VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

February 10, 1994

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555

Serial No. 94-076
NO/RPC:vlh
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

Enclosed is the Monthly Operating Report for Surry Power Station Units 1 and 2 for the month of January 1994.

Very truly yours,

M L Bowling

M. L. Bowling, Manager
Nuclear Licensing & Programs

Enclosure

cc: U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, N. W.
Suite 2900
Atlanta, Georgia 30323

Mr. M. W. Branch
NRC Senior Resident Inspector
Surry Power Station

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VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION
MONTHLY OPERATING REPORT
REPORT NO. 94-01

Approved:

Original En Route from SPS

Station Manager _____ Date _____

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OPERATING DATA REPORT

Docket No.: 50-280
Date: 02-03-94
Completed By: D. Mason
Telephone: (804) 365-2459

1. Unit Name: ..... Surry Unit 1
2. Reporting Period: ..... January, 1994
3. Licensed Thermal Power (MWt): 2441
4. Nameplate Rating (Gross MWe): 847.5
5. Design Electrical Rating (Net MWe): 788
6. Maximum Dependable Capacity (Gross MWe): 820
7. Maximum Dependable Capacity (Net MWe): 781

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	YTD	Cumulative
11.	Hours In Reporting Period	744.0	744.0	185064.0
12.	Number of Hours Reactor Was Critical	509.2	509.2	124316.4
13.	Reactor Reserve Shutdown Hours	0	0	3774.5
14.	Hours Generator On-Line	506.1	506.1	122185.1
15.	Unit Reserve Shutdown Hours	0	0	3736.2
16.	Gross Thermal Energy Generated (MWH)	745423.1	745423.1	283913168.2
17.	Gross Electrical Energy Generated (MWH)	251015.0	251015.0	92790563.0
18.	Net Electrical Energy Generated (MWH)	237463.0	237463.0	88064564.0
19.	Unit Service Factor	68.0%	68.0%	66.0%
20.	Unit Availability Factor	68.0%	68.0%	68.0%
21.	Unit Capacity Factor (Using MDC Net)	40.9%	40.9%	61.4%
22.	Unit Capacity Factor (Using DER Net)	40.5%	40.5%	60.4%
23.	Unit Forced Outage Rate	0.0%	0.0%	17.4%

24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):
Refueling (10 Year ISI), January 22, 1994, 64 Days

25. If Shut Down at End of Report Period, Estimated Date of Start-up: March 26, 1994

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: 02-03-94
Completed By: D. Mason
Telephone: (804) 365-2459

1. Unit Name:..... Surry Unit 2
2. Reporting Period:..... January, 1994
3. Licensed Thermal Power (MWt):..... 2441
4. Nameplate Rating (Gross MWe):..... 847.5
5. Design Electrical Rating (Net MWe):..... 788
6. Maximum Dependable Capacity (Gross MWe):.... 820
7. Maximum Dependable Capacity (Net MWe):..... 781

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	YTD	Cumulative
11.	Hours In Reporting Period	744.0	744.0	181944.0
12.	Number of Hours Reactor Was Critical	744.0	744.0	120820.3
13.	Reactor Reserve Shutdown Hours	0	0	328.1
14.	Hours Generator On-Line	744.0	744.0	118959.6
15.	Unit Reserve Shutdown Hours	0	0	0
16.	Gross Thermal Energy Generated (MWH)	1806923.8	1806923.8	277482666.2
17.	Gross Electrical Energy Generated (MWH)	606580.0	606580.0	90552204.0
18.	Net Electrical Energy Generated (MWH)	585524.0	585524.0	85917594.0
19.	Unit Service Factor	100.0%	100.0%	65.4%
20.	Unit Availability Factor	100.0%	100.0%	65.4%
21.	Unit Capacity Factor (Using MDC Net)	100.8%	100.8%	60.6%
22.	Unit Capacity Factor (Using DER Net)	99.9%	99.9%	59.9%
23.	Unit Forced Outage Rate	0.0%	0.0%	14.0%

24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):
None

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: January, 1994

Docket No.: 50-280
Unit Name: Surry Unit 1
Date: 02-03-94
Completed by: Craig Olsen
Telephone: (804) 365-2155

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
940122	S	237.9	C	1	N/A	AB	RCT	Refueling Shutdown (10 Year ISI)

(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: January, 1994

Docket No.: 50-281
Unit Name: Surry Unit 2
Date: 02-03-94
Completed by: Craig Olsen
Telephone: (804) 365-2155

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
940104	F	0	B	N/A	N/A	IG	RIT	Turbine runback occurred during the performance of Special Test 2-ST-307, "Nuclear Instrumentation System Noise Measurement and Analysis", when a control power fuse in the power range nuclear instrumentation drawer failed due to an inadequately grounded oscilloscope.

(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: 02-06-94
Completed by: Pat Kessler
Telephone: 365-2790

MONTH: January, 1994

Day	Average Daily Power Level (MWe - Net)	Day	Average Daily Power Level (MWe - Net)
1	494	17	452
2	494	18	447
3	491	19	434
4	491	20	435
5	490	21	420
6	491	22	13
7	485	23	0
8	486	24	0
9	486	25	0
10	480	26	0
11	479	27	0
12	470	28	0
13	464	29	0
14	468	30	0
15	467	31	0
16	459		

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: 02-06-94
Completed by: Pat Kessler
Telephone: 365-2790

MONTH: January, 1994

Day	Average Daily Power Level (MWe - Net)	Day	Average Daily Power Level (MWe - Net)
1	790	17	793
2	791	18	792
3	790	19	783
4	665	20	793
5	789	21	792
6	788	22	792
7	789	23	790
8	789	24	792
9	790	25	793
10	791	26	794
11	791	27	795
12	791	28	794
13	791	29	794
14	790	30	793
15	790	31	791
16	792		

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: January, 1994

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:

01/01/94	0000	The reporting period began with the Unit operating at 63% power, 516 MWe, in a power coast down.
01/21/94	2217	Started power reduction at 53.5%, 425 MWe, to begin refueling shutdown.
01/22/94	0206	Unit off-line. Reactor remained critical to facilitate main turbine overspeed testing.
01/22/94	0512	Manual reactor trip initiated; began Reactor Coolant system cooldown.
01/31/94	2400	The reporting period ended with the Unit in the refueling shutdown mode.

UNIT TWO:

01/01/94	0000	The reporting period began with the Unit operating at 100% power, 820 MWe.
01/04/94	1025	Turbine runback occurred during the performance of Special Test 2-ST-307, "Nuclear Instrumentation System Noise Measurement and Analysis", when a control power fuse in the power range nuclear instrumentation drawer failed due to an inadequately grounded oscilloscope.
	1032	Turbine runback stopped at 48% power, 390 MWe. Steam dumps open.
	1033	Steam transferred from steam dumps to turbine. Started power increase.
	1043	Turbine runback occurred from 70% power, 600 MWe, as a result of the previous runback signal not being reset.
	1044	Turbine runback stopped at 60% power, 480 MWe.
	1810	Started power increase.
	2214	Stopped power increase at 100%, 825 MWe.
01/19/94	1005	Started power reduction due to decreasing intake canal inventory (resulting from the formation of ice at the low level intake structure) and main condenser vacuum.
	1035	Stopped power reduction at 92%, 690 MWe.
	1102	Started power increase.
	1134	Stopped power increase at 100%, 825 MWe.
01/31/94	2400	The reporting period ended with the Unit operating at 100% power, 825 MWe.

FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: January, 1994

SE 93-235 **Safety Evaluation** 12-16-93

Safety Evaluation 93-235 was performed to evaluate the interim storage of replacement control rod guide tubes (CRGT) in the Surry Steam Generator Storage Facility until they are installed in Unit 2. The evaluation also included the construction of the two storage containers that will be used.

The evaluation concluded that this activity is acceptable since the storage containers are designed to remain functional during a design basis event and the increase in radiation levels resulting from the contaminated CRGTs will be negligible and within the original design basis. This change will not impact any safety-related components or systems. Therefore, an unreviewed safety question does not exist.

EWR 89-352 **Engineering Work Request** 01-05-94

Engineering Work Request 89-352 replaced certain Gaseous Waste (GW) system nonsafety-related piping, components and isolation valves with equivalent safety-related equipment.

The replacement valves and piping were manufactured in accordance with ASME III, Code Class 3 standards, which is consistent with the existing design. The modifications improved the reliability of the subject equipment and did not affect the performance of the GW system. Therefore, an unreviewed safety question did not exist.

DCP 89-19 **Design Change Package** 01-11-94
(Safety Evaluation No. 91-005)

Design Change Package 89-19 replaced the 24 hour equalize charging timers in the station battery uninterruptible power supply (UPS) units with equivalent timers that have a 160 hour maximum timing cycle.

This modification eliminated the need for resetting the timers daily and enabled the charging cycle to be uninterrupted. The change did not affect the operation or performance characteristics of the UPS units. Therefore, an unreviewed safety question did not exist.

DCP 93-13 **Design Change Package** 01-17-94
(Safety Evaluation No. 93-160)

Design Change Package 93-160 installed Pyrocrete over the existing Thermo-Lag fire barrier enclosure surrounding Service Water (SW) system lines in Mechanical Equipment Room No. 3. The Thermo-Lag had to be removed prior to the installation of the Pyrocrete in certain locations due to space limitations.

This modification was implemented to ensure the subject lines are protected by a three hour fire-rated barrier. The design or operability of the SW system was not affected. Therefore, an unreviewed safety question did not exist.

FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: January, 1994

FS 91-19 — **UFSAR Change** — 01-17-94
(Safety Evaluation 94-005)

Updated Final Safety Analysis Report Change 91-19 revised Section 10.3.5.3, "[Auxiliary Feedwater System] Performance Analysis", to delete references to auxiliary feedwater (AFW) pump flow restrictions that were instituted in response to water hammer concerns.

New steam generators were installed in 1979 and 1980 which incorporated a different feed ring and nozzle design for feedwater flow to the SGs. A loop seal in the feedwater system line was also installed. These modifications effectively eliminated the water hammer concerns. The change to the UFSAR did not affect the operation of the AFW system. Therefore, an unreviewed safety question did not exist.

WO 264317 — **Work Order** — 01-17-94
(Safety Evaluation No. 94-004)

Work Order 264317 removed Unit 1 breaker 01-EP-BKR-14B1-5 from service to perform corrective maintenance. This activity de-energized Incore Neutron Flux Detector Drive 1-IC-DET-1B, Main Steam Non-return Valve 1-MS-MOV-101B, and the bypass transformer for the Technical Support Center (TSC) uninterruptible power supply (UPS).

This activity did not affect the ability of 1-MS-MOV-101B to perform its design basis accident function (i.e., mechanical closure on reverse flow). 1-IC-DET-1B and the TSC UPS are not considered in the UFSAR accident analyses. Therefore, an unreviewed safety question did not exist.

SE 94-011 — **Safety Evaluation** — 01-21-94

Safety Evaluation 94-011 was performed to evaluate the 1994 Unit 1 refueling outage schedule.

The evaluation concluded that the refueling outage schedule is acceptable based on a review of the planning, procedures, policies, shutdown risk, and monitoring management that are performed for the outage. Therefore, an unreviewed safety question does not exist.

TSR 94-014 — **Temporary Shielding Request** — 01-24-94
(Safety Evaluation 94-013)

Temporary Shielding Request 94-013 installed temporary lead shielding on certain Unit 1 reactor coolant loop lines and valves to reduce the radiation dose received by personnel while removing the resistance temperature device by-pass lines and performing other work in the area.

Installation of the shielding while the subject lines remain "operable" was determined to be acceptable through the performance of seismic piping analyses, provided the pressure and temperature do not exceed 385 psi and 400° F. The shielding will not adversely affect the design functions of the affected system and will be removed prior to exceeding the specified operating conditions. Therefore, an unreviewed safety question does not exist.

FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: January, 1994

TSR 94-017 **Temporary Shielding Request** 01-24-94
(Safety Evaluation 94-012)

Temporary Shielding Request 94-017 installed temporary lead shielding on the elbows of three Unit 1 Safety Injection system accumulator discharge lines to reduce the radiation dose received by personnel while working in the area.

Installation of the shielding while the subject lines remain "operable" was determined to be acceptable through the performance of seismic and deadweight piping analyses. The shielding will not adversely affect the design functions of the affected system and will be removed prior to Unit start-up. Therefore, an unreviewed safety question does not exist.

SE 94-017 **Safety Evaluation** 01-26-94

Safety Evaluation 94-017 was performed to evaluate the acceptability of using the existing inflatable cavity seal (which had exceeded the nominal service life specified by the manufacturer) during the 1994 Unit 1 refueling outage. This action became necessary when an inspection of the new inflatable cavity seal revealed unacceptable defects in the vulcanized joints.

The evaluation concluded that it is acceptable to use the existing inflatable cavity seal since it was inspected and found to be in good condition and it will be tested to ensure seal integrity prior to flooding the reactor cavity. The inflatable cavity seal is nonsafety-related and is a back-up to the J-seal, which is the primary method for controlling reactor cavity leakage. Therefore, an unreviewed safety question does not exist.

FS 94-03 **UFSAR Change** 01-28-94
(Safety Evaluation 94-018)

Updated Final Safety Analysis Report Change 94-03 revised Section 2.3.1.2.2, "Hurricane Flooding", to clarify that the Emergency Service Water (ESW) Pumphouse door seal plates and the exterior louver covers are not required to be completely watertight.
An engineering evaluation determined that the subject flood protection devices are required only to limit the leakage of water into the ESW Pumphouse in order to maintain the ESW pump diesel engines in an operable condition. This change did not involve any physical modifications and did not affect the margin of safety or the Technical Specifications. Therefore, an unreviewed safety question did not exist.

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

MONTH/YEAR: January, 1994

1-TMOP-EPH-001 — **Temporary Maintenance Operating Procedure** — 01-20-94
(Safety Evaluation No. 94-008)

Temporary Maintenance Operating Procedure 1-TMOP-EPH-001, "Unit 1 34.5 KV Bus 6 and RSS Transformer C Outage" was developed to provide instructions for conducting an outage of 34.5 KV Bus No. 6 and Reserve Station Service Transformer (RSST) "C". The bus and RSST outage is required to enable the replacement of the Bus No. 6 disconnect insulators and to implement Design Change Package 93-078, "EP Switchyard Reliability Assessment Modification".

This procedure provides for a controlled reliable electric plant line-up that is allowed by the UFSAR and Technical Specifications. Unit 1 will be at cold shutdown and in a backfeed line-up. Unit 2 will enter the appropriate Technical Specification Limiting Condition for Operation since the primary power supply to Emergency Bus 2J will not be available. The emergency diesel generators will remain operable during this procedure. Therefore, an unreviewed safety question does not exist.

1-FDTP-92-64-3-1
2-FDTP-92-64-3-1 — **Final Design Test Procedure** — 01-25-94
(Safety Evaluation No. 94-016)

Final Design Test Procedures 1/2-FDTP-92-64-3-1, were developed to provide instructions for performing an integrated functional test and verification of operability of the Unit 1 and 2 charging pumps following the completion of Design Change Package 92-64, "Charging Pump Logic Modifications".

The test does not affect the charging system and will be performed while the Unit is at refueling shutdown (when the charging pumps are not required). Therefore, an unreviewed safety question does not exist.

TOP-4031 — **Temporary Operating Procedure** — 01-29-94
(Safety Evaluation No. 94-019A)

Temporary Operating Procedure TOP-4031, "Installation and Removal of PDTT to Seal Return Jumpers", was developed to provide instructions for temporarily installing approximately 25 feet of hose from the Unit 1 Primary Drains Transfer Tank to the reactor coolant pump seal return line in order to recover reactor coolant leakage past a loop stop valve.

The jumper hose will be tested prior to use at a pressure that is greater than the system pressure to which it will be exposed. The installation will be monitored periodically to ensure any degradation is promptly identified. The procedure will be performed while the Unit is at cold shutdown and will not impact the operation of the Residual Heat Removal system. Therefore, an unreviewed safety question does not exist.

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

MONTH/YEAR: January, 1994

1-OPT-EG-001 **Operations Periodic Test Procedures** 01-31-94
(Safety Evaluation No. 94-021)

Operations Periodic Test Procedure 1-OPT-EG-001, "No. 1 Emergency Diesel Generator Monthly Start Exercise Test", was temporarily revised to provide instructions for installing a temporary bypass (or kill) switch to block the start signal to the primary fuel oil transfer pump. This modification was necessary to facilitate testing of the backup fuel oil transfer pump.

The procedure will be performed while Unit 1 is at cold shutdown and Emergency Diesel Generator (EDG) No. 1 is out of service. Post maintenance testing will be performed to ensure the operability of EDG No. 1 prior to returning it to service. Therefore, an unreviewed safety question does not exist.

TESTS AND EXPERIMENTS THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: January, 1994

None during this reporting period.

CHEMISTRY REPORT

MONTH/YEAR: January, 1994

Primary Coolant Analysis	Unit No. 1			Unit No. 2		
	Max.	Min.	Avg.	Max.	Min.	Avg.
Gross Radioactivity, µCi/ml	8.54E-1	1.06E-2	2.82E-1	1.67E-1	3.26E-2	1.18E-1
Suspended Solids, ppm	≤ 0.1	≤ 0.1	≤ 0.1	≤ 0.1	≤ 0.1	≤ 0.1
Gross Tritium, µCi/ml	5.28E-2	5.13E-2	5.19E-2	4.92E-1	4.22E-1	4.53E-1
I^{131}, µCi/ml	2.28E-1	1.06E-3	3.15E-2	1.68E-4	2.79E-5	8.97E-5
I^{131}/I^{133}	0.34	0.22	0.28	0.18	0.06	0.09
Hydrogen, cc/kg	38.9	3.4	23.9	44.9	35.4	40.6
Lithium, ppm	0.81	0.69	0.75	2.34	2.08	2.21
Boron - 10, ppm*	460.8	0.2	146.6	203.6	186.6	194.0
Oxygen, (DO), ppm	5.5	≤0.005	1.93	≤ 0.005	≤0.005	≤ 0.005
Chloride, ppm	≤ 0.050	≤0.001	0.003	≤ 0.050	0.006	0.010
pH at 25 degree Celsius	9.12	4.40	6.34	6.45	6.22	6.35

* Boron - 10 = Total Boron x 0.196

Comments:

None

FUEL HANDLING
UNITS 1 & 2

MONTH/YEAR: January, 1994

New or Spent Fuel Shipment Number	Date Stored or Received	Number of Assemblies per Shipment	Assembly Number	ANSI Number	Initial Enrichment	New or Spent Fuel Shipping Cask Activity
CASTOR V/21 500-11-018	01/19/94	N/A	D40	LM00CC	3.325	N/A
			6A1	LM04UQ	3.393	
			W14	LM040E	3.203	
			4A4	LM04UC	3.393	
			D35	LM008J	3.325	
			D36	LM007Y	3.325	
			D01	LM007M	3.325	
			D15	LM008C	3.325	
			D51	LM0079	3.325	
			W15	LM040G	3.203	
			1A0	LM04TT	2.901	
			D03	LM008M	3.325	
			D45	LM00CB	3.325	
			D52	LM007H	3.325	
			D04	LM007C	3.325	
			D09	LM0088	3.325	
			W03	LM040S	3.203	
			D16	LM008A	3.325	
			D18	LM0086	3.325	
			D21	LM0071	3.325	
			D26	LM007A	3.325	

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

MONTH/YEAR: January, 1994

None during this reporting period.