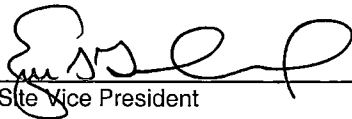


VIRGINIA ELECTRIC AND POWER COMPANY  
SURRY POWER STATION  
MONTHLY OPERATING REPORT  
REPORT NO. 99-03

Approved:

  
\_\_\_\_\_  
Site Vice President

4/12/99  
\_\_\_\_\_  
Date

9904190257 990413  
PDR ADDCK 05000280  
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**OPERATING DATA REPORT**

Docket No.: 50-280  
 Date: 04/01/99  
 Completed By: R. Stief  
 Telephone: (757) 365-2486

- 1. Unit Name: ..... Surry Unit 1
- 2. Reporting Period: ..... March 1999
- 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): ... 840
- 7. Maximum Dependable Capacity (Net MWe): ..... 801

8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons:

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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	744.0	2160.0	230304.0
12. Hours Reactor Was Critical	744.0	2160.0	163476.5
13. Reactor Reserve Shutdown Hours	0.0	0.0	3774.5
14. Hours Generator On-Line	744.0	2160.0	160931.4
15. Unit Reserve Shutdown Hours	0.0	0.0	3736.2
16. Gross Thermal Energy Generated (MWH)	1893613.0	5497465.9	379688423.4
17. Gross Electrical Energy Generated (MWH)	629447.0	1830877.0	124601033.0
18. Net Electrical Energy Generated (MWH)	608218.0	1769724.0	118756328.0
19. Unit Service Factor	100.0%	100.0%	69.9%
20. Unit Availability Factor	100.0%	100.0%	71.5%
21. Unit Capacity Factor (Using MDC Net)	102.1%	102.3%	66.2%
22. Unit Capacity Factor (Using DER Net)	103.7%	104.0%	65.4%
23. Unit Forced Outage Rate	0.0%	0.0%	14.3%

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

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25. If Shut Down at End of Report Period, Estimated Date of Start-up: \_\_\_\_\_

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: 04/01/99  
 Completed By: R. Stief  
 Telephone: (757) 365-2486

- 1. Unit Name: ..... Surry Unit 2
- 2. Reporting Period: ..... March 1999
- 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): ... 840
- 7. Maximum Dependable Capacity (Net MWe): ..... 801

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	744.0	2160.0	227185.0
12. Hours Reactor Was Critical	744.0	2160.0	162070.3
13. Reactor Reserve Shutdown Hours	0.0	0.0	328.1
14. Hours Generator On-Line	744.0	2160.0	160053.5
15. Unit Reserve Shutdown Hours	0.0	0.0	0.0
16. Gross Thermal Energy Generated (MWH)	1612656.8	5201600.3	378997249.3
17. Gross Electrical Energy Generated (MWH)	545360.0	1750535.0	124298428.0
18. Net Electrical Energy Generated (MWH)	525041.0	1689742.0	118511769.0
19. Unit Service Factor	100.0%	100.0%	70.5%
20. Unit Availability Factor	100.0%	100.0%	70.5%
21. Unit Capacity Factor (Using MDC Net)	88.1%	97.7%	66.6%
22. Unit Capacity Factor (Using DER Net)	89.6%	99.3%	66.2%
23. Unit Forced Outage Rate	0.0%	0.0%	11.2%

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

Refueling, April 18, 1999, 36 Days

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25. If Shut Down at End of Report Period, Estimated Date of Start-up: \_\_\_\_\_

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 1999

Docket No.: 50-280  
Unit Name: Surry Unit 1  
Date: 04/01/99  
Completed by: J. R. Pincus  
Telephone: (757) 365-2863

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)

(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 1999**

Docket No.: 50-281  
Unit Name: Surry Unit 2  
Date: 04/01/99  
Completed by: J. R. Pincus  
Telephone: (757) 365-2863

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)

(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: 04/01/99  
Completed by: J. S. Ashley  
Telephone: (757) 365-2161

MONTH: March 1999

<u>Day</u>	<u>Average Daily Power Level (MWe - Net)</u>	<u>Day</u>	<u>Average Daily Power Level (Mwe - Net)</u>
1	819	17	818
2	819	18	819
3	819	19	819
4	819	20	819
5	819	21	818
6	820	22	793
7	819	23	812
8	818	24	818
9	818	25	818
10	819	26	815
11	819	27	812
12	820	28	818
13	820	29	819
14	820	30	820
15	819	31	820
16	819		

**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: 04/01/99  
Completed by: J. S. Ashley  
Telephone: (757) 365-2161

MONTH: March 1999

<u>Day</u>	<u>Average Daily Power Level (Mwe - Net)</u>	<u>Day</u>	<u>Average Daily Power Level (Mwe - Net)</u>
1	750	17	707
2	750	18	701
3	751	19	699
4	749	20	692
5	747	21	686
6	747	22	682
7	748	23	673
8	747	24	671
9	745	25	664
10	741	26	662
11	736	27	658
12	732	28	650
13	726	29	644
14	724	30	640
15	718	31	624
16	713		

**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 1999

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:**

03/01/99	0000	Unit starts the month at 100% / 855 MWe.
03/21/99	2320	Removed waterbox "B" from service. Unit at 100% / 830 MWe.
03/23/99	0746	Returned waterbox "B" to service. Unit at 100% / 849 MWe.
03/31/99	2400	Unit finished the month at 100% / 850 MWe.

**UNIT TWO:**

03/01/99	0000	Unit started the month at 91.5% / 780 MWe. (Began cycle coast-down 02/24/99)
03/31/99	1653	Power lost to MSR control system. Unit at 76% / 765 MWe.
03/31/99	1654	Commenced unit ramp down to stabilize Tave/Tref. Unit at 76% / 765 MWe.
03/31/99	1700	Unit stable at 71% / 615 MWe.
03/31/99	2027	Commenced return to service of MSRs. Unit at 71% / 615 MWe.
03/31/99	2212	MSRs returned to service. Unit at 75% / 650 MWe.
03/31/99	2400	Unit finished the month at 76% / 660 MWe.



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

**MONTH/YEAR: March 1999**

0-ECM-1509-03

**Electrical Corrective Maintenance**  
(Safety Evaluation 99-014)

03/11/99

Electrical Corrective Maintenance Procedure, 0-ECM-1509-03, "VOTES MOV Testing for Quarter Turn Valves", was revised to invoke administrative controls on the Service Water (SW) Motor Operated Valves (MOV) when one is taken out of service for MOV testing. This will maintain the capability to isolate the non-essential SW flowpaths affected by the inoperable valve.

LDS-SPS1/2

**Vendor Procedure**  
(Safety Evaluation 99-016)

03/17/99

Vendor Procedure, LDS-SPS1/2, "Instructions for Valve Acoustic Leak Monitoring", was approved so that vendor technicians can perform leak monitoring on various secondary valves and traps using non-intrusive equipment provided by Leak Detection Services, Inc. while Units 1 and 2 are in normal operation at or near full power.

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

**MONTH/YEAR:** March 1999

None during the Reporting Period

**CHEMISTRY REPORT**

MONTH/YEAR: March 1999

Primary Coolant Analysis	Unit No. 1			Unit No. 2		
	Max.	Min.	Avg.	Max.	Min.	Avg.
Gross Radioactivity, $\mu\text{Ci/ml}$	4.13E-1	2.37E-1	3.05E-1	1.70E-1	1.06E-1	1.46E-1
Suspended Solids, ppm	0.01	0.01	0.01	0.01	0.01	0.01
Gross Tritium, $\mu\text{Ci/ml}$	8.67E-1	7.07E-1	8.01E-1	3.86E-2	2.83E-2	3.38E-2
$^{131}\text{I}$ , $\mu\text{Ci/ml}$	3.90E-4	2.70E-4	3.33E-4	8.75E-5	3.90E-5	6.98E-5
$^{131}\text{I}/^{133}\text{I}$	0.09	0.03	0.06	0.12	0.03	0.01
Hydrogen, cc/kg	41	38.7	40	37.4	35	35.8
Lithium, ppm	2.33	2.07	2.22	0.84	0.68	0.78
Boron - 10, ppm*	228.14	214.03	220.76	0.392	0.196	0.208
Oxygen, (DO), ppm	0.005	0.005	0.005	0.005	0.005	0.005
Chloride, ppm	0.023	0.02	0.021	0.002	0.001	0.001
pH @ 25 degree Celsius	6.56	6.16	6.45	9.54	9.22	9.43

\* Boron - 10 = Total Boron x 0.196

Comments:

None

**FUEL HANDLING  
 UNITS 1 & 2**

MONTH/YEAR: March 1999

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
Dry Storage Cask TN 32-08	03/01/99	32	2E0	LM0DF6	3.5984	N/A
			2S9	LM0ESW	3.5996	
			2S1	LM0ET8	3.6032	
			3S6	LM0ERV	3.5890	
			2T0	LM0K8R	3.5850	
			1T5	LM0K8M	3.5781	
			1T2	LM0K8B	3.5938	
			2T6	LM0K8U	3.5872	
			2T1	LM0K87	3.5799	
			2T7	LM0K8J	3.5826	
			1T9	LM0K8C	3.5882	
			W41	LM041Y	3.2030	
			0F4	LM0JGN	3.6106	
			W29	LM041A	3.2030	
			1T6	LM0K88	3.5810	
			2T5	LM0K8E	3.5836	
			1T8	LM0K85	3.5815	
1T1	LM0K89	3.5985				

**FUEL HANDLING  
UNITS 1 & 2**

MONTH/YEAR: March 1999

<u>New Fuel Shipment or Cask No.</u>	<u>Date Stored or Received</u>	<u>Number of Assemblies per Shipment</u>	<u>Assembly Number</u>	<u>ANSI Number</u>	<u>Initial Enrichment</u>	<u>New or Spent Fuel Shipping Cask Activity</u>
			W32	LM0412	3.2030	
			W20	LM040X	3.2030	
			1T4	LM0K8W	3.5883	
			2T4	LM0K8L	3.5936	
			1T7	LM0K86	3.5815	
			1T0	LM0K8G	3.5945	
			2T8	LM0K8D	3.5964	
			2T3	LM0K8N	3.5968	
			1T3	LM0K8P	3.5856	
			2T2	LM0K8T	3.5952	
			0T9	LM0K85	3.5923	
			1S4	LM0ESK	3.5980	
			1S2	LM0ESU	3.5995	
			4D7	LM0AM6	3.6097	

**FUEL HANDLING  
 UNITS 1 & 2**

MONTH/YEAR: March 1999

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
Dry Storage Cask TN 32-09	03/01/99	32	4T4	LM0K9B	3.7977	N/A
			4S5	LM0ERL	3.5972	
			4S0	LM0ERQ	3.5955	
			4T3	LM0K9K	3.7880	
			5F3	LM0JHE	3.7926	
			5S7	LM0ESS	3.5991	
			2F5	LM0JGK	3.5868	
			1F8	LM0JGG	3.6032	
			0F9	LM0JGP	3.5951	
			4F4	LM0JGV	3.7938	
			2S2	LM0ERZ	3.5985	
			4S7	LM0ERP	3.5974	
			2F8	LM0JG5	3.5857	
			2F4	LM0JGC	3.5961	
			0F5	LM0JG3	3.5995	
1S3	LM0ET6	3.5976				
1S5	LM0ET5	3.5991				



**FUEL HANDLING  
UNITS 1 & 2**

MONTH/YEAR: March 1999

<u>New Fuel Shipment or Cask No.</u>	<u>Date Stored or Received</u>	<u>Number of Assemblies per Shipment</u>	<u>Assembly Number</u>	<u>ANSI Number</u>	<u>Initial Enrichment</u>	<u>New or Spent Fuel Shipping Cask Activity</u>
			4S2	LM0ERM	3.5965	
			W48	LM041T	3.2030	
			0F1	LM0JG0	3.5973	
			0F2	LM0JG1	3.5860	
			0S9	LM0ET1	3.5997	
			4F7	LM0JHK	3.7969	
			2F7	LM0JGL	3.5927	
			2F3	LM0JGA	3.5855	
			1F0	LM0JG7	3.5960	
			3S4	LM0ERJ	3.5993	
			3F0	LM0JH5	3.7950	
			4T2	LM0K9A	3.7984	
			5S8	LM0ESG	3.6000	
			5S3	LM0ET0	3.5997	
			4T1	LM0K9E	3.7940	

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

**MONTH/YEAR:** March 1999

None during the Reporting Period