VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261
March 13,1998

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

Serial No. 98-154
SPS Lic/JCS 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 February 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

VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION
MONTHLY OPERATING REPORT
REPORT NO. 98-02

Approved: _____ 3-13-98
Site Vice President Date

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OPERATING DATA REPORT

Docket No.: 50-280
Date: 03/02/98
Completed By: D. K. Mason
Telephone: (757) 365-2459

1. Unit Name: ..... Surry Unit 1
2. Reporting Period: ..... February, 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	672.0	1416.0	220800.0
12.	Hours Reactor Was Critical	621.4	1365.4	155391.2
13.	Reactor Reserve Shutdown Hours	0.0	0.0	3774.5
14.	Hours Generator On-Line	614.3	1358.3	152957.8
15.	Unit Reserve Shutdown Hours	0.0	0.0	3736.2
16.	Gross Thermal Energy Generated (MWH)	1554546.9	3448098.8	359693114.4
17.	Gross Electrical Energy Generated (MWH)	521100.0	1156094.0	117971848.0
18.	Net Electrical Energy Generated (MWH)	504556.0	1118079.0	112352300.0
19.	Unit Service Factor	91.4%	95.9%	69.3%
20.	Unit Availability Factor	91.4%	95.9%	71.0%
21.	Unit Capacity Factor (Using MDC Net)	93.7%	98.6%	65.4%
22.	Unit Capacity Factor (Using DER Net)	95.3%	100.2%	64.6%
23.	Unit Forced Outage Rate	8.6%	4.1%	14.7%

24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):
Maintenance, 03/21/98, 10 Days

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: 03/02/98
Completed By: D. K. Mason
Telephone: (757) 365-2459

1. Unit Name:..... Surry Unit 2
2. Reporting Period:..... February, 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	672.0	1416.0	217681.0
12.	Hours Reactor Was Critical	672.0	1416.0	152566.3
13.	Reactor Reserve Shutdown Hours	0.0	0.0	328.1
14.	Hours Generator On-Line	672.0	1416.0	150549.5
15.	Unit Reserve Shutdown Hours	0.0	0.0	0.0
16.	Gross Thermal Energy Generated (MWH)	1710545.4	3604647.2	355138214.5
17.	Gross Electrical Energy Generated (MWH)	573480.0	1208950.0	116334558.0
18.	Net Electrical Energy Generated (MWH)	555776.0	1170528.0	110813679.0
19.	Unit Service Factor	100.0%	100.0%	69.2%
20.	Unit Availability Factor	100.0%	100.0%	69.2%
21.	Unit Capacity Factor (Using MDC Net)	103.3%	103.2%	65.1%
22.	Unit Capacity Factor (Using DER Net)	105.0%	104.9%	64.6%
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: February, 1998

Docket No.: 50-280
Unit Name: Surry Unit 1
Date: 03/03/98
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
02/02	F	57.8	A	3	S1-1998-002-00	EL	Gen	Loss of Generator Excitation Power, Initiated Root Cause Evaluation to Determine Cause and Recommend Actions to Prevent Recurrence

(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: February, 1998

Docket No.: 50-281
Unit Name: Surry Unit 2
Date: 03/03/98
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

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

MONTH: February, 1998

Day	Average Daily Power Level (MWe - Net)	Day	Average Daily Power Level (MWe - Net)
1	826	17	830
2	167	18	822
3	0	19	819
4	153	20	830
5	818	21	829
6	825	22	830
7	826	23	829
8	826	24	827
9	826	25	827
10	826	26	828
11	826	27	830
12	826	28	831
13	827	29	
14	827	30	
15	832	31	
16	832		

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

MONTH: February, 1998

Day	Average Daily Power Level (MWe - Net)	Day	Average Daily Power Level (MWe - Net)
1	827	17	828
2	824	18	828
3	824	19	828
4	818	20	829
5	826	21	829
6	827	22	828
7	827	23	830
8	827	24	831
9	826	25	831
10	826	26	829
11	826	27	828
12	825	28	829
13	827	29	
14	826	30	
15	827	31	
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: February, 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:

02/01/98	0000	Unit 1 operating at 100% / 855 MWe.
02/02/98	0526	Reactor Trip; Loss of Generator Excitation Power.
02/04/98	0507	Reactor critical.
02/04/98	1508	Unit on line.
02/05/98	0530	Completed Unit ramp to 100%.
02/28/98	2400	Unit 1 operating at 100% / 855 MWe.

UNIT TWO:

02/01/98	0000	Unit 2 operating at 100% / 855 MWe.
02/28/98	2400	Unit 2 operating at 100% / 855 MWe.

FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: February, 1998

SE 98-0015 **Safety Evaluation** 02/03/98

The purpose of this safety evaluation was to clarify the licensing basis associated with the Accident Mitigation System Actuation Circuitry (AMSAC) C-20 interlock setpoint. The NRC Safety Evaluation Report (SER) specified that the AMSAC system will be available at the C-20 setpoint. The SER states that the C-20 setpoint is 40% reactor power, however, the C-20 setpoint to enable AMSAC is derived from main turbine first stage pressure. Under certain conditions, the reactor thermal power may be greater than 40% rated thermal power with main turbine power indicating less than the C-20 AMSAC Setpoint. The change to the licensing basis in the SER allows the enabling of the AMSAC C-20 setpoint at less than or equal to 40% turbine power. This is acceptable provided that the AMSAC system is enabled prior to exceeding 50% reactor power. The evaluation provides flexibility for enabling the AMSAC system and resolves the verbatim compliance issue with the SER.

The change does not create the possibility for an accident or malfunction of a different type previously evaluated in the UFSAR and the AMSAC is not described in Technical Specifications. Therefore, there is no unreviewed safety question.

TM S1-98-03 **Temporary Modification** 02/05/98
(Safety Evaluation No. 98-0016)

This Temporary Modification (TM) involved placing a jumper to bypass the anti-start circuit of the turbine turning gear motor to place the turbine on the turning gear with the bearing lift pressure below 850 PSIG. Sufficient lube oil pressure was verified by Engineering and contract personnel, as indicated by the bearing lift pressure gauge, prior to placing the turbine on turning gear.

The turbine was off line during this installation, therefore, the failure of this jumper would not cause a reactor trip by turbine trip. This action does not increase the consequences of accidents previously analyzed, therefore, there is no unreviewed safety question.

SE 98-0018 **Safety Evaluation** 02/12/98
(Safety Evaluation No. 98-0018)

The Safety Evaluation was performed because the Unit 1 "C" Circulating Water (CW) Pump had been out of service greater that thirty days for planned maintenance. These activities included overhaul of the motor. There are four CW pumps for each unit, and the minimum required by Technical Specifications (TS), to support plant operation is two. Intake canal level is maintained and TS requirements are met by the remaining operable CW pumps.

The unavailability of the Unit 1 "C" CW pump does not increase the consequences of an accident described in the UFSAR or create another type of accident and the CW system is still capable of performing its intended function. Therefore, there is no unreviewed safety question.

S1-98-04 **Temporary Modification** 02/24/98
(Safety Evaluation No. 98-0021)

The Temporary Modification (TM) is needed to install a remote gravity oil addition system to Reactor Coolant Pump 1-RC-P-1B lower motor reservoir. The oil reservoir is losing approximately 1 quart of oil per day. The current method of oil addition results in approximately 500 millirem exposure per containment entry. The TM will allow the addition

FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: February, 1998

of oil from a remote location at an exposure of 25 millirem per evolution. The leaking oil is collected in the reactor coolant motor oil collection system. The amount of oil added will be monitored so that the oil collection system will be remain capable of receiving the full amount of oil in the reactor coolant motor.

The TM will only be in place until the upcoming refueling outage, or a forced outage shutdown when the motor oil leak will be resolved. This TM does not effect the Appendix R Program as the addition of combustibles is insignificant and the components being installed do not represent a sufficient mass to present a danger of damage to any equipment if the system were to come apart during a seismic event. Therefore, there is not an unreviewed safety question.

FS 97-48 **UFSAR Change Request** 02/26/98
(Safety Evaluation No. 98-0022)

UFSAR Change Request FS 97-48 adds a new storage media option for quality assurance records to Section 17.2.17 and Table 17.2.3 that are in accordance with the requirements of NRC Generic Letter 88-8. The optical disk storage option is added that is a more up to date storage media that facilitates unaffected long term storage and provides more efficient electronic retrieval of records.

The change does not affect any plant systems, structures, components, or method of operation. Therefore, there is not an unreviewed safety question.

TM S1-98-05 **Temporary Modification** 02/26/98
(Safety Evaluation No. 98-0023)

This Temporary Modification (TM) installs a recorder to collect test data on specific input and output parameters of the Main Generator and Voltage Regulator to determine the source of and cause for the changes in excitation experienced on the Unit 1 Main Generator. The Unit 1 Main Generator, exciter, and voltage regulator system has experienced instabilities of voltage control. The instability is observed as Main Generator voltage, megawatt, and MVAR swings as well as exciter field current swings. In order to monitor key parameters of the system, a recorder will be installed at permanent plant equipment to monitor and record data to assist in troubleshooting.

The most significant occurrence that could result from the installation and removal of this TM would be a Turbine and Reactor Trip that are bounded by current safety analyses. Therefore, an unreviewed safety question does not exist.

FS 98-02 **UFSAR Change Request** 02/26/98
(Safety Evaluation No. 98-0024)

UFSAR Change Request FS 98-02 revised Section 9.4.3.1, "Component Cooling Water System Description." The section was revised to reflect industry established recommendations for component cooling system chemistry. The change reduces the maximum chromate concentration from 1,000 ppm to 500 ppm for subsystems that contain carbon based mechanical seals, expands the chromate limits from 175-225 ppm to 150-500 ppm, and expands the pH limit from 8.0-9.0 to 8.0-9.5.

The change does not affect UFSAR accident analyses or modify a Technical Specification parameter. Therefore, an unreviewed safety question does not exist.

FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: February, 1998

SE 98-0025 **Safety Evaluation** 02/26/98

Safety Evaluation 98-0025 was initiated to evaluate the adequacy of fire door 1-BS-DR-47 separating the Units 1 and 2 Cable Spreading Rooms (CSRs). The fire door is a pair of swinging fire doors UL listed as a three hour fire door. A periodic test performed of fire doors identified that the allowable gap of 3/16" between the door and frame and between the meeting edge of the door was exceeded. The maximum opening was determined to be approximately 3/16". The evaluation determined that the gaps do not go completely through the door assembly and are not continuous through the door. Additionally the fire area in question is equipped with a carbon dioxide suppression system and an alarm system to the Main Control Room.

The Evaluation concluded that the door remains capable of performing its intended function. Therefore, an unreviewed safety question does not exist.

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

MONTH/YEAR: February, 1998

1-TOP-4084 — **Operations Procedures** — 02/06/98
(Safety Evaluation No. 96-036 Rev. 3)

Operations procedure 1-TOP-4084, "Installation, Operation, and Removal of Jumper for Bypassing 1-RC-TV-1519A," was created because the primary grade (PG) trip valve (TV) to containment (1-RC-TV-1519A) has been declared inoperable. This action requires that the valve be failed closed to assure that the containment isolation boundary is maintained. This action also isolates PG water to containment that is used to maintain the reactor coolant pump standpipe levels and to fill the pressurizer relief tank. A jumper hose will be installed to bypass the TV. This flow path will be administratively controlled to allow the use of the flow path without opening the TV. Closure of associated valves used in this evolution will be able to be completed within sixty seconds. This temporary procedure will allow the flow path to be restored, under administrative control, for intermittent use through the remainder of the cycle.

Administrative controls will ensure that the isolation valves can be closed in the event that containment isolation is necessary. The margin of safety as described in the Technical Specifications is not affected, therefore there is not an unreviewed safety question.

1/2-E-0
1/2-AP-10.14 — **Emergency and Abnormal Procedures** — 02/07/98
(Safety Evaluation No. 98-0017)

In accordance with JCO C-98-001, emergency procedures 1/2-E-0, "Reactor Trip or Safety Injection," were revised and abnormal procedures 1/2-AP-10.14 were created to provide a cross tie for buses H and J on the unit that the Unit 3 Emergency Diesel Generator (EDG) does not align to for a loss of offsite power. This will provide power to the second fuel oil transfer pump for EDG 3. The EDG fuel oil transfer pumps are supplied from motor control centers 1J1 or 2J1. For a loss of offsite power, EDG 3 will align to either bus 1J or 2J. Therefore, only one of the two fuel oil transfer will be powered. The revised and new procedures will provide procedural guidance to crosstie emergency buses to ensure that redundant fuel oil flow paths to EDG 3 are achieved. The crosstie will only be made for a design basis accident condition with a loss of offsite power.

The possibility of an accident or malfunction of a different type than previously evaluated in the UFSAR is not created, and the margin of safety as define in the basis for Technical Specifications is not reduced. Therefore, there is not an unreviewed safety question.

1-TMOP-3041 — **Temporary Maintenance Operating Procedure** — 02/12/98
(Safety Evaluation No. 98-0019)

A Motor Control Center (MCC) will be taken out of service for a tie-in of the Appendix R alternate power supply to Mechanical Equipment Room (MER)-5. The components powered by the MCC were evaluated for operational impact while the MCC is out of service. Procedure 1-TMOP-3041 "Removal From Service and Return to Service of 1-EP-MCC-1A2-3 to support Implementation of DCP 96-024," will be used along with normal operating procedures, compensatory measures, and reliance on alternate equipment will be utilized during the time that the MCC is out of service.

Loads which will be removed form service have no effect on accident analysis previously identified and negligible effect on the operating unit during the performance of this evolution. Existing operating procedures or compensatory measures will provide adequate control or indication while functions are temporarily out of service. Therefore, there is not an unreviewed safety question.

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

MONTH/YEAR: February, 1998

0-AP-17.04
0-AP-17.05
1/2-AP-10.07

Abnormal Procedures 02/21/98
(Safety Evaluation 98-0020)

Safety Evaluation 98-0020 was written to address Deviation Report S-98-0495. Procedures 0-AP-17.04, "EDG 1 or EDG 2 Emergency Operations," 0-AP-17.05, "EDG 3 Emergency Operations," and 1/2-AP-10.07, "Loss of Unit 1/2 Power," will be used to direct operator actions to cope with a potential hydrogen build-up in the battery rooms during a design basis accident (DBA) requiring Control Room isolation. This would require the batteries to go through a discharge / recharge cycle which could produce significant amounts of hydrogen. Currently methods are being reviewed to give the operator explicit guidance on how to restore ventilation to the battery rooms following a loss of coolant accident with a coincident loss of offsite power. Until that guidance is developed, steps will be added to the above referenced procedures that restores power to a battery charger to make the operator aware of the possibility of the hydrogen build-up. The procedure steps will advise the operator to monitor the hydrogen concentration, try to establish ventilation to the battery room, and to de-energize the charger if ventilation cannot be established and a hydrogen problem exist.

These changes in operating procedures will not create the possibility of an accident nor increase the probability or consequences of malfunctions of equipment previously considered in the UFSAR. The changes will not affect Appendix R equipment or the ability of the station to achieve and maintain safe shutdown in the event of a fire. Therefore, there is not an unreviewed safety question.

TESTS AND EXPERIMENTS THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: January, 1998

None During the Reporting Period

CHEMISTRY REPORT

MONTH/YEAR: February, 1998

Primary Coolant Analysis	Unit No. 1			Unit No. 2		
	Max.	Min.	Avg.	Max.	Min.	Avg.
Gross Radioactivity, μCi/ml	4.81E-1	1.20E-1	3.99E-1	2.58E-1	1.47E-1	1.93E-1
Suspended Solids, ppm	0.075	0.075	0.075	-	-	-
Gross Tritium, μCi/ml	5.59E-1	3.52E-1	4.10E-1	7.71E-1	6.49E-1	7.21E-1
I^{131}, μCi/ml	1.29E-1	7.32E-4	1.45E-2	6.66E-5	2.69E-5	4.75E-5
I^{131}/I^{133}	0.50	0.12	0.33	0.12	0.05	0.08
Hydrogen, cc/kg	33.4	30.0	31.5	37.2	33.1	35.0
Lithium, ppm	2.35	1.87	2.16	2.34	2.08	2.22
Boron - 10, ppm*	224.6	121.5	156.8	225.6	215.2	220.4
Oxygen, (DO), ppm	≤0.005	≤0.005	≤0.005	≤0.005	≤0.005	≤0.005
Chloride, ppm	0.004	0.002	0.003	0.005	0.004	0.005
pH at 25 degree Celsius	7.00	6.54	6.83	6.71	6.39	6.55

* Boron - 10 = Total Boron x 0.196

Comments:

None

FUEL HANDLING
UNITS 1 & 2

MONTH/YEAR: February, 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

None During the Reporting Period

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

MONTH/YEAR: February, 1998

None During the Reporting Period