, or any reason causing the integrated output from the opacity monitor to go to zero while the unit is on-line.

Opacity Monitors Six Minute Averages, March 25, 1991.

SIX MINUTE PERIOD	:00-:06	:06-:12	:12-:18	:18-:24	:24-:30	:30-:36	:36-:42	:42-:48	:48-:54	:54-:60	
HOUR OF DAY											HOUR AVERAGE
12: A.M.	62.2	64.5	66	66	65	66		62	60	58.5	63.36
1: A.M.	59.2	67	69.5	83.2	83	68.2	74	73	69.5	66	71.26
2: A.M.	65	59	65	71.2	75	72	66.4	60	60	59	65.26
3: A.M.	59	59	59	60	61	58	58	58	58	57.6	58.76
4: A.M.	57.4	57.2	57	57	57	57.2	57.2	57	57	57	57.10
5: A.M.	57	57	57	57	57	57	57	57	57	57	57.00
6: A.M.	57	57	57		45	56.5	56.5	57	57	57	55.56
7: A.M.	57	57	58	58	62	64	65.2	63.5	79	78	64.17
8: A.M.	64	58	58	65	63.2	70	65.2	63.5	61	60	62.79
9: A.M.	60	63.2	63.5	62	60.7	67.7	70	69	73	64.5	65.36
10: A.M.	77	76.5	64.5	65	84	65	81	71	73	61	71.80
11: A.M.	60.5	60.6	60.4	60	60	60	59.8	59.8	59.8	59	59.99
12: NOON	59	59	59	59	59	58	58	57	56	53	57.70
1: P.M.	52	48.5	49	48	48	49.5	51	49.6	49.5	49.5	49.46
2: P.M.	50	50.8	50		39.5	46.5	46		46	46	46.85
3: P.M.	46	46	46	46	46	45.8	45.8	46	46	46.2	45.98
4: P.M.	45	45.2	44.8	45	46	45	45	45	44.2	44.5	44.97
5: P.M.	44.5	44.5	44.2	44.2	44.2	44.5	44.2	45	44	44	44.33
6: P.M.	44	44	44	44	44	46	46	46	56	76	49.00
7: P.M.	87.5	86	83.5	81	69	74	80	69	86	72	78.80
8: P.M.	65	56	55	56	72	70	68.5	68	68	77	65.55
9: P.M.	63	68.5	79	77	72	84.5	82.5	74	70	48	71.85
10: P.M.	52.5	59	62		46	55.5	63.2	70	60	65	59.24
11: P.M.	60	60	54.5	54.5	54	58.4	59	60	59.6	60	58.00

Blackened squares indicate invalid or no data obtained for that time period.



Opacity Monitors Six Minute Averages, March 26, 1991.

SIX MINUTE PERIOD	:00-:06	:06-:12	:12-:18	:18-:24	:24-:30	:30-:36	:36-:42	:42-:48	:48-:54	:54-:60	
HOUR OF DAY											HOUR AVERAGE
12: A.M.	60	67	61	65	72	71	67	73.5	72	70.5	67.90
1: A.M.	70	66	62	66	63	62.5	62	61	61.5		63.78
2: A.M.	47	68	68.5	68	66	66	65.5	64.5	64	63	64.05
3: A.M.	67	70	69.5	71	73	72	67	72	78	73	71.25
4: A.M.	74.5	67	62	64	60.5	59.5	59	61	65	65.5	63.80
5: A.M.	64.5	63	63.5	63	63	64	64.5	63.5	68	70	64.70
6: A.M.	69	69	69	71		56	66	70	68	64	66.89
7: A.M.	61	60.5	60.5	61	62	62	61	60	59	58.5	60.55
8: A.M.	57	58	60	59	59	59	59	59	59	59	58.80
9: A.M.	59.5	60	59	59	59	59	59	59	59	59	59.15
10: A.M.	59	59	59	60	59	59	59	59	59	59	59.10
11: A.M.	59	59	60	59	59	59	59	59	59	59	59.10
12: NOON	59	59	59	58.8	59.2	59	58.5	58.5	58.5	58.5	58.80
1: P.M.	58.5	58.5	58.5	59	58.5	58.5	58.5	58.5	58.5	59	58.60
2: P.M.	59	59	59	59		47	58	58	58	58.5	57.28
3: P.M.	58.5	59	58.5	58.3	58.5	58	58.5	58.5	58.5	58.5	58.48
4: P.M.	58.5	58.5	58.5	59	58.2	58.2	58	58	59	61	58.69
5: P.M.	59	59	59	58.5	58	58.2	58.2	58.2	58.5	60	58.66
6: P.M.	66.5	68	67	66	67	63	67	68.5	70.5	66	66.95
7: P.M.	61.5	60	60	64	69	61	60.5	69	72	78	65.50
8: P.M.	77.5	68.5	85	84	82	89	91.5	81.5	80	63	80.20
9: P.M.	62	83	78	74	72	62	62.5	63	61.5	62	68.00
10: P.M.	64	63.5	62		49.5	61	59	58	57	59	59.22
11: P.M.	61	61	58	61	63	73	62	60	62	62	62.30

Blackened squares indicate invalid or no data obtained for that time period.

Opacity Monitors Six Minute Averages, March 27, 1991.

SIX MINUTE PERIOD	:00-:06	:06-:12	:12-18	:18-:24	:24-:30	:30-:36	:36-:42	:42-:48	:48-:54	:54-:60	
HOUR OF DAY											HOUR AVERAGE
12: A.M.	62	62	62	59	59	61	62	62	62	62	61.30
1: A.M.	62	62.5	63.5	63.5	63	63		60	63.5	63	62.67
2: A.M.	63	63	63.5	64	64	65	65	66	64	64	64.15
3: A.M.	66	72	64	63	70	74	79	76	81	81	72.60
4: A.M.	81	79	84	84	83	70	62	62	62	62	72.90
5: A.M.	62	62.5	63	63	62	62	63	63.5	68	66	63.50
6: A.M.	68.5	68.5	76		51	66	72	79	79	85	71.67
7: A.M.	91	73.5	70.5	81	76	72	67	66	64	64.5	72.55
8: A.M.	64.5	65	64.2	65	64.5	62	62	60.5	60.5	60	62.82
9: A.M.	60	60	60	60	60	60	59.5	58.5	58	58.5	59.45
10: A.M.											
11: A.M.								63	62	62	62.33
12: NOON	62	62	62	62	62	62	62.5	62	62	62	62.05
1: P.M.	61.5	61.5	61.5	62	61	61	60	61	63	62	61.45
2: P.M.	62	61.5	61	61	61	60.5	60.8	61	61	61	61.08
3: P.M.	61	61	62	61	61	61	61	61	61	71	62.10
4: P.M.	80	79.5	70	75.5	64	61	74	71	76.5	69.5	72.10
5: P.M.	76	65	62.5	78	68	86.5	71	65	63	61.5	69.65
6: P.M.	62	72.5	63	61	64.5	69	81	77	76	82	70.80
7: P.M.	86	84.5	81		81.5	69	62.5	64.5	64	64	73.00
8: P.M.	65	65	62	62	62	61	63	64	65	64.5	63.35
9: P.M.	63	62.2	62	62	64	64	60.5	68	66	70	64.17
10: P.M.	68.5	66	72	70	65	78	76	72	73	57	69.75
11: P.M.	55	56	56	55.5	55	54	53	54	54	54.5	54.70

Blackened squares indicate invalid or no data obtained for that time period.

Opacity Monitors Six Minute Averages, March 28, 1991.

SIX MINUTE PERIOD	:00--06	:06--12	:12--18	:18--24	:24--30	:30--36	:36--42	:42--48	:48--54	:54--60	
HOUR OF DAY											HOUR AVERAGE
12: A.M.	64.5	56	56	53.8	53.5	53	58	57.5		53	56.14
1: A.M.	62	69	67	65	72	72	69.5	76	74.5	73	70.00
2: A.M.	65	54.5	55	56		33	56	55	54.5	56	53.89
3: A.M.	56	57	56		55	54.5	56	59.5	56	56	56.22
4: A.M.	58.5	63	69	65	68	71.5	69	77	74	72	68.70
5: A.M.	73	58	56	58.5	58.5	61	68	84.5	72	63	65.25
6: A.M.	65.5	66	68	68.5	70	76	89	78	72.5	69	72.25
7: A.M.	65	62	62.5	62.5	57	54	60	58	56	56	59.30
8: A.M.	56	56	56	56.5	57	57.5	57.5	58.5	57.5	59.5	57.20
9: A.M.	60	60	60	60	60	60	60	60	59.5	59.4	59.89
10: A.M.	59	58.5	58	58	57.5	57.5	57.5	57.5	57.5	57.5	57.85
11: A.M.	57	57	56.5		56	56	55.5	55	55	55	55.89
12: NOON	56	57	56	56	56	56	55	56	56	56.5	56.05
1: P.M.	57	57	57	57	54.5	54	54	54	54	55	55.35
2: P.M.	53.5	53.5	53.5	52.5	52.5	52	51.5	51.5	59	81	56.05
3: P.M.	79	75	69	56	60	67	74	64	68.5	64	67.65
4: P.M.	64	72	75	77	64	57	55	52	62	63	64.10
5: P.M.	58	52	62	66.5	73	73	77	74	78	98	71.15
6: P.M.	80	94	69	82	88	75	62	62	65	65	74.20
7: P.M.	78.5	73.5	65		66	64	63.5	59.5	56	55	64.56
8: P.M.	54	66	77	61	60	70	81.2	92.5	64	63	68.87
9: P.M.	69.5	70	74	64	82	86	81	80.5	86	74	76.70
10: P.M.	66.5	66	78	84	73.5	70.5	69	70	70.5	69	71.70
11: P.M.	69	70.5	71	74	80	78	79	70	66.5	66	72.40

Blackened squares indicate invalid or no data obtained for that time period.

Opacity Monitors Six Minute Averages, March 29, 1991.

SIX MINUTE PERIOD	:00-:06	:06-:12	:12-:18	:18-:24	:24-:30	:30-:36	:36-:42	:42-:48	:48-:54	:54-:60	
HOUR OF DAY											HOUR AVERAGE
12: A.M.	66		57.5	66	66	66	66	66	65	66	64.94
1: A.M.	66	71	66	65	71	76	83	78.5	81	84	74.15
2: A.M.	84.5	80	83	88.5	91.5	74	85	72	66	66	79.05
3: A.M.	66	67	67.5		69.5	69	70	68.5	68	68	68.17
4: A.M.	67	67.2	67.2	67.2	66	66.5	66.5	68	68	69	67.26
5: A.M.	68	68	67.5	67.5	70	77	79	73	75.5	81	72.65
6: A.M.	89.5	87	82	81.5	81	79	74	84	82	78.5	81.85
7: A.M.	77	65	66	68	74.2	72	69	72	67	67	69.72
8: A.M.	66	67	67	62	63.5	66	63	67.5	64	62.5	64.85
9: A.M.	62.5	62.5	64	63	65	63	68	62	65	70	64.50
10: A.M.	67	66	72.5	75	73	72.5	83.5	83	78	77	74.75
11: A.M.	66.2	70	74		73.5	71	66.2	66	66	66	68.77
12: NOON	66	66	66	66	66	66	66.5	66	66	66	66.05
1: P.M.	65.5	65.5	65.5	65.6	66	65	65	65	66	66	65.51
2: P.M.	68	74	73	73	68	68	69	71.5	76	73	71.35
3: P.M.	74	76.5	78	76	76	81.5	83	80	76	68.5	76.95
4: P.M.	72	70	67	67	66.5	67	66	66	66	66	67.35
5: P.M.	66	66	66	66	66	65	67	65	67.5	70	66.45
6: P.M.	62	63	92	69	89.5	71	72	71	67	68	72.45
7: P.M.	78	77	71		62	61	77	69	81	69	71.67
8: P.M.	76	75	76	85	71	68	82	81	70.2	79	76.32
9: P.M.	71	81	70	68	65	64	66	69	66	68	68.80
10: P.M.	73.5	65.5	64	71.5	75	78.5	78	86	88	82	76.20
11: P.M.	81.5	87	85	86	84	70	64		64	66	76.39

Blackened squares indicate invalid or no data obtained for that time period.

Opacity Monitors Six Minute Averages, March 30, 1991.

SIX MINUTE PERIOD	:00-.06	:06-.12	:12-18	:18-.24	:24-.30	:30-.36	:36-.42	:42-48	:48-.54	:54-.60	
HOUR OF DAY											HOUR AVERAGE
12: A.M.	65	68	68	68	64.5	64.5	64	64	64	63	65.30
1: A.M.	65.5	64	66	65	65	64	63	63	68	67	65.05
2: A.M.	70	66	63	65	72	78	68	72	79	82.5	71.55
3: A.M.	79	78	82		83	82	71	64	66.5	65	74.50
4: A.M.	65	64.6	66	66	66	66	65	66	66	66	65.66
5: A.M.	65	64	64	64.5	65	69.5	71	71	68	66	66.80
6: A.M.	65	65.5	68.5	68.5	70	66	65	69	73	77	68.75
7: A.M.	74	78	81	79	79	82	83	83	82.5	72	79.35
8: A.M.	68	66.5	65.5	66	66	66	66	66.5	66	66	66.25
9: A.M.	66	67	65	64.5	65.5	65	66.5	66	66	65	65.65
10: A.M.	66	69	72	74	88	84	77	69.5	69.5	66.5	73.55
11: A.M.	66.5	67	67		69.5	69	82	69	71	72	70.33
12: NOON	71	70	70.5	81	84.5	74.5	66.5	63.5	64	63.5	70.90
1: P.M.	64	64	64	64	64	64	64	64	64	64	64.00
2: P.M.	64	63	64	63	63	63	63	63	63	63	63.20
3: P.M.	63	63	63	63	63	62.5	62	62	62	62	62.55
4: P.M.	62	70	71	82.5	69	80	69	74	71	87	73.55
5: P.M.	78	70	63	60	58.5	99.5	100	100	100	100	82.90
6: P.M.	92	100	100	100	100	100		87	92	82	94.78
7: P.M.	72	83	81.5		81	91	93	93	100	90	87.17
8: P.M.	80	70	69	74	87	86	79	80	80	76	78.10
9: P.M.	70	70.5	75	75	84	89	86	80.5	72	72	77.40
10: P.M.	73	76	72.5	72	77	80	83	87	78	73	77.15
11: P.M.	73	74	73.5	73.5	73	69.5	68	68	66.5	66	70.50

Blackened squares indicate invalid or no data obtained for that time period.

Opacity Monitors Six Minute Averages, March 31, 1991.

SIX MINUTE PERIOD	.00-.06	.06-.12	.12-18	.18-.24	.24-.30	.30-.36	.36-.42	.42-.48	.48-.54	.54-.60	
HOUR OF DAY											HOUR AVERAGE
12: A.M.	66	66	66	70		73	89	89.5	90	92	77.94
1: A.M.	91	97	82	71	70	79	80.2	74	79.8	74	79.80
2: A.M.	72	66	66	66	70	76	76	70	67	66	69.50
3: A.M.	65	64	64		63	63	65	65	68	64	64.56
4: A.M.	63	65.5	70.2	80.5	79.5	83	82	83	81	82	76.97
5: A.M.	82.5	82.5	82	76	74	82	82	78.5	71	77	78.75
6: A.M.	77	74	74	80.5	79	78	81	75	81	78.5	77.80
7: A.M.	85	80	80	82	78	77.5	79	86	88	87	82.25
8: A.M.	79	69	69	69	69	69	69.5	69	69	69	70.05
9: A.M.	72	75	78	76	74	71	73	77	73	75	74.40
10: A.M.	73	72.5	70	70	70	69	69	70	72.5	80	71.60
11: A.M.	72	76	76		81	79	78	73	66	66	74.11
12: NOON	68	69	74	72	71	72	70	68	67.5	67	69.85
1: P.M.	68	72.4	76	76	74.5	67.5	66	65.5	66.5	65.5	69.79
2: P.M.	66	65	66.5	68.5	72.5	73	70.5	68	64.5	65	67.95
3: P.M.	65	67	69.5	75	69	74	69	68	65	68	68.95
4: P.M.	68	70	74	66.5	66.5	74	77.5	77	66	66	70.55
5: P.M.	72.5	70	80.5	82	77	79.5	88	86	87	89	81.15
6: P.M.	78	72.5	72.5	78	75	76	75.5	73.5	71	70	74.20
7: P.M.	70	69	68		67.5	68.5	68	69	70	73	69.22
8: P.M.	76	76	74	71	69	68	68	68	70	72	71.20
9: P.M.	68	68	71.5	73.5	77	74	77	77.5	78	79	74.35
10: P.M.	81	80.5	81.5	81	72	69	69	70	72	75	75.10
11: P.M.	82	75.5	78	76		71.6	71.5	71.5	72.5	76	74.96

Blackened squares indicate invalid or no data obtained for that time period.



Inter-Office Correspondence

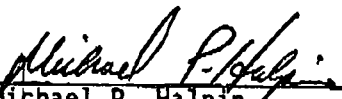
To: M.A. Smith Date: April 4, 1991  
From: M.P. Halpin Department: Sanford Plant  
Subject: ORIMULSION AIR  
OPERATING PERMIT

This is the fifth 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 on one relationship between opacity and each of the fuel constituents.

This most recent analysis focused on the following fuel parameters: ash, water, sulfur, vanadium, magnesium, hydrogen and carbon. Through the use of multiple regression with each of the above variables treated as independent and opacity as the dependent variable, the magnesium constituent was the only parameter which exhibited a strong correlation to opacity.

We now plan to discuss our findings with the fuel supplier to determine how much control they have over the magnesium quantity and what opportunities might exist for adjusting it as an aid to opacity minimization.

  
\_\_\_\_\_  
Michael P. Halpin  
Operations Superintendent  
Sanford Plant

MPH/dd

cc: PSN File C-29