VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

January 13, 1998

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

Serial No. 98-027
SPS Lic/JDK 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 December 1997 is provided in the attachment.

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

Very truly yours,

D. A. Christian, Station Manager
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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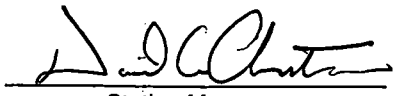
VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION
MONTHLY OPERATING REPORT
REPORT NO. 97-12

Approved:  1-13-98

Station Manager — Date

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OPERATING DATA REPORT

Docket No.: 50-280
Date: 01/05/98
Completed By: D. K. Mason
Telephone: (757) 365-2459

1. Unit Name: ..... Surry Unit 1
2. Reporting Period: ..... December, 1997
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	8760.0	219384.0
12.	Hours Reactor Was Critical	744.0	7191.1	154025.8
13.	Reactor Reserve Shutdown Hours	0.0	0.0	3774.5
14.	Hours Generator On-Line	744.0	7068.5	151599.5
15.	Unit Reserve Shutdown Hours	0.0	0.0	3736.2
16.	Gross Thermal Energy Generated (MWH)	1894162.9	17609571.8	356245015.6
17.	Gross Electrical Energy Generated (MWH)	634447.0	5842936.0	116815754.0
18.	Net Electrical Energy Generated (MWH)	614197.0	5640472.0	111234221.0
19.	Unit Service Factor	100.0%	80.7%	69.1%
20.	Unit Availability Factor	100.0%	80.7%	70.8%
21.	Unit Capacity Factor (Using MDC Net)	103.1%	80.4%	65.2%
22.	Unit Capacity Factor (Using DER Net)	104.8%	81.7%	64.3%
23.	Unit Forced Outage Rate	0.0%	3.9%	14.8%

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		

OPERATING DATA REPORT

Docket No.: 50-281
Date: 01/05/98
Completed By: D. K. Mason
Telephone: (757) 365-2459

1. Unit Name: ..... Surry Unit 2
2. Reporting Period: ..... December, 1997
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	8760.0	216264.0
12.	Hours Reactor Was Critical	710.8	8074.7	151150.3
13.	Reactor Reserve Shutdown Hours	0.0	0.0	328.1
14.	Hours Generator On-Line	705.8	8035.6	149133.4
15.	Unit Reserve Shutdown Hours	0.0	0.0	0.0
16.	Gross Thermal Energy Generated (MWH)	1684576.2	20059310.5	351533567.3
17.	Gross Electrical Energy Generated (MWH)	564360.0	6674809.0	115125608.0
18.	Net Electrical Energy Generated (MWH)	546098.0	6451272.0	109643151.0
19.	Unit Service Factor	94.9%	91.7%	69.0%
20.	Unit Availability Factor	94.9%	91.7%	69.0%
21.	Unit Capacity Factor (Using MDC Net)	91.6%	91.9%	64.9%
22.	Unit Capacity Factor (Using DER Net)	93.1%	93.5%	64.3%
23.	Unit Forced Outage Rate	5.1%	1.3%	11.9%

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: DECEMBER, 1997

Docket No.: 50-280
Unit Name: Surry Unit 1
Date: 01/05/98
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

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: DECEMBER, 1997

Docket No.: 50-281
Unit Name: Surry Unit 2
Date: 01/05/98
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
12/2/97	F	38.2	A	1	97-004	SB	ZI	Invalid Main Steam Trip Valve (MSTV) indication resulted in manual trip. MSTV actuator arm was relocated closer to the valve position bar to provide additional overlap.

(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: 01/05/98
Completed by: J. D. Kilmer
Telephone: (757) 365-2792

MONTH: DECEMBER, 1997

Day	Average Daily Power Level (MWe - Net)	Day	Average Daily Power Level (MWe - Net)
1	824	17	825
2	811	18	826
3	824	19	827
4	825	20	828
5	825	21	828
6	825	22	828
7	827	23	826
8	828	24	826
9	828	25	827
10	828	26	826
11	828	27	825
12	828	28	825
13	828	29	824
14	828	30	821
15	827	31	821
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.

AVERAGE DAILY UNIT POWER LEVEL

Docket No.: 50-281
Unit Name: Surry Unit 2
Date: 01/05/98
Completed by: John D. Kilmer
Telephone: (757) 365-2792

MONTH: DECEMBER, 1997

Day	Average Daily Power Level (MWe - Net)	Day	Average Daily Power Level (MWe - Net)
1	831	17	827
2	327	18	828
3	0	19	827
4	214	20	826
5	216	21	827
6	482	22	828
7	827	23	828
8	827	24	826
9	828	25	827
10	828	26	825
11	827	27	826
12	828	28	826
13	828	29	827
14	828	30	829
15	828	31	830
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: DECEMBER, 1997

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:

12/01/97	0000	Unit 1 starts the month at 100% / 854 MWe.
12/31/97	2400	Unit 1 finishes the month at 100% / 854 MWe.

UNIT TWO:

12/01/97	0000	Unit 2 starts the month at 100% / 854 MWe.
12/02/97	0930	Manual reactor trip due to the "A" Main Steam Trip Valve indicating intermediate position.
12/03/97	1744	Commence reactor startup.
	1843	Reactor critical.
	2342	Unit on line and Starting power increase.
12/04/97	0021	Stop power increase at 30% / 220 MWe.
12/06/97	0926	Start power increase.
	2223	Stop power increase at 100% / 850 MWe.
12/31/97	2400	Unit 2 finishes the month at 100% / 855 MWe.

FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: DECEMBER, 1997

Appendix R Report — **Technical Report** — 12/01/97
(Safety Evaluation No. 97-154)

This evaluation is being performed to assess the annual update of the Surry 10CFR50 Appendix R Report for 1997. It incorporates previously approved Design Change Packages completed during 1996 through September 1997, as well as information concerning other station changes as they pertain to Appendix R. Engineering evaluations were revised to address changes to fire doors. Changes to Appendix R exemption requests were performed to reflect current plant configurations.

The level of fire protection for the station is not being diminished, and the changes will not adversely affect the capacity to achieve and maintain safe shutdown in the event of a fire. Therefore, an unreviewed safety question does not exist.

TM S1-97-020 — **Temporary Modification** — 12/05/97
(Safety Evaluation No. 97-156)

This Temporary Modification (TM) installs a jumper hose to provide an alternate water supply (Fish Screens system) to the Low Level Intake Structure Vacuum Priming (VP) system until the normal well water supply pump is returned to service.

This TM will enable the non-safety-related VP system to operate normally with the alternate water supply. Therefore, an unreviewed safety question does not exist.

SE 97-008I — **Safety Evaluation** — 12/17/97

Safety Evaluation 97-008I was performed for the Surry ISFSI Safety Analysis Report. The TN-32 cask Topical Safety Analysis Report drawing 1049-70-2, rev. 2 shows a 30 degree angle for the trunnion. This is the weld prep angle for the trunnion to the gamma shield shell. The fabrication drawings show a 45 to 50 degree trunnion weld prep angle. The increase in the weld prep angle allows better access to perform the weld. The 45 to 50 degree angle has been used on all TN-32 trunnions, and was initiated at the start of the TN-32 purchase order. The ISFSI SAR will be amended to note the actual weld prep angle.

Changing a trunnion weld prep angle from 30 degrees to 45 - 50 degrees has no impact on the structural functions of the trunnions. The trunnion analyses presented in Chapter 3 of the TN-32 TSAR are not affected by the change in weld prep angle. Therefore, an unreviewed safety question does not exist.

DCP 93-072 — **Design Change Package** — 12/22/97
(Safety Evaluation 96-131)

Design Change Package (DCP) 93-072, removes the motor and bearing temperature sensors from the trip circuitry of the 555 ton chiller and uses them for indication only.

The 555 ton containment cooling chillers are non-safety related, and activation of the other safety cutouts will still automatically trip the chillers. This modification does not alter any safety related components and will eliminate spurious trips thereby reducing operator distractions and challenges. Therefore, an unreviewed safety question does not exist.

FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: DECEMBER, 1997

JCO C-93-001 Rev. 3 **Justification For Continued Operation** 12/23/97
(Safety Evaluation No. 97-160)

This Safey Evaluation provides approval of an extension to the Justification for Continued Operation (JCO) C-93-001, Rev 3 until completion of Design Change Package 96-024 to achieve full compliance with Appendix R. Compensatory measures are in place to provide an hourly fire watch in the Unit 2 Emergency Switch Gear Room (ESGR) with operable Robert Shaw detection and Halon suppression systems. Should either of these systems become inoperable, a continuous fire watch would be initiated. The compensatory measure will remain in effect until the closeout of the JCO.

The compensatory measures currently in effect provides a level of protection necessary for safe shutdown and is allowed by NRC regulations. The compensatory measure will remain in effect until compliance with 10 CFR 50 Appendix R can be met as described in the UFSAR. Therefore, an unreviewed safety question does not exist.

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

MONTH/YEAR: DECEMBER, 1997

CAL-817
PT-26.6V
IMP-C-RM-36
0-IPM-RM-G-001
0-IPM-RM-G-002
0-IPM-RM-G-003

Calibration Procedure 12/01/97
Instrumentation Periodic Test Procedure
Instrument Maintenance Procedure
Instrument Preventive Maintenance Procedures
(Safety Evaluation No. 96-075 Rev 1)

Calibration Procedure CAL-817, "Model 942 Log Ratemeter Scintillation Detector Source Calibration," Instrumentation Periodic Test Procedure PT-26.6V, "Victoreen Radiation Monitoring Equipment Background, Heat Trace, Flow Fault Checks and Filter Replacement," Instrument Maintenance Procedure IMP-C-RM-36, "Checking, Repairing or Replacing a Component in the Radiation Monitoring System, and Instrument Preventive Maintenance Procedures 0-IPM-RM-G-001, "Digital Ratemeter Model 942B Process Monitor Calibration," 0-IPM-RM-G-002, "945B Series Area Monitor Ratemeter and Detector Calibration," and 0-IPM-RM-G-003, "Model 943-5 GM Tube Detector Calibration," were revised to provide instructions to install/remove temporary modifications in the main control room radiation monitor cabinets to prevent various control functions from occurring while the digital ratemeters are removed from service for testing, repair, or calibration.

These activities will not alter the performance characteristics of any safety related systems or components. Only one ratemeter, that involves a control function, will be removed from service at a time. Therefore, an unreviewed safety question does not exist.

ARP 1C-D7
1-CAL-442
1-PT-36

Annunciator Response Procedure 12/17/97
Calibration Procedure
Instrumentation Periodic Test Procedure
(Safety Evaluation No. 96-095 Rev. 7)

Annunciator Response Procedure 1C-D7, "Pressurizer Power Relief Line Hi Temp," Calibration Procedure 1-CAL-442, "T-1-463 Pressurizer Power Relief Line Temperature," and Instrumentation Periodic Test Procedure 1-PT-36, "Instrument Surveillance," were revised to change the PORV high tailpipe temperature alarm setpoint from 220 °F to 225 °F. The alarm setpoint is set to correspond to Tsat for the normal operating pressure in the Pressurizer Relief Tank (PRT). Since Temporary Modification S1-97-15 allows operation of the PRT on continuous vent to the Overhead Gas System which operates at pressures higher than the PRT, the PORV tailpipe temperature setpoint needs to be raised to match the new operating conditions.

This change involves an improvement in the monitoring of tailpipe temperature by clearing alarm 1C-D7, PRZR PWR RELIEF LINE HI TEMP and re-establishing this annunciator as a tool in the diagnosis of increased PORV leakage. Therefore, an unreviewed safety question does not exist.

TESTS AND EXPERIMENTS THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: DECEMBER, 1997

None During the Reporting Period

CHEMISTRY REPORT

MONTH/YEAR: DECEMBER, 1997

	Unit No. 1			Unit No. 2		
Primary Coolant Analysis	Max.	Min.	Avg.	Max.	Min.	Avg.
Gross Radioactivity, μCi/ml	3.85E-1	2.52E-1	3.14E-1	2.07E-1	9.56E-2	1.51E-1
Suspended Solids, ppm	≤0.010	≤0.010	≤0.010	≤0.010	≤0.010	≤0.010
Gross Tritium, μCi/ml	6.40E-1	5.96E-1	6.24E-1	4.29E-1	2.48E-1	3.29E-1
I^{131}, μCi/ml	3.93E-3	5.46E-4	1.62E-3	1.14E-4	1.17E-5	5.65E-5
I^{131}/I^{133}	0.60	0.09	0.26	0.11	0.07	0.09
Hydrogen, cc/kg	31.7	29.3	30.3	38.1	32.7	35.8
Lithium, ppm	2.33	2.06	2.19	2.94	2.11	2.37
Boron - 10, ppm*	175.8	158.0	167.4	325.9	237.2	268.1
Oxygen, (DO), ppm	≤0.005	≤0.005	≤0.005	≤0.005	≤0.005	≤0.005
Chloride, ppm	0.004	0.002	0.003	0.004	0.003	0.003
pH at 25 degree Celsius	6.77	6.67	6.72	6.49	6.26	6.38

* Boron - 10 = Total Boron x 0.196

Comments:

None

FUEL HANDLING
UNITS 1 & 2

MONTH/YEAR: DECEMBER, 1997

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 32-05	12/16/97	32	OP3	LM05YE	3.6070	N/A
			OP4	LM05Y8	3.6070	
			0S3	LM0ES1	3.5897	
			0S5	LM0ESA	3.6022	
			0S7	LM0ET4	3.5993	
			1P3	LM05XE	3.6070	
			1S1	LM0ESN	3.5994	
			1S6	LM0ESQ	3.5962	
			1S7	LM0ESX	3.5983	
			1S8	LM0ES2	3.5927	
			2P5	LM05YQ	3.6070	
			2P9	LM05Y0	3.6070	
			2S0	LM0ERN	3.6018	
			2S3	LM0ESE	3.5992	
			2S4	LM0ES7	3.5952	
			2S5	LM0ET2	3.5923	
			2S6	LM0ESM	3.5985	
			2S7	LM0ES4	3.5965	
			3P3	LM05YA	3.6070	
			3P9	LM05XL	3.6070	
			3S0	LM0ES5	3.6015	
			3S3	LM0ET9	3.6014	
			3S8	LM0ERT	3.5876	
			3S9	LM0ERW	3.5975	
			4P7	LM09PF	3.6070	
			4S1	LM0ESB	3.6006	

FUEL HANDLING
UNITS 1 & 2

MONTH/YEAR: DECEMBER, 1997

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
			4S3	LM0ERS	3.5815	N/A
			4S8	LM0ESH	3.5986	
			5P6	LM09PD	3.6070	
			5S0	LM0ESF	3.5924	
			6P0	LM05YK	3.6070	
			6P1	LM05Y2	3.6070	

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

MONTH/YEAR: DECEMBER, 1997

None During the Reporting Period