



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

FEDERAL EXPRESS

RECEIVED

MAR 22 1991

DER-BAQM

March 21, 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 11-17, 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 11-17, 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

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 cursive script that reads "Elsa A. Bishop".

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

March 21, 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 11-17, 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 11-17, 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

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 cursive script that reads "Elsa A. Bishop".

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 03/17/91

ORIMULSION
HEAT VALUE 4.519 MMBTU/BBL

#6 OIL
HEAT VALUE 6.322 MMBTU/BBL

DAY	DATE	ORIMULSION BURNED BBLs	FULL POWER BURN DAYS	#6 OIL BURNED BBLs
MONDAY	03/11/91	17130	0.7964	0
TUESDAY	03/12/91	17870	0.8308	0
WEDNESDAY	03/13/91	14618	0.6796	0
THURSDAY	03/14/91	0	0.0000	0
FRIDAY	03/15/91	0	0.0000	0
SATURDAY	03/16/91	0	0.0000	0
SUNDAY	03/17/91	0	0.0000	0
TOTALS		49618	2.3068	0

Temporary 80% thru 5/31/91

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

UNIT NO. **MON** **MAR 7 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											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											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

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.

Document chart lab will provide reason codes

Temporary 80% thru 5/31/91

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

UNIT NO. 4 (CRIMMISON) DATE 3-16-91

Time	SIX MINUTE INTERVALS > 80%										SIX MINUTE INTERVALS > 80%	
	1	2	3	4	5	6	7	8	9	10	THIS HOUR	LAST 24 HRS
12MN											12MN	
1AM											1AM	
2											2	
3											3	
4											4	
5											5	
6											6	
7											7	
8											8	
9											9	
10											10	
											11	
12N											12N	
1P											1P	
2											2	
3											3	
4											4	
5											5	
6											6	
7											7	
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

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.

TEMPORARY 80% thru 5/31/91

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

UNIT NO. 4 (OPIMVLSAN)	DATE 3-15-91
---------------------------	-----------------

Time	SIX MINUTE INTERVALS > 80%										SIX MINUTE INTERVALS > 80%	
	1	2	3	4	5	6	7	8	9	10	This Hour	Last 24 Hrs
12MN											12MN	T
1AM											1AM	
2											2	
3											3	
4											4	
5											5	
6											6	
7											7	
8											8	
9											9	
10											10	
											11	
12N											12N	
1P											1P	
2											2	
3											3	
4											4	
5											5	
6											6	
7											7	
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

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.

TEMPORARY 80% thru 5/31/91

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

UNIT NO. 4 <small>(OR NUMBER)</small>	DATE 3-14-91
--	------------------------

Time	SIX MINUTE INTERVALS > 80%										SIX MINUTE INTERVALS > 80%	
	1	2	3	4	5	6	7	8	9	10	THIS HOUR	LAST HOUR
12MN											12MN	
1AM											1AM	
2											2	
3											3	
4											4	
5											5	
6											6	
7											7	
8											8	
9											9	
10											10	
											11	
12N											12N	
1P											1P	
2											2	
3											3	
4											4	
5											5	
6											6	
7											7	
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

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.

Temporary 80% thru 5/31/91

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

WED MAR 13 1991

UNIT NO.	DATE
4 (80% Orimulsion)	

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									80-2		7	1	
8											8		
9											9		
10											10		
11											11		
12N											12N		
1P											1P		
2											2		
3											3		
4											4		
5						84-C4	88-C4	84-C4			5	3	4
6									82-C2		6	1	5
7						93-C2					7	1	6
8									86-C2		8	2	8
9	88-C2										9	1	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

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

Document chart lab will provide reason codes

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) TUE MAR 12 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											1AM		
2											2		
3											3		
4											4		
5											5		
6											6		
7											7		
8											8		
9				87% ¹	82% ²						9	2	2
10											10		
11											11		
12N											12N		
1P											1P		
2											2		
3											3		
4									95% ²	81% ²	4	2	4
5	81% ²							81% ²	92% ²	89% ²	5	4	8
6	82% ²		84% ²				88% ²		92% ²		6	4	12
7	85% ²	88% ²									7	2	14
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
 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.

Document chart lab will provide reason codes

Temporary 80% thru 5/31/91

MON MAR 19 1991

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

UNIT NO.	DATE
4 (80% Opimulsion)	

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			C-2 ⁸¹								10	1
11											11	
12N											12N	
1P											1P	
2											2	
3										810-2	3	1
4	820-2					820-2		820-2	820-2		4	4
5		800-2			860-2	820-2					5	3
6											6	
7											7	
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
 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.

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 11-17, 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 Monitor Six Minute Averages, March 11, 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.	68	67	59.5	58	53	50	54	56		64	58.83
1: A.M.	63.5	63.5	58	55	55.2	60.8	59	60	63.2	59	59.72
2: A.M.	65	66	64	72	68.5	66	68.8	56	56	59	64.13
3: A.M.	65	70	71.5	68	62	62	71.8	72	69	69	68.03
4: A.M.	66	60	60	60	58	58	60	63.2	66		61.24
5: A.M.		43	77	68	61	60	59	60	66	72	62.89
6: A.M.	70	63.8	64	70.5	61.5	58.5	58.5	63.2	62	60.8	63.28
7: A.M.	60	60.2	60.2	58	55	56	56	59	68	57.5	58.99
8: A.M.	58	59.5	60	59	64.5	65	64	64.8	57.5	60	61.23
9: A.M.		60	64	60	57	57	59	63	68	64	61.33
10: A.M.	68	68	69	80.2	69	65	73	58	54	54	65.82
11: A.M.	50	49	47	52	50	53	52	48.2	49.5	57.5	50.82
12: NOON	52	49	50	56	58	60	63.5	62	65		57.28
1: P.M.	64	73	66.2	62.5	66	53	52	52	53	53	59.47
2: P.M.	54.2	53.4	53.5	53.4	54	58	61.8	62	58	55	56.33
3: P.M.	55	54	55	55	54	55	54.2	56.2	60	74	57.24
4: P.M.	81	82	78	75	70	79	81	78	82	82	78.80
5: P.M.		76.2	79	76	79	86	82	78	76.2	65	77.49
6: P.M.	65	64	64	64	63	64	64.5	70.5	72	78	66.90
7: P.M.	71.5	64	68	72	67.2	76	68	64	61.5	67	67.92
8: P.M.	65	65	67.5	60.6	63	70.5	76	73	69.2	74	68.38
9: P.M.	63	62.8	68	70	63	59	59	63.5	64	69	64.13
10: P.M.	72	69	69	65	58.5	56.5	56.5	57	60	62	62.55
11: P.M.	64	62	48			53.5	56	58	64.5	60.5	58.31

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

Opacity Monitor Six Minute Averages, March 12, 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	66	73	68	66	69	56.5		53	64.56
1: A.M.	53	53	53	53	53	53	53	53	53	53	53.00
2: A.M.	53	53	55	61.5	67	70	68	63	58	67	61.55
3: A.M.		63	68	65	60	56	59	56	56	55	59.78
4: A.M.	55.2	55	55	54.5	54.5	56	57	56	54.5	55	55.27
5: A.M.	55	54.8	54	54	54	54.2	57.2	59.2	60.5	62.5	56.54
6: A.M.	64	66	66	67	67.5	67.5	67	67.2	67	61	66.02
7: A.M.	60	58	57	56	63	64	66	68	57	56	60.50
8: A.M.	60	62.5	72	74.2	70	71	71	65.6		68	68.26
9: A.M.	61	67.5	78	81	82	71	59	56	54.5	53.5	66.35
10: A.M.	53	52	51	52	52	51.5	51.5	51	50	52	51.60
11: A.M.	54	54	51	51.2	51	51	51	54	56.2	57	53.04
12: NOON	57.2	58	58	58.5	58.5	59	59	59	59	59	58.52
1: P.M.	59	59	59	59	60	59	59	59	59	66.5	59.85
2: P.M.	74	78									76.00
3: P.M.				58	58	58	58	58	58	58	58.00
4: P.M.	66.5	66	66.2	65.8	67.5	62	78	75.6	95	81	72.36
5: P.M.	81.5	79	72		72	64.6	69	80.5	92	89.5	77.79
6: P.M.	82	72	84	72	68.6	72.8	88	69	92	70	77.04
7: P.M.	85	88	74	65	66	73.8	69	62	61	60	70.38
8: P.M.	60	61.2	64	74	76.8	78	68.8	60	60.2	61.5	66.45
9: P.M.	64	78	79	74	67	60	62.5	64	74	62	68.45
10: P.M.	66	68	70.4	77		66.8	72	56	53.5	55	64.97
11: P.M.	58.5	62	74	74	69	71.5	70	64	63.5	61	66.75

2:12 p.m. - 3:18 p.m. Instrument calibration P.M. check

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

Opacity Monitor Six Minute Averages, March 13, 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	67.5	75	79.5	74.5	62	58.2	58	58	58	65.27
1: A.M.	58	57.2	54.6	57	63	59	55.5	58	64	60	58.63
2: A.M.	70	72	70	74.5	77	76	76.6	74.4	65	57	71.25
3: A.M.	70	70	70.6	75	71.2	68	61	67.2	76	66	69.50
4: A.M.	72.5	68	64	58	59	59.5	56	56	56	56	60.50
5: A.M.	58	58	57.5	59.5	59.8	59	60	61	60	61	59.38
6: A.M.		64	64	61.5	63		64.5	65	61.5	56	62.44
7: A.M.	57	64.6	63	65	70	67	69	70	75	80	68.06
8: A.M.	74	72	74	64	61	64	79	56	58	62	66.40
9: A.M.	62	62	60	60	60	58	58	58	57	57	59.20
10: A.M.	56	56	56	55.5	55.5	54.5	57.5	60	54	55	56.00
11: A.M.	53	54	54	52	52	52	52	59	64	62	55.40
12: NOON	60	67.5	66	66	70	65	67	67	57	56	64.15
1: P.M.	55.5	55	55	55	55	54	54	54	54	54	54.55
2: P.M.	54	54	54	54			53.5	53.2	53.2	53.2	53.64
3: P.M.	53.2	53.2	53	53	53	53	53	53	54	54	53.24
4: P.M.	54	54	54	54	54	54	54	54.1	54	53	53.91
5: P.M.	53	52	52	56	72	84	88	84	71	66	67.80
6: P.M.	76	78	71	76	72	64	62.5	78	77.8	81.4	73.67
7: P.M.	78	73	59.5	74	62	92.5	68	65.5	62	64	69.85
8: P.M.	61	80	66	54	52	66	76	71.5	72.4	86	68.49
9: P.M.	87	64	38.5	60	75.2	29	28.4	44.5	31	14	47.16
10: P.M.	17	10	8	17		39.5	21	18	16	16	18.06
11: P.M.	16	16.2	16	15	14	14	13	12	11	11	13.82

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

Opacity Monitor Six Minute Averages, March 14, 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.	11	10	10	10	9.5	10	8	0	0		7.61
1: A.M.	Unit	Off	Line								
2: A.M.	No	Fire	in	Boiler							
3: A.M.	Chart	Recorder									
4: A.M.	Turned	Off									
5: A.M.											
6: A.M.											
7: A.M.	Unit	Off	Line								
8: A.M.	No	Fire	in	Boiler							
9: A.M.	Chart	Recorder									
10: A.M.	Turned	Off									
11: A.M.											
12: NOON											
1: P.M.	Unit	Off	Line								
2: P.M.	No	Fire	in	Boiler							
3: P.M.	Chart	Recorder									
4: P.M.	Turned	Off									
5: P.M.											
6: P.M.											
7: P.M.	Unit	Off	Line								
8: P.M.	No	Fire	in	Boiler							
9: P.M.	Chart	Recorder									
10: P.M.	Turned	Off									
11: P.M.											

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

Opacity Monitor Six Minute Averages, March 15, 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.											
1: A.M.	Unit	Off	Line								
2: A.M.	No	Fire	in	Boiler							
3: A.M.	Chart	Recorder									
4: A.M.	Turned	Off									
5: A.M.											
6: A.M.											
7: A.M.	Unit	Off	Line								
8: A.M.	No	Fire	in	Boiler							
9: A.M.	Chart	Recorder									
10: A.M.	Turned	Off									
11: A.M.											
12: NOON											
1: P.M.	Unit	Off	Line								
2: P.M.	No	Fire	in	Boiler							
3: P.M.	Chart	Recorder									
4: P.M.	Turned	Off									
5: P.M.											
6: P.M.											
7: P.M.											
8: P.M.											
9: P.M.				1	1	1	1	1	1	1	1.00
10: P.M.	1	1	1	1		1	1	1	1	1	1.00
11: P.M.	1	1	1	1	1	1	1	1	1	1	1.00

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

Opacity Monitor Six Minute Averages, March 16, 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.	1	1	1	1	1	1	1.2	1.2	1.5	1.5	1.14
1: A.M.	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.50
2: A.M.	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.50
3: A.M.	1.5	1.5	1.5	0.5	0.5		0.2	0.4	0.4	1	0.83
4: A.M.	1	1	1	1	1	1	1	1	1	1	1.00
5: A.M.	1	1	1	1	1	1	1	1	1	1	1.00
6: A.M.	1	1	1	1		1	1	1	1	1	1.00
7: A.M.	1	1	1	1	1	1	1	1	1	1	1.00
8: A.M.	1	1	1	1	1	1.2	2	2	1.6	1.6	1.34
9: A.M.	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.60
10: A.M.	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.60
11: A.M.	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.50
12: NOON	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.50
1: P.M.	1.5	1.5	1.5	1.5	1.7	2	2.8	2	2	2	1.85
2: P.M.	2	2	2	2		1.5	1.5	1.5	1.5	1.5	1.72
3: P.M.	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.50
4: P.M.	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.80
5: P.M.	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.80
6: P.M.	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.80
7: P.M.	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.70
8: P.M.	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.50
9: P.M.	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.50
10: P.M.	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.50
11: P.M.	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.40

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

Opacity Monitor Six Minute Averages, March 17, 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.	1	1	1	1	1	1	1	1	1	1	1.00
1: A.M.	1	1	1	1	1	1	1	1	1	1	1.00
2: A.M.	1	1	1	1	1	1	1	1	1	1	1.00
3: A.M.	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.40
4: A.M.	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.40
5: A.M.	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.40
6: A.M.	1.4	1.4	1.4	1.4		1.4	1.4	1.4	1.4	1.4	1.40
7: A.M.	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.40
8: A.M.	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.40
9: A.M.	1.4	1.4	1.4	1.4	1.4	1.2	1.2	1.2	1.2	1.2	1.30
10: A.M.	1.2	1.2	1.2	1.3	1.4	1.4	1.6	1.7	1.8	1.9	1.47
11: A.M.	2	2	2	2	2	2	1.9	1.9	1.8	1.8	1.94
12: NOON	1.8	1.8	1.7	1.7	1.7	1.6	1.6	1.5	1.5	1.5	1.64
1: P.M.	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.40
2: P.M.	1.4	1.4	1.4	1.4	1.4		1.4	1.4	1.4	1.4	1.40
3: P.M.	1	1	1	1	1	1	1	1	1	1	1.00
4: P.M.	1	1	1	1	1	1	1.2	1.3	1.4	1.5	1.14
5: P.M.	2	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.82
6: P.M.	1.8	1.8	1.8	2	2	2	2	2	2	2	1.94
7: P.M.	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.80
8: P.M.	1.8	1.8	1.8	1.8	2	2		0.8	1	1	1.56
9: P.M.	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.20
10: P.M.	1.2	1.2	1.2	1.2		1	1	1	1	1	1.09
11: P.M.	1	1	1	1	1	1	1	1	1	1	1.00

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



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