VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION
MONTHLY OPERATING REPORT
REPORT NO. 98-08

Approved: _____ 9.15.98
Site Vice President Date

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OPERATING DATA REPORT

Docket No.: 50-280
Date: 09/03/98
Completed By: D. L. Slade
Telephone: (757) 365-2246

1. Unit Name: ..... Surry Unit 1
2. Reporting Period: ..... August, 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	5831.0	225215.0
12.	Hours Reactor Was Critical	744.0	5160.6	159186.4
13.	Reactor Reserve Shutdown Hours	0.0	0.0	3774.5
14.	Hours Generator On-Line	744.0	5127.9	156727.4
15.	Unit Reserve Shutdown Hours	0.0	0.0	3736.2
16.	Gross Thermal Energy Generated (MWH)	1893429.7	12995546.0	369240561.6
17.	Gross Electrical Energy Generated (MWH)	623132.0	4320748.0	121136502.0
18.	Net Electrical Energy Generated (MWH)	602931.0	4175464.0	115409685.0
19.	Unit Service Factor	100.0%	87.9%	69.6%
20.	Unit Availability Factor	100.0%	87.9%	71.2%
21.	Unit Capacity Factor (Using MDC Net)	101.2%	89.4%	65.8%
22.	Unit Capacity Factor (Using DER Net)	102.8%	90.9%	65.0%
23.	Unit Forced Outage Rate	0.0%	7.9%	14.5%

24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):
Refueling, October 19, 1998, 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):

	FORECAST	ACHIEVED
INITIAL CRITICALITY		
INITIAL ELECTRICITY		
COMMERCIAL OPERATION		

OPERATING DATA REPORT

Docket No.: 50-281
Date: 09/02/98
Completed By: D. L. Slade
Telephone: (757) 365-2246

1. Unit Name:..... Surry Unit 2
2. Reporting Period:..... August, 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	5831.0	222096.0
12.	Hours Reactor Was Critical	744.0	5831.0	156981.3
13.	Reactor Reserve Shutdown Hours	0.0	0.0	328.1
14.	Hours Generator On-Line	744.0	5831.0	154964.5
15.	Unit Reserve Shutdown Hours	0.0	0.0	0.0
16.	Gross Thermal Energy Generated (MWH)	1892268.7	14825439.6	366359006.9
17.	Gross Electrical Energy Generated (MWH)	623845.0	4937780.0	120063388.0
18.	Net Electrical Energy Generated (MWH)	604167.0	4774896.0	114418047.0
19.	Unit Service Factor	100.0%	100.0%	69.8%
20.	Unit Availability Factor	100.0%	100.0%	69.8%
21.	Unit Capacity Factor (Using MDC Net)	101.4%	102.2%	65.9%
22.	Unit Capacity Factor (Using DER Net)	103.1%	103.9%	65.4%
23.	Unit Forced Outage Rate	0.0%	0.0%	11.5%

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: August, 1998

Docket No.: 50-280
Unit Name: Surry Unit 1
Date: 08/03/98
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

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: August, 1998

Docket No.: 50-281
Unit Name: Surry Unit 2
Date: 08/03/98
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

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: 09/03/98
Completed by: J C. Steinert
Telephone: (757) 365-2837

MONTH: August, 1998

Day	Average Daily Power Level (MWe - Net)	Day	Average Daily Power Level (Mwe - Net)
1	799	17	813
2	804	18	811
3	813	19	813
4	812	20	814
5	812	21	813
6	812	22	812
7	808	23	811
8	804	24	811
9	803	25	810
10	814	26	812
11	807	27	813
12	814	28	802
13	814	29	811
14	815	30	810
15	814	31	807
16	814		

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: 09/03/98
Completed by: J. C. Steinert
Telephone: (757) 365-2837

MONTH: August, 1998

Day	Average Daily Power Level (Mwe - Net)	Day	Average Daily Power Level (MWe - Net)
1	816	17	811
2	817	18	810
3	810	19	812
4	807	20	811
5	817	21	813
6	813	22	799
7	818	23	781
8	817	24	817
9	815	25	815
10	815	26	817
11	813	27	819
12	812	28	817
13	811	29	805
14	812	30	813
15	812	31	818
16	811		

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: August, 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:

08/01/98	0000	Unit operating at 100% power, 840 MWe.
08/31/98	2400	Unit operating at 100% power, 840 MWe.

UNIT TWO:

08/01/98	0000	Unit operating at 100% power, 845 MWe.
08/31/98	2400	Unit operating at 100% power, 845 MWe.

FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: August, 1998

DCP 92-052 — **Design Change Package** — 08/19/98
(Safety Evaluation 94-129)

DCP 92-052, "Station Black-out Diesel Installation," installed the Alternate Alternating Current (AAC) diesel generator and its associated systems as an alternate AC power source for Station Black-out (SBO) for Units 1 & 2.

FS 98-08
FS 98-019 — **UFSAR Change Request** — 08/13/98
(Safety Evaluation 98-033, Rev. 1)
Safety Evaluation 98-033, Rev .1, evaluated the ability of the Recirculation Spray 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 flows. This safety evaluation assessed the effect of this change upon existing accident analyses. UFSAR Change Requests FS 98-08 and FS 98-019 were prepared to incorporate the evaluation into the affected UFSAR sections to account for the diverted flow impact until the flow through the vents and drains is reduced and Outside RS minimum flow is restored to the value used in the core uprate analysis.

TM S1-98-011 — **Temporary Modification** — 08/06/98
(Safety Evaluation 98-077)

Temporary Modification S1-98-011 was used to remove the logic section of the Main Control Room Ventilation System Panel (VSP) Annunciator Panel and relocate the logic panel to a temporary support for work associated with a design change package.

TM S2-98-004 — **Temporary Modification** — 08/06/98
(Safety Evaluation 98-078)

Temporary Modification S2-98-004 was used to lift a lead and install a temporary cooling fan on the pressurizer proportional heater panel located in the upper cable vault. The temporary modification will be used to ensure that pressurizer proportional heaters do not reduce to a minimum output insufficient to maintain RCS pressure due to failure of one or both internal panel fans.

FS 98-019 — **UFSAR Change Request** — 08/13/98
(Safety Evaluation 98-079)

UFSAR Change Request FS 98-019 contains a list of several items that needed to be corrected or enhance in the UFSAR sections that discuss Surry's Recirculation Spray System. These changes were needed as a result of the Integrated Configuration Management Project and consist of grammatical and system description clarifications.

FS 98-021 — **UFSAR Change Request** — 08/13/98
(Safety Evaluation 98-080)

UFSAR Change Request FS 98-021 ensures that the appropriate water holdup effects enumerated in the supporting calculation are incorporated into the net positive suction head analysis basis for the inside and outside recirculation spray, and low head safety injection pumps.

FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: August, 1998

FS 98-015 **UFSAR Change Request** 08/13/98
(Safety Evaluation 98-081)

UFSAR Change Request FS 98-019 contains a list of several items that needed to be corrected or enhance in the UFSAR sections that discuss Surry's Safety Injection System as a result of the Integrated Configuration Management Project and consist of grammatical and system description clarifications.

SE 98-083 **Safety Evaluation** 08/13/98
(Safety Evaluation 98-083)

Safety Evaluation 98-083 assessed the inoperability of area radiation monitors for being out of service for greater than thirty days to ensure that there were no unreviewed safety questions. The major issues considered were the capability to detect reactor coolant system leakage inside containment, to monitor containment radiation following a loss of coolant accident, and to mitigate the consequences of a fuel handling accident inside containment.

TM S2-98-005 **Temporary Modification** 08/13/98
(Safety Evaluation 98-085)

Temporary Modification S2-98-005 was to replace an alleyway subsurface drain pump with a history of tripping on thermal overload due to binding from sand buildup in the pump. A different design of pump was used to replace the original to eliminate the effects of the sand.

TM S2-98-006 **Temporary Modification** 08/26/98
(Safety Evaluation 98-090)

Temporary Modification S2-98-006 was required to replace a failed relay in a consequence limiting safeguards backup circuit which included jumpers to maintain circuit continuity and defeating the train "B" HI-CLS trip signal to train "B" safety injection (SI). All work will be performed on train "B" while train "A" will remain unaffected. Train "B" HI-CLS will provide all its output signals except for the blocked SI signal. Train "B" of SI will have all its automatic and manual trip signals except the HI-CLS trip at all times.

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

MONTH/YEAR: August, 1998

1-CAL-153
1/2-OP-RC-012
OP-10.1.1

Calibration and Operating Procedures 08/13/98
(Safety Evaluation 98-063 Rev. 1)

Calibration Procedure 1-CAL-153, "Stripper Feed Steam Heater Outlet (T-BR-103A)," and "Operating Procedures 1/2-OP-RC-012, "RDS Degas Operation," and OP-10.1.1, "Placing the Gas Stripper System in Operation," were revised to procedurally control a temporary modification to enable the operation of a non-outage gas stripper with one stripper feed steam heater and the option to place the tagged-out heater in operation for outage degassing.

2-TOP-RC-4088

Temporary Operating Procedure 08/20/98
(Safety Evaluation 98-088)

The safety evaluation and Temporary Operating Procedure, 2-TOP-RC-4088, "Securing pressurizer Proportional Heaters," were used to control and evaluate the effects of cycling the pressurizer proportional heaters off for an extended period of time. The heaters were needed to be off for the repair/replacement of the proportionate heater cabinet fan while on line. The evaluation assessed the capability of the remaining heaters to maintain RCS pressure with the proportional heaters tagged out.

TESTS AND EXPERIMENTS THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: August, 1998

None During the Reporting Period

CHEMISTRY REPORT

MONTH/YEAR: August, 1998

Primary Coolant Analysis	Unit No. 1			Unit No. 2		
	Max.	Min.	Avg.	Max.	Min.	Avg.
Gross Radioactivity, μCi/ml	4.16E-1	3.48E-1	3.80E-1	1.60E-1	1.18E-1	1.38E-1
Suspended Solids, ppm	-	-	-	-	-	-
Gross Tritium, μCi/ml	1.21E-1	8.69E-2	1.11E-1	8.26E-1	7.23E-1	7.88E-1
I^{131}, μCi/ml	6.40E-3	2.73E-3	4.85E-3	7.69E-5	3.25E-5	5.75E-5
I^{131}/I^{133}	0.68	0.28	0.48	0.11	0.05	0.08
Hydrogen, cc/kg	38.2	36.4	37.4	41.3	37.5	39.0
Lithium, ppm	1.49	0.97	1.30	2.32	2.08	2.20
Boron - 10, ppm*	36.5	17.2	26.8	134.8	118.2	126.8
Oxygen, (DO), ppm	≤0.005	≤0.005	≤0.005	≤0.005	≤0.005	≤0.005
Chloride, ppm	0.004	≤0.001	0.001	0.006	0.002	0.003
pH at 25 degree Celsius	7.59	7.22	7.34	6.99	6.53	6.73

* Boron - 10 = Total Boron x 0.196

Comments:

None

FUEL HANDLING
UNITS 1 & 2

MONTH/YEAR: August, 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
Unit 1 Batch 18 Shipment #1	08/06/98	8	12C	LM16K1	4.0895	10.49 Ci
			23C	LM16KG	4.1107	
			28C	LM16KH	4.1098	
			27C	LM16KG	4.1210	
			35C	LM16KQ	4.2478	
			36C	LM16KR	4.2526	
			46C	LM16L1	4.2697	
			32C	LM16KM	4.1099	
UNIT1 BATCH 18 SHIPMENT #2	08/11/98	12	41C	LM16KW	4.2536	15.7 Ci
			02C	LM16JR	4.1014	
			18C	LM16K7	4.1101	
			04C	LM16JT	4.1074	
			26C	LM16KF	4.1054	
			42C	LM16KX	4.2605	
			19C	LM16K8	4.1120	
			33C	LM16KN	4.2456	
			21C	LM16KA	4.1073	
			07C	LM16JW	4.0980	
			34C	LM16KP	4.2454	
			22C	LM16KB	4.1109	
UNIT 1 BATCH 18 SHIPMENT #3	08/13/98	12	25C	LM16KE	4.1122	15.61 Ci
			01C	LM16JQ	4.1014	
			30C	LM16KK	4.1107	
			03C	LM16JS	4.10920	
			24C	LM16KD	4.1097	
			38C	LM16KT	4.2532	
			16C	LM16K5	4.1025	
			15C	L;M16K4	4.1069	
			29C	LM16KJ	4.1204	

FUEL HANDLING
UNITS 1 & 2

MONTH/YEAR: August, 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
			10C	LM16JZ	4.0849	
			44C	LM16KZ	4.2627	
			17C	LM16K6	4.1047	
UNIT 1 BATCH 18 SHIPMENT #4	08/18/98	12	09C	LM16JY	4.0987	15.81 Ci
			05C	LM16JU	4.0959	
			08C	LM16JX	4.1094	
			40C	LM16KV	4.2534	
			13C	LM16K2	4.1037	
			31C	LM16KL	4.1074	
			49C	LM16L4	4.2535	
			52C	LM16L7	4.2523	
			51C	LM16L6	4.2514	
			50C	LM16L5	4.2541	
			11C	LM16K0	4.0857	
			39C	LM16KU	4.2538	
UNIT 1 BATCH 18 SHIPMENT #5	08/20/98	12	06C	LM16JV	4.1093	15.93 Ci
			14C	LM16K3	4.1053	
			20C	LM16K9	4.1078	
			37C	LM16KS	4.2538	
			43C	LM16KY	4.2681	
			45C	LM16L0	4.2626	
			47C	LM16L2	4.2698	
			48C	LM16L3	4.2588	
			53C	LM16L8	4.2542	
			54C	LM16L9	4.2552	
			55C	LM16LA	4.2541	
			56C	LM16LB	4.2520	

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

MONTH/YEAR: August, 1998

None During the Reporting Period