

VIRGINIA ELECTRIC AND POWER COMPANY

RICHMOND, VIRGINIA 23261

April 8, 1998

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

Serial No. 98-192
SPS Lic/JCS R0
Docket Nos. 50-280
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License Nos. DPR-32
DPR-37

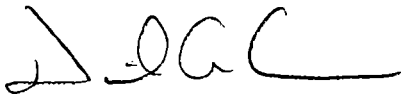
Gentlemen:

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 1998, is provided in the attachment.

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

Very truly yours,



D. A. Christian,
Site Vice President

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

IE24'11

**VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION
MONTHLY OPERATING REPORT
REPORT NO. 98-03**

Approved:

4.8.98
Site Vice President Date

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OPERATING DATA REPORT

Docket No.: 50-280
Date: 04/02/98
Completed By: D. K. Mason
Telephone: (757) 365-2459

1. Unit Name:..... Surry Unit 1
2. Reporting Period:..... March, 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: _____

	This Month	Year-To-Date	Cumulative
11. Hours in Reporting Period	744.0	2160.0	221544.0
12. Hours Reactor Was Critical	493.9	1859.3	155885.1
13. Reactor Reserve Shutdown Hours	0.0	0.0	3774.5
14. Hours Generator On-Line	481.2	1839.5	153439.0
15. Unit Reserve Shutdown Hours	0.0	0.0	3736.2
16. Gross Thermal Energy Generated (MWH)	1206302.9	4654401.7	360899417.3
17. Gross Electrical Energy Generated (MWH)	403900.0	1559994.0	118375748.0
18. Net Electrical Energy Generated (MWH)	390464.0	1508543.0	112742764.0
19. Unit Service Factor	64.7%	85.2%	69.3%
20. Unit Availability Factor	64.7%	85.2%	70.9%
21. Unit Capacity Factor (Using MDC Net)	65.5%	87.2%	65.4%
22. Unit Capacity Factor (Using DER Net)	66.6%	88.6%	64.6%
23. Unit Forced Outage Rate	0.0%	3.0%	14.6%

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):

	FORECAST	ACHIEVED
INITIAL CRITICALITY	_____	_____
INITIAL ELECTRICITY	_____	_____
COMMERCIAL OPERATION	_____	_____

OPERATING DATA REPORT

Docket No.: 50-281
Date: 04/02/98
Completed By: D. K. Mason
Telephone: (757) 365-2459

1. Unit Name:..... Surry Unit 2
2. Reporting Period:..... March, 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: _____

11.	Hours in Reporting Period	744.0	2160.0	218425.0
12.	Hours Reactor Was Critical	744.0	2160.0	153310.3
13.	Reactor Reserve Shutdown Hours	0.0	0.0	328.1
14.	Hours Generator On-Line	744.0	2160.0	151293.5
15.	Unit Reserve Shutdown Hours	0.0	0.0	0.0
16.	Gross Thermal Energy Generated (MWH)	1891107.7	5495754.9	357029322.2
17.	Gross Electrical Energy Generated (MWH)	633365.0	1842315.0	116967923.0
18.	Net Electrical Energy Generated (MWH)	612967.0	1783495.0	111426646.0
19.	Unit Service Factor	100.0%	100.0%	69.3%
20.	Unit Availability Factor	100.0%	100.0%	69.3%
21.	Unit Capacity Factor (Using MDC Net)	102.9%	103.1%	65.2%
22.	Unit Capacity Factor (Using DER Net)	104.6%	104.8%	64.7%
23.	Unit Forced Outage Rate	0.0%	0.0%	11.8%

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):

	FORECAST	ACHIEVED
INITIAL CRITICALITY	_____	_____
INITIAL ELECTRICITY	_____	_____
COMMERCIAL OPERATION	_____	_____

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

REPORT MONTH: March, 1998

Docket No.: 50-280
Unit Name: Surry Unit 1
Date: 04/03/98
Completed by: G. N. Marshall
Telephone: (757) 365-2465

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
03/08/98	F	16h14m	A	N/A	NONE	LE	FAN	Broken iso-phase fan belt replaced
03/20/98	S	10d22h	B	1	NONE	N/A	N/A	Scheduled Preventive Maintenance Outage

(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, 1998

Docket No.: 50-281

Unit Name: Surry Unit 2

Date: 04/03/98

Completed by: G. N. Marshall

Telephone: (757) 365-2465

	(1)		(2)	(3)		(4)	(5)	
Date	Type	Duration Hours	Reason	Method of Shutting Down Rx	LER No.	System Code	Component Code	Cause & Corrective Action to Prevent Recurrence
03/14/98	F	11	B	N/A	NONE	SB	V	Freedom Valve Test

(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: 04/03/98
 Completed by: J. C. Steinert
 Telephone: (757) 365-2834

MONTH: March, 1998

Day	Average Daily Power Level (MWe - Net)	Day	Average Daily Power Level (MWe - Net)
1	830	17	829
2	828	18	826
3	827	19	825
4	824	20	701
5	823	21	0
6	823	22	0
7	826	23	0
8	676	24	0
9	824	25	0
10	826	26	0
11	826	27	0
12	826	28	0
13	826	29	0
14	828	30	0
15	828	31	17
16	829		

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: 04/03/98
Completed by: John C. Steinert
Telephone: (757) 365-2837

MONTH: March, 1998

Day	Average Daily Power Level (MWe - Net)	Day	Average Daily Power Level (MWe - Net)
1	828	17	829
2	829	18	828
3	826	19	825
4	825	20	825
5	824	21	817
6	826	22	821
7	826	23	822
8	825	24	828
9	824	25	825
10	825	26	827
11	826	27	822
12	826	28	821
13	827	29	822
14	791	30	822
15	829	31	821
16	828		

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, 1998

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

UNIT ONE:

03/01/98	0000	Unit 1 operating at 100%, 855 MWe.
03/08/98	0941	Commenced ramp down to self-cooling rating of iso-phase bus.
03/08/98	1246	Stopped ramp at 65%, 540 MWe.
03/08/98	2136	Commenced ramp up at 64%, 540 MWe.
03/09/98	0155	Unit 1 operating at 100%, 855 MWe.
03/20/98	1717	Commenced unit shutdown from 100%, 855 MWe.
03/20/98	2254	Unit off line. Reactor power 4%.
03/21/98	0259	Tripped main turbine.
03/21/98	0307	Manually tripped reactor.
03/31/98	1314	Reactor Critical
03/31/98	2141	Unit on line, commence ramp up.
03/31/98	2400	Unit 1 operating at 50% , 414 MWe.

UNIT TWO:

03/01/98	0000	Unit 2 operating at 100%, 855 MWe.
03/14/98	0630	Commenced Ramp Down for Unit Freedom Valve Test
03/14/98	1216	Stopped ramp at 74%, 650 MWe
03/14/98	1313	Commenced ramp up
03/24/98	1530	Unit operating at 100%, 855 MWe
03/31/98	2400	Unit 2 operating at 100%, 855 MWe.

FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: March, 1998

JCO SC-97-006

Justification for Continued Operation
(SE 97-0152 Rev. 1)

03/26/98

The purpose of this revision to the JCO is modify the method of monitoring eighteen containment Radiant Thermal Detectors (RTDs). The RTD high alarm limits will be set 15 degrees above the existing containment temperature. The revision provides the formal tracking mechanism and on shift training of Operations personnel to provide the necessary instructions for operator response to alarms received on the P-250 printer through operations procedures. The RTDs will be monitored and a weekly review of RTD temperatures will be performed in accordance with a periodic test for any temperature shifts. A design change will be completed for each unit during the next refueling outage to correct the radiant energy shield deficiency.

SE 98-0027

Safety Evaluation

03/05/98

The Safety Evaluation was performed because two heat trace circuits on Unit 1 had been inoperable for greater than thirty days due to a low wattage output ratio. One heat trace circuit is on the boron injection flow path and one is in the charging discharge flow path. The heat trace circuits are designed to prevent solidification of boric acid in the associated piping and components by maintaining boric acid solution temperature at greater than technical specification limits. There are redundant heat trace circuits for the affected piping and they are verified operable daily by operator logs and a Main Control Room annunciator alarms whenever the temperature of the heat trace circuits are within the same temperature band as required by the logs.

FS 98-04

UFSAR Change Request
(Safety Evaluation No. 98-0029)

03/12/98

UFSAR Change Request FS 98-04 documents Quality Assurance (QA) Program organizational responsibilities for the Independent Spent Fuel Storage Installation (ISFSI) in Chapter 17. The changes to the UFSAR are administrative in nature and do not reduce the effectiveness of the QA Program or reduce commitments in the program.

FS 97-044

UFSAR Change Request
(Safety Evaluation No. 98-0030)

03/12/98

UFSAR Change Request FS 97-004 documents an alternative to ANSI/ANS 3.1 (Draft 12/79) by stating that the requalification training requirements for Shift Supervisor, Senior Reactor Operator, Reactor Operator, and Shift Technical Advisor, are located in Technical Specifications (TS). This change was made to ensure consistency between the Quality Assurance Topical Report and TS in stating that the above referenced requalification program is in accordance with 10CFR55.59(c).

FS 98-05

UFSAR Change Request
(Safety Evaluation No. 98-0031)

03/12/98

UFSAR Change Request FS 98-05 documents the elimination of the position of Supervisor Administrative Services from the QA Topical Report and administrative procedures. This change is administrative in nature and re-assigns the responsibilities of the eliminated position to other positions within the organization. This change does not reduce the commitments in the QA Program.

FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: March, 1998

FS 98-08

UFSAR Change Request
(Safety Evaluation No. 98-0033)

03/19/98

UFSAR Change Request 98-08 incorporates a sensitivity evaluation to Section 6.3 to account for the impact of flow through vents and drains in the Recirculation Spray (RS) Subsystem. The evaluation of this change confirms the ability of the RS subsystems to meet the containment analysis acceptance criteria considering the flow diverted from the spray headers by the vents and drains while crediting expected RS subsystem flow. The safety evaluation assessed the effect of this change upon the existing accident analysis and accounts for the diverted flow impact until the flow through the vents and drains is reduced and Outside Recirculation Spray minimum flow is restored to the value explicitly used in the core uprate analysis.

TM S1-98-06

Temporary Modification
(Safety Evaluation No. 98-0034)

03/23/98

This Temporary Modification installs a jumper across the switch in the "C" service water line of the ultrasonic level sensors for the High Level screens. The purpose of the TM is to allow the alarm circuit to function for the remaining three lines thus allowing the Main Control Room to monitor the High Level screens with the "C" line out of service without having the indicator light locked in.

SE 98-0037

Safety Evaluation

03/24/98

Safety Evaluation 98-0037 was performed because one heat trace circuit on Unit 2 had been inoperable for greater than thirty days due to a low wattage output ratio. The heat trace circuit is on the boron injection flow path. The heat trace circuit is designed to prevent solidification of boric acid in the associated piping and components by maintaining boric acid solution temperature at greater than technical specification limits. There is a redundant heat trace circuit for the affected piping and it is verified operable daily by operator logs. A Main Control Room annunciator alarms whenever the temperature of the heat trace circuits are not within the temperature band required by technical specification.

SE 98-0038

Safety Evaluation

03/24/98

Safety Evaluation 98-0038 documents how the fire barriers separating the Unit 1 and Unit 2 Normal Switchgear Rooms (NSGRs) from their respective Mechanical Equipment Rooms (MERs) are adequate as they exist with ventilation ducts between the two areas not completely sealed. The evaluation will also be added to Chapter 10 of the Appendix R Report. The evaluation was performed in accordance with Generic Letter 86-10, Interpretation #4, allowing engineering evaluations of fire area boundaries. The NSGRs both contain smoke detectors for early warning of fires the annunciate in the Main Control Room and each area is equipped with a total flooding CO₂ system. The MERs are large open areas with a limited amount of combustibles. If a fire were to occur in the MERs, it would not be expected to impinge on the ventilation duct penetrations due to the limited amount of combustibles in the room, the lack of combustibles in the pipe chase, and the open room design would dissipate the heat quickly.

FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: March, 1998

TM S1-98-07

Temporary Modification
(SE 98-0040)

03/26/98

TM S1-98-07 installed a seal weld plug in a leaking reactor coolant pump Resistance Temperature Detector (RTD) thermowell found during a scheduled maintenance outage. The RTD was removed and the seal weld plug installed and will remain in place until a future refueling outage when it will be replaced with a wet RTD insert. Normal operating procedures were revised to provide guidance on available indications for pump bearing seal water temperature. The failure of the plug and weld are no different than those postulated for the failure of the thermowell and the potential bearing degradation as a result of a loss of seal cooling water flow. The condition is bounded by previous UFSAR analysis.

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

MONTH/YEAR: March, 1998

1/2-LPT-FP-017 & 018
0-LPT-FP-010 & 022
0-LPT-FP-026 & 027

Loss Prevention Periodic Test Procedures
(Safety Evaluation No. 98-0026)

03/03/98

Loss Prevention Periodic Test Procedures 1/2-LPT-FP-017 & 018 "Emergency Switchgear Room Halon System," 0-LPT-FP-010 & 022 "Fuel Oil Pump House High Pressure CO₂ System," and 0-LPT-FP-026 & 027 "Emergency Service Water Diesel Fuel Oil Tank Room High Pressure CO₂ System," were permanently changed by adding a Temporary Modification to facilitate testing. The procedures will allow the lifting of the solenoid operating valves (SOV) from each pilot valve on the Halon gas and CO₂ gas cylinders during testing thus preventing the trip of the systems and the release of suppression gas into the affected area.

0-LSP-FP-010 & 011
0-LSP-FP-029 & 030
0-LSP-FP-033 & 034
0-LSP-FP-035 & 036
0-LSP-FP-038 & 039
0-LSP-FP-042
PT-24.35

Loss Prevention Surveillance Procedures
(Safety Evaluation No. 98-0036)

03/24/98

Loss Prevention Surveillance Procedures 0-LSP-FP-010 & 011 "Administrative Building High Pressure CO₂ System," 0-LSP-FP-029 & 030 "Training Center Computer Room Halon System," and 0-LSP-FP-033 & 034 "Training Center Simulator Halon System," 0-LSP-FP-035 & 036 "Security Halon System," 0-LSP-FP-038 & 039 "LEOF Halon System," 0-LSP-FP-042 "TSC Vent Filters High Pressure CO₂ System," and 0-PT-24.35 "TSC Vent Filter Test," were permanently changed by adding a Temporary Modification to facilitate testing. The procedures will allow the lifting of the solenoid operating valves (SOV) from each pilot valve on the Halon gas and CO₂ gas cylinders during testing thus preventing the inadvertent trip of the systems and the release of suppression gas into the affected area.

GOP-1.1

General Operating Procedure
(Safety Evaluation 98-0041)

03/27/98

General Operating Procedure 1-GOP-1.1 "Unit Startup, RCS Heat-up From Ambient to 190° F," was revised to procedurally control a temporary modification to allow the installation and removal of a Passive Autocatalytic Recombiner (PAR) in Unit 1 containment. The PAR will be used and the current method of "feed and bleed" using the containment vacuum pumps will remain available for the control of the hydrogen concentration in containment.

1-TMOP-RH-3047

Temporary Maintenance Operating Procedure
(Safety Evaluation 98-0042)

Temporary Maintenance Operating Procedure 1-TMOP-RH-3047 "Draining and Flushing the RHR System," was developed to procedurally control the temporary installation of a hose between the containment Nitrogen Header and the Residual Heat Removal System (RHR). The nitrogen gas will be used to assist in draining the RHR system while precluding the introduction of oxygen in the RHR and Reactor Coolant Systems (RCS). The RHR system will be isolated from the RCS and declared inoperable for the evolution and pressure will be controlled at less than 100 psig.

TESTS AND EXPERIMENTS THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: March, 1998

None During the Reporting Period

CHEMISTRY REPORT

MONTH/YEAR: March, 1998

Primary Coolant Analysis	Unit No. 1			Unit No. 2		
	Max.	Min.	Avg.	Max.	Min.	Avg.
Gross Radioactivity, $\mu\text{Ci/ml}$	5.20E-1	1.90E-2	2.44E-1	2.17E-1	1.12E-1	1.66E-1
Suspended Solids, ppm	0.500	≤ 0.010	0.17	≤ 0.010	≤ 0.001	≤ 0.001
Gross Tritium, $\mu\text{Ci/ml}$	3.79E-1	3.43E-1	3.60E-1	8.65E-1	8.21E-1	8.48E-1
^{131}I , $\mu\text{Ci/ml}$	2.01E-1	6.95E-4	1.55E-2	5.39E-5	2.59E-5	4.27E-5
$^{131}\text{I}/^{133}\text{I}$	0.23	0.11	0.15	0.10	0.05	0.08
Hydrogen, cc/kg	33.0	0.8	12.1	40.2	31.6	35.1
Lithium, ppm	2.42	1.31	2.06	2.34	2.06	2.21
Boron - 10, ppm*	324.2	108.4	228.8	214.4	200.7	208.4
Oxygen, (DO), ppm	0.200	≤ 0.005	0.012	≤ 0.005	≤ 0.005	≤ 0.005
Chloride, ppm	≤ 0.050	0.002	0.007	0.005	0.005	0.005
pH at 25 degree Celsius	6.99	6.08	6.59	6.68	6.48	6.56

* Boron - 10 = Total Boron x 0.196

Comments:

None

**FUEL HANDLING
UNITS 1 & 2**

MONTH/YEAR: March, 1998

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
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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: March, 1998

None During the Reporting Period