

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

December 14, 1998

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Serial No. 98-724
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 November 1998 is provided in the attachment.

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

Very truly yours,



E. S. Grecheck, Site Vice President
Surry Power Station

Attachment

Commitments made by this letter: None

cc: U. S. Nuclear Regulatory Commission
Region II
Atlanta Federal Center
61 Forsyth Street, S. W.
Suite 23T85
Atlanta, Georgia 30303

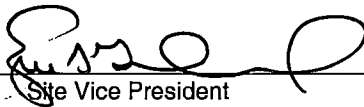
Mr. R. A. Musser
NRC Senior Resident Inspector
Surry Power Station

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**VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION
MONTHLY OPERATING REPORT
REPORT NO. 98-11**

Approved:



Site Vice President

12/14/98
Date

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OPERATING DATA REPORT

Docket No.: 50-280
 Date: 12/03/98
 Completed By: R. Stief
 Telephone: (757) 365-2486

- 1. Unit Name: Surry Unit 1
- 2. Reporting Period: November 1998
- 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	720.0	8016.0	227400.0
12. Hours Reactor Was Critical	232.1	6546.7	160573.1
13. Reactor Reserve Shutdown Hours	0.0	0.0	3774.5
14. Hours Generator On-Line	146.1	6427.0	158027.4
15. Unit Reserve Shutdown Hours	0.0	0.0	3736.2
16. Gross Thermal Energy Generated (MWH)	245387.7	16059355.7	372304371.3
17. Gross Electrical Energy Generated (MWH)	75706.0	5324391.0	122140145.0
18. Net Electrical Energy Generated (MWH)	71919.0	5143534.0	116377755.0
19. Unit Service Factor	20.2%	80.1%	69.4%
20. Unit Availability Factor	20.2%	80.1%	71.1%
21. Unit Capacity Factor (Using MDC Net)	12.5%	80.1%	65.7%
22. Unit Capacity Factor (Using DER Net)	12.7%	81.4%	64.9%
23. Unit Forced Outage Rate	37.8%	7.6%	14.5%

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

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: 12/03/98
 Completed By: R. Stief
 Telephone: (757) 365-2486

- 1. Unit Name: Surry Unit 2
- 2. Reporting Period: November 1998
- 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	720.0	8016.0	224281.0
12. Hours Reactor Was Critical	720.0	8016.0	159166.3
13. Reactor Reserve Shutdown Hours	0.0	0.0	328.1
14. Hours Generator On-Line	720.0	8016.0	157149.5
15. Unit Reserve Shutdown Hours	0.0	0.0	0.0
16. Gross Thermal Energy Generated (MWH)	1832936.7	20370118.5	371903685.8
17. Gross Electrical Energy Generated (MWH)	614975.0	6787245.0	121912853.0
18. Net Electrical Energy Generated (MWH)	595661.0	6564925.0	116208076.0
19. Unit Service Factor	100.0%	100.0%	70.1%
20. Unit Availability Factor	100.0%	100.0%	70.1%
21. Unit Capacity Factor (Using MDC Net)	103.3%	102.2%	66.2%
22. Unit Capacity Factor (Using DER Net)	105.0%	103.9%	65.8%
23. Unit Forced Outage Rate	0.0%	0.0%	11.4%

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

Refueling, April 19, 1999, 35 Days

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: November 1998

Docket No.: 50-280
 Unit Name: Surry Unit 1
 Date: 12/01/98
 Completed by: J. R. Pincus
 Telephone: (757) 365-2863

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
11/01/98	S	485H02M	C	1	N/A	N/A	N/A	Refueling Outage
11/22/98	F	62H25M	A	3	S1-98-013-00	SB	SG	"B" Steam Generator High Level
11/26/98	F	26H27M	A	2	S1-98-014-00	SJ	FCV	Flow Control Valve Failed Closed

(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: November 1998

Docket No.: 50-281

Unit Name: Surry Unit 2

Date: 12/01/98

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: 12/03/98
 Completed by: J. S. Ashley
 Telephone: (757) 365-2161

MONTH: November 1998

Day	Average Daily Power Level (MWe - Net)	Day	Average Daily Power Level (Mwe - Net)
1	0	17	0
2	0	18	0
3	0	19	0
4	0	20	0
5	0	21	132
6	0	22	30
7	0	23	0
8	0	24	32
9	0	25	322
10	0	26	487
11	0	27	0
12	0	28	431
13	0	29	754
14	0	30	806
15	0		
16	0		

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: 12/03/98

Completed by: J. S. Ashley

Telephone: (757) 365-2161

MONTH: November 1998

Day	Average Daily Power Level (Mwe - Net)	Day	Average Daily Power Level (Mwe - Net)
1	829	17	824
2	829	18	824
3	830	19	825
4	831	20	825
5	830	21	826
6	832	22	825
7	832	23	824
8	832	24	824
9	828	25	826
10	828	26	827
11	829	27	824
12	828	28	826
13	828	29	826
14	827	30	827
15	828		
16	827		

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: November 1998

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:

11/01/98	0000	Unit starts the month at 0% / 0 MWe due to Refueling Outage.
11/19/98	0354	Commenced reactor start-up.
11/19/98	0527	Reactor critical.
11/21/98	0502	Unit on-line, commenced ramp up.
11/21/98	0550	Stopped ramp, unit at 29% / 210 MWe.
11/22/98	0031	Clear for power increase > 30%.
11/22/98	0430	Reactor tripped.
11/23/98	1218	Commenced reactor start-up.
11/23/98	1346	Reactor critical.
11/24/98	1855	Unit on-line, commenced ramp up.
11/24/98	1945	Stopped ramp, unit at 30% / 217 MWe.
11/25/98	0305	Recommended ramp up, unit at 29% / 199 MWe.
11/25/98	0505	Stopped ramp, unit at 35% / 253 MWe.
11/25/98	0610	Recommended ramp, unit at 35% / 253 MWe.
11/25/98	1445	Stopped ramp, unit at 54% / 415 MWe.
11/25/98	1820	Recommended ramp, unit at 54% / 415 MWe.
11/26/98	0200	Stopped ramp, unit at 70% / 560 MWe.
11/26/98	1511	Recommended ramp, unit at 68% / 571 MWe.
11/26/98	2108	Reactor tripped.
11/27/98	1439	Reactor critical.
11/27/98	2335	Unit on-line, commenced ramp up.
11/28/98	0017	Stopped ramp, unit at 30% / 210 MWe.
11/28/98	0027	Recommended ramp, unit at 30% / 210 MWe.
11/28/98	0740	Stopped ramp, unit at 49.75% / 400 MWe.
11/28/98	0758	Unit at 50%, ramping up at 3% per hour.
11/28/98	2325	Stopped ramp, unit at 80% / 700 MWe.
11/29/98	0051	Recommended ramp, unit at 80% / 700 MWe.
11/29/98	0411	Stopped ramp, unit at 90% / 770 MWe.
11/29/98	0659	Recommended ramp, unit at 90% / 770 MWe.

SUMMARY OF OPERATING EXPERIENCE (CONTINUED)

MONTH/YEAR: November 1998

UNIT ONE (CONTINUED):

11/29/98	0824	Stopped ramp, unit at 94.5% / 810 MWe.
11/29/98	1255	Recommenced ramp, unit at 94.5% / 810 MWe.
11/29/98	1505	Stopped ramp, unit at 96% / 820 MWe.
11/29/98	1720	Commenced ramp down, unit at 96% / 820 MWe.
11/29/98	1940	Stopped ramp, unit at 90.2% / 785 MWe.
11/29/98	1945	Commenced ramp up, unit at 90.2% / 785 MWe.
11/29/98	2305	Stopped ramp, unit at 98.5% / 835 MWe.
11/30/98	2400	Unit finishes the month at 98.5% / 837 MWe.

UNIT TWO:

11/01/98	0000	Unit starts the month at 100% / 855 MWe.
11/30/98	2400	Unit finishes the month at 100% / 855 MWe.

FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: November 1998

- | | | |
|-------------------|--|----------|
| DCP 94-071 | Design Change Package
(Safety Evaluation 94-051) | 11/03/98 |
| | Design Change Package 94-071, "Condensate Polishing Setpoint Changes for Resin Regeneration/Surry/1 &2", added additional cation resin to the polishers for longer run time. | |
| DCP 97-059 | Design Change Package
(Safety Evaluation 98-051 Rev. 1) | 11/11/98 |
| | Design Change Package 97-059, "CS CAT Supply Valves Replacement 01-CS-MOV-102A/B", eliminates the leakage of the Chemical Addition Tank (CAT) contents past the CAT isolation valves into the Containment Spray piping by replacing the valves with new ones. | |
| DCP 98-007 | Design Change Package
(Safety Evaluation 98-058, Rev. 1) | 11/03/98 |
| | Design Change Package 98-007, "Containment Radiant Energy Shields", installs Marinite board and stainless steel in containment that either replaces or sheaths existing Thermo-Lag material to perform as radiant energy shields. The installation of the Marinite board and stainless steel will provide a noncombustible radiant energy shield in accordance with NRC requirements. | |
| SE 98-076, Rev. 1 | Safety Evaluation | 11/14/98 |
| | JCO 97-006 set Compensatory Actions to provide additional monitoring of containment temperatures for indication of a possible fire due to a regulatory compliance issue regarding Thermo-lag radiant energy shields inside Unit 1 and 2 containments. Revision 1 of Safety Evaluation 98-076 addresses Revision 2 of JCO 97-006 which: (1) updates the status of the JCO in accordance with administrative procedures; (2) evaluates the discontinuance of the Unit 1 Compensatory Actions following implementation of Unit 1, DCP 98-007, which resolved the Thermo-lag regulatory compliance issue inside Unit 1 containment; and (3) evaluates continuance of the Unit 2 Compensatory Actions. | |
| SE 98-103, Rev. 1 | Safety Evaluation | 11/05/98 |
| | A safety evaluation has been performed to determine whether an unreviewed safety question will result from the refueling and operation of Surry Unit 1 Cycle 16. Revision 1 of Safety Evaluation 98-103 accommodates the reevaluation performed for introducing an additional reconstituted assembly in the core – the present core loading already contains a reconstituted assembly at the core's center. Fuel inspection at the end of Cycle 15 identified a leaker among the once burned assemblies intended for re-use in Cycle 16. The failed assembly was reconstituted by replacing the failed fuel rod with a stainless steel filler rod. The reevaluation shows the effect of this reconstitution is negligible. | |

FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: November 1998

TM S1-98-020 **Temporary Modifications** 11/03/98
TM S1-98-021 (Safety Evaluation 98-114)

Temporary Modifications S1-98-020 and S1-98-021 were used to remove the containment sump pump discharge containment isolation trip valve actuators, one at a time, for maintenance and install electrical jumpers to allow operation of the containment sump pumps with the trip valve actuator removed.

DCP 98-069 **Design Change Package** 11/03/98
(Safety Evaluation 98-115)

Design Change Package 98-069, "Control Rod Drive Mechanism (CRDM) Housing Leak Repair/Surry/Unit 1", describes the repairing of two reactor vessel head nozzle canopy seal weld leaks using Canopy Seal Clamp Assemblies (CSCA). CSCA is a permanent non-welded mechanical method of leak repair developed by ABB Combustion Engineering and has been fully tested at operating temperature, pressure and seismic conditions for nuclear power plant use.

TM S1-98-022 **Temporary Modification** 11/06/98
(Safety Evaluation 98-116)

The Primary Drain Transfer Tank (PDTT) Pressure Control Valve, 1-DG-PCV-100, has been noted to be difficult to open once closed due to plant conditions. Temporary Modification S1-98-022 was used to fail 1-DG-PCV-100 in the open position during Cold Shutdown or Refueling Shutdown in order to provide a flow path for Reactor Cooling System (RCS) loop drains to the PDTT. The TM was removed before unit start-up.

DCP 98-044 **Design Change Package** 11/13/98
(Safety Evaluation 98-118)

Design Change Package 98-044, "Turbine Driven Auxiliary Feedwater Pump (TDAFWP) Steam Supply Circuit Upgrade", modifies the TDAFWP circuit logic such that, when the pump is started by an automatic signal and the initiating signal is cleared, steam flow to the TDAFWP can only be stopped after the circuit is manually reset.

TM S1-98-023 **Temporary Modification** 11/17/98
(Safety Evaluation 98-121)

Temporary Modification S1-98-023 will be used during plant shutdown to bypass the bearing lift oil pressure anti-start interlock in the Main Turbine Turning Gear motor circuitry to allow periodic rotation of the turbine rotor using the turning gear.

TM S2-98-007 **Temporary Modification** 11/20/98
(Safety Evaluation 98-123)

Temporary Modification S2-98-007 is to disable a leaking thermal relief valve (RV) and install another RV at the vent valve on the discharge side of the Unit 2 Feedwater Heater. ASME Code section VIII allows this change until the next available outage in which the defective RV shall be replaced.

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

MONTH/YEAR: November 1998

1/2-OPT-FW-008
1/2-AP-21.01

**Operations Periodic Test Procedures
Abnormal Procedures**
(Safety Evaluation 96-074, Rev. 1)

11/03/98

UFSAR Chapter 10.3.5, Condensate and Feedwater System specifies that the Auxiliary Feedwater (AFW) motor operated throttle valves are in full open position during normal operations. Operations Periodic Test Procedures 1/2-OPT-FW-008, "AFW Check Valve Test", were evaluated for unit operation with all six MOV's closed during the testing of AFW cross-connect capability to the other unit which was in cold shutdown or refueling mode. Abnormal Procedures 1/2-AP-21.01 were evaluated for check valve back leakage concerns.

0-ECM-0103-02

Electrical Corrective Maintenance Procedure
(Safety Evaluation 98-117)

11/10/98

Electrical Corrective Maintenance Procedure, 0-ECM-0103-02, "Station Battery UPS System Maintenance", was revised to connect a dummy load to the UPS for troubleshooting, periodic maintenance and testing. This is allowed during plant shutdown conditions or by entering the appropriate limiting condition for operation (LCO) time limit.

1-OP-RC-001A

Operations Procedure
(Safety Evaluation 98-119)

11/14/98

Loop "A" drain valve 1-RC-HCV-1557A is leaking by at a rate of 1.6 gpm to the Primary Drain Transfer Tank (PDTT) which is not acceptable for long term unit operation. Operations Procedure 1-OP-RC-001A, "Reactor Coolant System Valve Alignment", was changed to continue Unit 1 operation with Loop 'A' drain valve manually isolated.

0-ECM-1401-02

Electrical Corrective Maintenance Procedure
(Safety Evaluation 98-122)

11/19/98

Electrical Corrective Maintenance Procedure, 0-ECM-1401-02, "Emergency Operation of Charging Pump Component Cooling Water Motors", installs the TM to allow Operations to operate the Charging Pump CC Pumps by energizing the Motor Control Center breaker. This provides additional detail for post Appendix R fire scenarios.

TESTS AND EXPERIMENTS THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: November 1998

None during the Reporting Period

CHEMISTRY REPORT

MONTH/YEAR: November 1998

Primary Coolant Analysis	Unit No. 1			Unit No. 2		
	Max.	Min.	Avg.	Max.	Min.	Avg.
Gross Radioactivity, $\mu\text{Ci/ml}$	3.13E-1	7.73E-4	3.32E-2	1.82E-1	9.21E-2	1.37E-1
Suspended Solids, ppm	0.250	≤ 0.010	0.064	-	-	-
Gross Tritium, $\mu\text{Ci/ml}$	4.04E-2	3.07E-2	3.35E-2	5.41E-1	4.57E-1	5.05E-1
^{131}I , $\mu\text{Ci/ml}$	8.21E-3	2.68E-5	4.79E-4	1.37E-4	3.27E-5	7.45E-5
$^{131}\text{I}/^{133}\text{I}$	-	-	-	0.09	0.03	0.05
Hydrogen, cc/kg	33.1	23.7	28.9	40.3	38.3	39.1
Lithium, ppm	3.59	≤ 0.10	2.77	2.25	1.96	2.12
Boron - 10, ppm*	485.9	269.5	392.4	77.6	58.6	67.8
Oxygen, (DO), ppm	9.0	≤ 0.005	3.57	≤ 0.005	≤ 0.005	≤ 0.005
Chloride, ppm	0.038	≤ 0.001	0.008	0.004	≤ 0.001	0.002
pH @ 25 degree Celsius	6.30	4.35	4.98	7.27	6.59	6.96

* Boron - 10 = Total Boron x 0.196

Comments:

None

**FUEL HANDLING
UNITS 1 & 2**

MONTH/YEAR: November 1998

<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>
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None during the Reporting Period

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

MONTH/YEAR: November 1998

None during the Reporting Period