

VIRGINIA ELECTRIC AND POWER COMPANY  
RICHMOND, VIRGINIA 23261

April 13, 2004

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D.C. 20555-0001

Serial No. 04-207  
SPS Lic/JSA R0  
Docket Nos. 50-280  
50-281  
License Nos. DPR-32  
DPR-37

Gentlemen:

**VIRGINIA ELECTRIC AND POWER COMPANY**  
**SURRY POWER STATION UNITS 1 AND 2**  
**MONTHLY OPERATING REPORT**

The Monthly Operating Report for Surry Power Station Units 1 and 2 for the month of March 2004 is provided in the attachment.

If you have any questions or require additional information, please contact us.

Very truly yours,



Richard H. Blount,  
Site Vice President  
Surry Power Station

Attachment

Commitments made by this letter: None

cc: United States Nuclear Regulatory Commission  
Region II  
Sam Nunn Atlanta Federal Center  
61 Forsyth Street, SW, Suite 23 T85  
Atlanta, Georgia 30303-8931

Mr. G. J. McCoy  
NRC Senior Resident Inspector  
Surry Power Station

IE24

**VIRGINIA ELECTRIC AND POWER COMPANY  
SURRY POWER STATION  
MONTHLY OPERATING REPORT  
REPORT No. 04-03**

Approved:

Mike Guffey for  
Site Vice President

4/13/04  
Date

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# OPERATING DATA REPORT

Docket No.: 50-280  
Date: 04/01/04  
Completed By: R. Stief  
Telephone: (757) 365-2486

1. Unit Name: ..... Surry Unit 1
  2. Reporting Period:..... March 2004
  3. Licensed Thermal Power (MWt):..... 2546
  4. Nameplate Rating (Gross MWe): ..... 847.5
  5. Design Electrical Rating (Net MWe): ..... 788
  6. Maximum Dependable Capacity (Gross MWe):... 842
  7. Maximum Dependable Capacity (Net MWe):..... 810
  8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
  9. Power Level To Which Restricted, If Any (Net MWe): \_\_\_\_\_
  10. Reasons For Restrictions, If Any: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- |   | <u>This Month</u> | <u>Year-To-Date</u> | <u>Cumulative</u> |
|---|-------------------|---------------------|-------------------|
| 11. Hours in Reporting Period               | 744.00            | 2184.00             | 274152.00         |
| 12. Hours Reactor Was Critical              | 744.00            | 2184.00             | 203587.48         |
| 13. Reactor Reserve Shutdown Hours          | 0.00              | 0.00                | 3774.50           |
| 14. Hours Generator On-Line                 | 744.00            | 2184.00             | 200788.77         |
| 15. Unit Reserve Shutdown Hours             | 0.00              | 0.00                | 3736.20           |
| 16. Gross Thermal Energy Generated (MWH)    | 1851536.70        | 5516249.10          | 479908172.70      |
| 17. Gross Electrical Energy Generated (MWH) | 616715.00         | 1847226.00          | 157986491.00      |
| 18. Net Electrical Energy Generated (MWH)   | 595370.00         | 1783801.00          | 150945901.00      |
| 19. Unit Service Factor                     | 100.00%           | 100.00%             | 73.24%            |
| 20. Unit Availability Factor                | 100.00%           | 100.00%             | 74.60%            |
| 21. Unit Capacity Factor (Using MDC Net)    | 98.79%            | 100.83%             | 70.26%            |
| 22. Unit Capacity Factor (Using DER Net)    | 101.55%           | 103.65%             | 69.87%            |
| 23. Unit Forced Outage Rate                 | 0.00%             | 0.00%               | 11.93%            |
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):  
\_\_\_\_\_  
Type and duration of scheduled shutdowns are no longer provided.  
[Reference: Letter S/N 00-069, dated February 7, 2000]  
\_\_\_\_\_
  25. If Shut Down at End of Report Period, Estimated Date of Start-up: Estimated start-up dates are no longer provided. [Reference: Letter S/N 00-069, dated February 7, 2000]
  26. Unit In Test Status (Prior to Commercial Operation):

	<u>FORECAST</u>	<u>ACHIEVED</u>
INITIAL CRITICALITY	_____	_____
INITIAL ELECTRICITY	_____	_____
COMMERCIAL OPERATION	_____	_____

# OPERATING DATA REPORT

Docket No.: 50-281  
Date: 04/01/04  
Completed By: R. Stief  
Telephone: (757) 365-2486

1. Unit Name: ..... Surry Unit 2
2. Reporting Period:..... March 2004
3. Licensed Thermal Power (MWt):..... 2546
4. Nameplate Rating (Gross MWe):..... 847.5
5. Design Electrical Rating (Net MWe):..... 788
6. Maximum Dependable Capacity (Gross MWe):... 847
7. Maximum Dependable Capacity (Net MWe):..... 815
8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons:

9. Power Level To Which Restricted, If Any (Net MWe): .....
10. Reasons For Restrictions, If Any: .....

	<u>This Month</u>	<u>Year-To-Date</u>	<u>Cumulative</u>
11. Hours in Reporting Period	744.00	2184.00	271033.00
12. Hours Reactor Was Critical	744.00	2184.00	201146.30
13. Reactor Reserve Shutdown Hours	0.00	0.00	328.10
14. Hours Generator On-Line	744.00	2184.00	198630.42
15. Unit Reserve Shutdown Hours	0.00	0.00	0.00
16. Gross Thermal Energy Generated (MWH)	1890032.30	5554072.60	476200416.40
17. Gross Electrical Energy Generated (MWH)	633894.00	1858914.00	156837228.00
18. Net Electrical Energy Generated (MWH)	612584.00	1795672.00	149888508.00
19. Unit Service Factor	100.00%	100.00%	73.29%
20. Unit Availability Factor	100.00%	100.00%	73.29%
21. Unit Capacity Factor (Using MDC Net)	101.03%	100.88%	70.26%
22. Unit Capacity Factor (Using DER Net)	104.49%	104.34%	70.18%
23. Unit Forced Outage Rate	0.0%	0.00%	9.46%

24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):

Type and duration of scheduled shutdowns are no longer provided.

[Reference: Letter S/N 00-069, dated February 7, 2000]

25. If Shut Down at End of Report Period, Estimated Date of Start-up: Estimated start-up dates are no longer provided. [Reference: Letter S/N 00-069, dated February 7, 2000]

26. Unit In Test Status (Prior to Commercial Operation):

	<u>FORECAST</u>	<u>ACHIEVED</u>
INITIAL CRITICALITY	_____	_____
INITIAL ELECTRICITY	_____	_____
COMMERCIAL OPERATION	_____	_____

**UNIT SHUTDOWN AND POWER REDUCTION  
 (EQUAL TO OR GREATER THAN 20%)**

**REPORT MONTH: March 2004**

Docket No.: 50-280  
 Unit Name: Surry Unit 1  
 Date: 04/01/04  
 Completed by: R. Stief  
 Telephone: (757) 365-2486

Date	(1) Type	Duration Hours	(2) Reason	(3) Method of Shutting Down Rx	LER No.	(4) System Code	(5) Component Code	Cause & Corrective Action to Prevent Recurrence
03/01/04	N/A	0	A	4	N/A	JA	LIC	Unit 1 experienced a loss of Secondary Drain Level Control resulting in loss of secondary efficiencies and causing unit load reduction to 65.3%

(1)  
 F: Forced  
 S: Scheduled

(2)  
 REASON:  
 A - Equipment Failure (Explain)  
 B - Maintenance or Test  
 C - Refueling  
 D - Regulatory Restriction  
 E - Operator Training & Licensing Examination  
 F - Administrative  
 G - Operational Error (Explain)  
 H - Other (Explain)

(3)  
 METHOD:  
 1 - Manual  
 2 - Manual Scram  
 3 - Automatic Scram  
 4 - Other (Explain)

(4)  
 Exhibit G - Instructions for Preparation of Data Entry Sheets  
 for Licensee Event Report (LER) File (NUREG 0161)

(5)  
 Exhibit 1 - Same Source

**UNIT SHUTDOWN AND POWER REDUCTION  
(EQUAL TO OR GREATER THAN 20%)**

**REPORT MONTH: March 2004**

Docket No.: 50-281  
Unit Name: Surry Unit 2  
Date: 04/01/04  
Completed by: R. Stief  
Telephone: (757) 365-2486

None during the Reporting Period

---

(1)  
F: Forced  
S: Scheduled

(2)  
REASON:  
A - Equipment Failure (Explain)  
B - Maintenance or Test  
C - Refueling  
D - Regulatory Restriction  
E - Operator Training & Licensing Examination  
F - Administrative  
G - Operational Error (Explain)  
H - Other (Explain)

(3)  
METHOD:  
1 - Manual  
2 - Manual Scram  
3 - Automatic Scram  
4 - Other (Explain)

(4)  
Exhibit G - Instructions for Preparation of Data Entry Sheets  
for Licensee Event Report (LER) File (NUREG 0161)

(5)  
Exhibit 1 - Same Source

**AVERAGE DAILY UNIT POWER LEVEL**

Docket No.: 50-280  
Unit Name: Surry Unit 1  
Date: 04/01/04  
Completed by: R. Stief  
Telephone: (757) 365-2486

MONTH: March 2004

Day	Average Daily Power Level (MWe - Net)	Day	Average Daily Power Level (MWe - Net)
1	804	17	826
2	750	18	826
3	590	19	827
4	506	20	827
5	756	21	827
6	807	22	825
7	817	23	825
8	819	24	826
9	818	25	826
10	818	26	825
11	820	27	826
12	809	28	826
13	824	29	826
14	826	30	826
15	826	31	827
16	826		

**INSTRUCTIONS**

On this format, list the average daily unit power level in MWe - Net for each day in the reporting month. Compute to the nearest whole megawatt.

**AVERAGE DAILY UNIT POWER LEVEL**

Docket No.: 50-281  
Unit Name: Surry Unit 2  
Date: 04/01/04  
Completed by: R. Stief  
Telephone: (757) 365-2486

MONTH: March 2004

Day	Average Daily Power Level (MWe - Net)	Day	Average Daily Power Level (MWe - Net)
1	823	17	822
2	823	18	822
3	823	19	822
4	822	20	822
5	820	21	822
6	825	22	822
7	825	23	821
8	825	24	821
9	824	25	821
10	825	26	824
11	823	27	826
12	823	28	828
13	822	29	827
14	822	30	827
15	822	31	827
16	822		

**INSTRUCTIONS**

On this format, list the average daily unit power level in MWe - Net for each day in the reporting month. Compute to the nearest whole megawatt.

## SUMMARY OF OPERATING EXPERIENCE

MONTH/YEAR: March 2004

The following chronological sequence by unit is a summary of operating experiences for this month that required load reductions or resulted in significant non-load related incidents.

### UNIT ONE:

03/01/04	0000	Unit started the month at 100% / 856 MWe.
03/01/04	1744	Unit power being reduced due to failure of the 1 <sup>st</sup> Point FW Heater High Divert Valves. Unit at 100% / 825 MWe.
03/01/04	1812	Stopped ramp at 94% / 770 MWe.
03/02/04	0047	Commenced ramping unit IAW 1-OP-TM-005 to allow removal of condensate polisher demineralizer 1-CP-DM-1A. Unit at 94% / 770 MWe.
03/02/04	0102	Stopped ramp at 92% / 750 MWe.
03/03/04	0606	While troubleshooting Network 90 problems, unit experienced a loss of HP/LP Heater Drain Pumps (1-SD-P-1A/2A & 2B), automatic bypass of the polisher and auto start of the 3 <sup>rd</sup> Condensate Pump. Initiated AP-23.00 for ramp to 75% to allow restoration of the Condensate Polishing Building. Unit at 92% / 750 MWe.
03/03/04	0646	Stopped ramp at 72.2% / 559 MWe.
03/03/04	2210	Entered AP-14.01 Rapid Main Condenser Waterbox removal, due to 1A waterbox tube rupture.
03/04/04	0018	Commenced ramping unit IAW 1-OP-TM-005 to maintain condenser vacuum. Unit at 73% / 505 MWe.
03/04/04	0100	Stopped ramp at 67% / 455 MWe.
03/04/04	1451	Per logs Reactor Power was increased from 67% / 455 MWe to 72% / 560 MWe to control Tave.
03/05/04	0200	Ramped from 65.3% to 66.1% for temperature control.
03/05/04	0514	Commenced ramp IAW 1-OP-TM-005. Unit at 73% / 590 MWe.
03/05/04	0645	Secured ramp @ 90%.
03/05/04	0745	Commenced ramp to 100%.
03/05/04	0900	Unit at 100% / 850 MWe.
03/06/04	1126	Commenced ramp from 99% in prep for removing moisture separator reheater 1-MS-E-1A/B from service due to suspected flow blockage.
03/06/04	1147	Stopped ramp at 94.5% / 813 MWe.
03/06/04	1341	Commenced ramp to 100%. Unit at 92.1% / 790 MWe.
03/06/04	1400	Ramp stopped at 96.5% / 821 MWe due to deviation between delta T and impulse pressure. Engineering evaluating.
03/06/04	2342	Commenced ramp to 100%. Unit at 97% / 822 MWe.
03/07/04	0110	Stopped ramp at 99.3% to adjust NI's.

03/07/04	0145	Recommended ramp.
03/07/04	0230	Unit at 100% / 849 MWe.
03/12/04	1400	Commenced rampdown in preparation for returning 1-MS-E-1A & 1B to service. Unit at 100% / 847 MWe.
03/12/04	1440	Stopped ramp at 96% / 815 MWe.
03/13/04	0000	Unit at 98% / 835 MWe, 1-MS-E-1A & 1B are being returned to service.
03/13/04	0146	1-MS-MOV's 100A & 100B full open. Unit at 98% / 839 MWe.
03/13/04	0255	Commenced ramp from 98% to 100% IAW 1-OP-TM-005. Unit at 98% / 839 MWe.
03/13/04	0430	Stopped ramp at 100% / 855 MWe.
03/31/04	2400	Unit finished the month at 100% / 854 MWe.

**UNIT TWO:**

03/01/04	0000	Unit started the month at 100% / 852 MWe.
03/31/04	2400	Unit finished the month at 100% / 856 MWe.

**FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL**

**MONTH/YEAR:** March 2004

None during the Reporting Period.

**PROCEDURE OR METHOD OF OPERATION CHANGES  
THAT DID NOT REQUIRE NRC APPROVAL**

**MONTH/YEAR: March 2004**

None during the Reporting Period

**TESTS AND EXPERIMENTS THAT DID NOT REQUIRE NRC APPROVAL**

**MONTH/YEAR:** March 2004

None during the Reporting Period

CHEMISTRY REPORT

MONTH/YEAR: March 2004

Primary Coolant Analysis	Unit No. 1			Unit No. 2		
	Max.	Min.	Avg.	Max.	Min.	Avg.
Gross Radioactivity, $\mu\text{Ci/ml}$	3.86E-1	1.56E-1	2.71E-1	3.56E-1	1.72E-1	2.48E-1
Suspended Solids, ppm	$\leq 0.010$	$\leq 0.010$	$\leq 0.010$	$\leq 0.010$	$\leq 0.010$	$\leq 0.010$
Gross Tritium, $\mu\text{Ci/ml}$	1.03E+0	8.30E-1	9.06E-1	1.14E+0	9.35E-1	1.03E+0
$I^{131}$ , $\mu\text{Ci/ml}$	2.59E-4	8.24E-5	1.54E-4	1.05E-4	6.16E-5	8.42E-5
$I^{131}/I^{133}$	0.11	0.04	0.07	0.37	0.21	0.27
Hydrogen, cc/kg	35	30	31.8	38.7	34.8	37.2
Lithium, ppm	2.32	2.07	2.2	2.34	2.12	2.24
Boron - 10, ppm*	170	137	152	254	242	249
Oxygen, (DO), ppm	$\leq 0.005$	$\leq 0.005$	$\leq 0.005$	$\leq 0.005$	$\leq 0.005$	$\leq 0.005$
Chloride, ppm	0.004	0.003	0.004	0.008	0.007	0.007
pH @ 25 degree Celsius	6.9	6.68	6.79	6.56	6.29	6.44

\* Boron - 10 = Total Boron x 0.196

Comments:

Unit 1: 100% power

Unit 2: 100% power

**FUEL HANDLING  
UNITS 1 & 2**

MONTH/YEAR: March 2004

New Fuel Shipment or Cask No.	Date Stored or Received	Number of Assemblies per Shipment	Assembly Number	ANSI Number	Initial Enrichment	New or Spent Fuel Shipping Cask Activity
Spent Fuel Cask TN-32-39	03/24/04	32	0J2	LM0UY8	3.8072	N/A
			0J5	LM0UYB	3.8068	
			0K1	LM0YK9	3.8179	
			0K2	LM0YKA	3.8144	
			0K3	LM0YKB	3.8189	
			0K4	LM0YKC	3.8182	
			0K5	LM0YKD	3.8190	
			0K6	LM0YKE	3.8208	
			0K7	LM0YKF	3.8184	
			1J4	LM0UYL	3.8081	
			1K0	LM0YKJ	3.8188	
			1W0	LM0X2P	3.8073	
			1W4	LM0X2T	3.8064	
			1W5	LM0X2U	3.8090	
			1W7	LM0X2W	3.8036	
			1W8	LM0X2X	3.8004	
			2E4	LM0DFP	3.5974	
			2E5	LM0DEN	3.6034	

**FUEL HANDLING  
UNITS 1 & 2**

**MONTH/YEAR:** March 2004

New Fuel Shipment or Cask No.	Date Stored or Received	Number of Assemblies per Shipment	Assembly Number	ANSI Number	Initial Enrichment	New or Spent Fuel Shipping Cask Activity
			2J4	LM0UYW	3.8069	
			2J6	LM0UYY	3.8058	
			2J7	LM0UYZ	3.8066	
			2J8	LM0UZ0	3.8144	
			2W2	LM0X31	3.8069	
			3E0	LM0DEX	3.5972	
			3E4	LM0DFF	3.6051	
			4E7	LM0DE9	3.6073	
			4E8	LM0DEV	3.6002	
			4E9	LM0DES	3.6028	
			4J0	LM0UZC	4.0092	
			5E0	LM0DEB	3.5999	
			5R7	LM0C21	3.5902	
			6R0	LM0C2Q	3.5911	

**DESCRIPTION OF PERIODIC TEST(S) WHICH WERE NOT COMPLETED  
WITHIN THE TIME LIMITS SPECIFIED IN TECHNICAL SPECIFICATIONS**

**MONTH/YEAR: March 2004**

None during the Reporting Period