VIRGINIA ELECTRIC AND POWER COMPANY

SURRY POWER STATION

MONTHLY OPERATING REPORT

REPORT 87-02

APPROVED: RF Saunders
STATION MANAGER

IE24
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OPERATING DATA REPORT

DOCKET NO. 50-280
DATE Mar 4, 1987
COMPLETED BY V. H. Jones
TELEPHONE 804-357-3184

OPERATING STATUS

1. Unit Name: Surry Unit 1
2. Reporting Period: 02-01-87 to 02-28-87
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:

Notes

9. Power Level To Which Restricted, If Any (Net MWe):
10. Reasons For Restrictions, If Any:

	This Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	672.0	1416.0	124368.0
12. Number of Hours Reactor Was Critical	129.0	129.0	78674.3
13. Reactor Reserve Shutdown Hours	0	0	3774.5
14. Hours Generator On-Line	123.6	123.6	76977.9
15. Unit Reserve Shutdown Hours	0	0	3736.2
16. Gross Thermal Energy Generated (MWH)	194111.5	194111.5	178266970.0
17. Gross Electrical Energy Generated (MWH)	65620.0	65620.0	57563538.0
18. Net Electrical Energy Generated (MWH)	61106.0	61106.0	54583077.0
19. Unit Service Factor	18.4%	8.7%	61.9%
20. Unit Available Factor	18.4%	8.7%	64.9%
21. Unit Capacity Factor (Using MDC Net)	11.6%	5.5%	56.8%
22. Unit Capacity Factor (Using DER Net)	11.5%	5.5%	55.7%
23. Unit Forced Rate	0	0	17.7%

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 Startup:

26. Units In Test Status (Prior to Commercial Operation):

	Forecast	Achieved
INITIAL CRITICALITY		
INITIAL ELECTRICITY		
COMMERCIAL OPERATION		

(9/77)

OPERATING DATA REPORT

DOCKET NO. 50-281
DATE Mar. 4, 1987
COMPLETED BY V. H. Jones
TELEPHONE 804-357-3184

OPERATING STATUS

1. Unit Name: Surry Unit 2
2. Reporting Period: 02-01-87 to 02-28-87
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:

Notes

	This Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	672.0	1416.0	121248.0
12. Number of Hours Reactor Was Critical	0	0	78110.8
13. Reactor Reserve Shutdown Hours	0	0	328.1
14. Hours Generator On-Line	0	0	76840.4
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	0	0	179792473.6
17. Gross Electrical Energy Generated (MWH)	0	0	58327824.0
18. Net Electrical Energy Generated (MWH)	0	0	55285524.0
19. Unit Service Factor	0	0	63.4%
20. Unit Available Factor	0	0	63.4%
21. Unit Capacity Factor (Using MDC Net)	0	0	58.5%
22. Unit Capacity Factor (Using DER Net)	0	0	57.9%
23. Unit Forced Rate	100.0%	100.0%	13.6%

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 Startup: 03-12-87

26. Units In Test Status (Prior to Commercial Operation):

	Forecast	Achieved
INITIAL CRITICALITY		
INITIAL ELECTRICITY		
COMMERCIAL OPERATION		

(9/77)

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-280
UNIT NAME Surry 1
DATE March 4, 1987
COMPLETED BY V. H. Jones
TELEPHONE 804-357-3184

REPORT MONTH February 1987

NO.	DATE	Type[1]	Duration (Hours)	Reason[2]	Method of Shutting Down Reactor[3]	LICENSEE EVENT REPORT #	System Code[4]	Component Code[5]	CAUSE & CORRECTIVE ACTION TO PREVENT RECURRENT
86-09	12-10-86	S	548.4	H	1				The decision was made to perform the scheduled Snubber/Maintenance outage early in order to allow a precautionary Main Feedwater piping inspection as a result of pipe rupture in Unit #2.

1 F: Forced
S: Scheduled

2 Reason:
A - Equipment Failure (Explain)
B - Maintenance or Test
C - Refueling
D - Regulatory Restriction
E - Operator Training & License Examination
F - Administrative
G - Operational Error (Explain)
H - Other (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

(9/77)

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-281
UNIT NAME Surry II
DATE March 4, 1987
COMPLETED BY V. H. Jones
TELEPHONE (804) 357-3184

REPORT MONTH February 1987

NO.	DATE	Type[1]	Duration (Hours)	Reason[2]	Method of Shutting Down Reactor[3]	LICENSEE EVENT REPORT #	System Code[4]	Component Code[5]	CAUSE & CORRECTIVE ACTION TO PREVENT RECURRENT
86-07	12-09-86	F	672.0	A	3	LER-86/020			Unit remains shutdown for piping replacement.

1 F: Forced
S: Scheduled

2 Reason:
A - Equipment Failure (Explain)
B - Maintenance or Test
C - Refueling
D - Regulatory Restriction
E - Operator Training & License Examination
F - Administrative
G - Operational Error (Explain)
H - Other (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

(9/77)

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-280
UNIT Surry 1
DATE Mar. 4, 1987
COMPLETED BY V. H. Jones
TELEPHONE (804) 357-3184

MONTH February 1987

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	0	17	0
2	0	18	0
3	0	19	0
4	0	20	0
5	0	21	0
6	0	22	0
7	0	23	14
8	0	24	177
9	0	25	313
10	0	26	497
11	0	27	753
12	0	28	793
13	0		
14	0		
15	0		
16	0		

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.

(9/77)

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-281
UNIT Surry II
DATE Mar. 4, 1987
COMPLETED BY V. H. Jones
TELEPHONE (804) 357-3184

MONTH February 1987

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	0	17	0
2	0	18	0
3	0	19	0
4	0	20	0
5	0	21	0
6	0	22	0
7	0	23	0
8	0	24	0
9	0	25	0
10	0	26	0
11	0	27	0
12	0	28	0
13	0		
14	0		
15	0		
16	0		

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.

(9/77)

SUMMARY OF OPERATING EXPERIENCE

MONTH/YEAR FEBRUARY 1987

Listed below in 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

02-01-87	0000	This reporting period begins with the unit at CSD on RHR with "C" RCP running.
02-13-87	0434	RCS > 200°F.
	1505	Commenced RCS cooldown, due to U-2 charging pump service water supply line 00S.
	1940	RCS < 200°F.
02-21-87	1515	RCS > 200°F.
02-22-87	0220	RCS > 350°F, 450 psig.
	2156	RCS at HSD.
02-23-87	1457	Reactor is critical.
	2025	Generator on line.
	2135	Unit at 30% power, 205 MW's, holding for chemistry.
02-25-87	1107	Commenced power increase at 100 MW/hr.
	1500	Holding power at 60%, 480 MW's for chemistry.
02-26-87	2147	Commenced power increase.
	2310	Holding power at 87%, 740 MW's to allow cleaning of CP strainers.
02-27-87	0830	Commenced power increase at 50 MW/hr.
	1120	Holding power at 97%, 800 MW's for CP strainers.
	1930	Slowly increasing power to 100 %.
	2020	Unit at 100%, 835 MW's.
02-28-87	2400	This reporting period ends with the Unit at 100%, 835 MW's.

UNIT TWO

02-01-87	0000	This reporting period begins with the unit at CSD on RHR.
02-28-87	2400	This reporting period ends with the unit at CSD on RHR.

FACILITY CHANGES REQUIRING NRC APPROVAL

MONTH/YEAR FEBRUARY 1987

NONE DURING THIS PERIOD

FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR FEBRUARY 1987

UNIT

DC 81-103 **Class IE Solenoid Operated Valve Replacement** 1

This design change removed certain solenoid operated valves (SOV's) whose qualifications have not been demonstrated to be adequate. These valves were replaced with equivalent SOV's which have adequately demonstrated environmental qualification.

This design change was previously reported in September 1983. However, additional valves were added to the scope of the design change and is therefore reported a second time.

Summary of Safety Analysis

The modification will provide additional assurance that the SOV's will perform their intended safety function during and following any postulated LOCA or HELB accident.

DC 83-39A **Appendix "R" Emergency Diesel Generator Mods** 1

This design change relocated existing relays and added a transfer switch, metering and control and indication for circuit breakers and diesel engines in the EDG room. This will permit operation of the EDG from the EDG room in the event of a control room evacuation.

Summary of Safety Analysis

This design change increases the availability of the EDG control circuits following a fire. The transfer switch is key locked and alarmed to prevent unauthorized actuation. The modification will not reduce the capacity, method of operation, or design basis of safety related equipment for any postulated accident.

FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR FEBRUARY 1987

UNIT

DC 85-02 **Containment Gas and Particulate Monitor System** 1

The containment gas and particulate monitors have a history of malfunctioning which results in erroneous readings, tripping the containment purge system. Also, the pump is located inside the containment which causes a maintenance problem if there is a pump failure during power operation. The existing monitor will be replaced with a new monitor installed in approximately the same location. The new monitor has an integral sample pump, thereby making it accessible for any required maintenance. The existing pump will be removed.

The new monitor employs a state-of-the-art moving particulate filter. This filter will eliminate the inleakage problems, filter failures and will also minimize filter changes in comparsion to a fixed filter.

Summary of Safety Analysis

The function of the containment gas and particulate monitor system is not being altered by this design change. In fact, the replacement of the monitor will increase the reliability of the readings provided by this system. The relocation of the pump from inside containment to the auxiliary building will make this portion of the system more accessible for maintenance in addition to further reducing the exposure to personnel conducting routine maintenance activities to this equipment.

This design modification will neither replace or modify any safety system. The pump will not create a hazard to any safety related equipment in its new location during a seismic event. The containment gas and particulate monitor system will remain operational during refueling operations as specified in Technical Specification 3.10. Therefore, this design modification will not impact the function of the containment purge isolation system or any other systems during construction or post-construction phases.

FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR FEBRUARY 1987

UNIT

DC 85-03 **Containment Gas and Particulate Monitor System** 2

The containment gas and particulate monitors have a history of malfunctioning which results in erroneous readings, tripping the containment purge system. Also, the pump is located inside the containment which causes a maintenance problem if there is a pump failure during power operation. The existing monitor will be replaced with a new monitor installed in approximately the same location. The new monitor has an integral sample pump, thereby making it accessible for any required maintenance. The existing pump will be removed.

The new monitor employs a state-of-the-art moving particulate filter. This filter will eliminate the inleakage problems, filter failures and will also minimize filter changes in comparsion to a fixed filter.

Summary of Safety Analysis

The function of the containment gas and particulate monitor system is not being altered by this design change. In fact, the replacement of the monitor will increase the reliability of the readings provided by this system. The relocation of the pump from inside containment to the auxiliary building will make this portion of the system more accessible for maintenance in addition to further reducing the exposure to personnel conducting routine maintenance activities to this equipment.

This design modification will neither replace or modify any safety system. The pump will not create a hazard to any safety related equipment in its new location during a seismic event. The containment gas and particulate monitor system will remain operational during refueling operations as specified in Technical Specification 3.10. Therefore, this design modification will not impact the function of the containment purge isolation system or any other systems during construction or post-construction phases.

FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR FEBRUARY 1987

UNIT

DC 84-38 **HPSI Flow Transmitter and VCT Level Transmitters Modification** 1

This design change added two transmitters for redundant measurements of total cold leg SI flow and total hot leg SI flow. The two VCT transmitters were replaced with EQ qualified transmitters and relocated to outside the VCT cubicle for ALARA purposes.

Summary of Safety Analysis

The new transmitters are environmentally and seismically qualified. Installation does not affect any safety equipment or the operation of safety systems.

DC 84-39 **HPSI Flow Transmitter and VCT Level Transmitters Modification** 2

This design change added two transmitters for redundant measurements of total cold leg SI flow and total hot leg SI flow. The two VCT transmitters were replaced with EQ qualified transmitters and relocated to outside the VCT cubicle for ALARA purposes.

Summary of Safety Analysis

The new transmitters are environmentally and seismically qualified. Installation does not affect any safety equipment or the operation of safety systems.

DC 84-54 **Snubber Replacement and Elimination** 1

This design change removed some snubbers, replaced snubbers with a different type, replaced snubbers with rigid struts and reworked same snubbers. This was to eliminate potential problems, high costs for snubber maintenance and testing, and significant ALARA problems associated with maintenance and testing.

Summary of Safety Analysis

These modifications do not affect any aspect of the systems other than seismic support of the piping. The modifications do not result in pipe stress or support or nozzle loads in excess of the Designs Basis seismic allowables for the affected lines.

FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR FEBRUARY 1987

UNIT

DC 85-15 **Boron Evaporator Feedwater Demineralizer Modification** 1 & 2

This design change involved the installation of valves and piping to permit processing the boron evaporator feedwater through demineralizers prior to the evaporators to lower radiation levels. The existing boron clean Ion exchangers, I-BR-I-2A and 1-BR-I-2B are utilized as the new boron evaporator feedwater demineralizers.

Summary of Safety Analysis

The system is not safety-related and is not a part of the Technical Specifications. The piping cross-connects do not modify or alter existing safety-related equipment or systems.

TESTS AND EXPERIMENTS REQUIRING NRC APPROVAL

MONTH/YEAR FEBRUARY 1987

NONE DURING THIS PERIOD

TESTS AND EXPERIMENTS THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR FEBRUARY 1987

NONE DURING THIS PERIOD

OTHER CHANGES, TEST AND EXPERIMENTS

MONTH/YEAR FEBRUARY 1987

NONE DURING THIS PERIOD

VIRGINIA POWER
SURRY POWER STATION
CHEMISTRY REPORT

FEBRUARY 19 87

PRIMARY COOLANT ANALYSIS	UNIT NO. 1			UNIT NO. 2		
	MAX.	MIN.	AVG.	MAX.	MIN.	AVG.
Gross Radioact., uCi/ml	8.15^{-1}	2.94^{-3}	7.46^{-2}	3.43^{-2}	3.56^{-3}	1.11^{-2}
Suspended Solids, ppm	0.0	0.0	0.0	0.0	0.0	0.0
Gross Tritium, uCi/ml	4.56^{-1}	4.56^{-1}	4.56^{-1}	(B)	(B)	(B)
Iodine^{131}, uCi/ml	3.53^{-3}	$\leq 9.74^{-5}$	1.42^{-3}	(B)	(B)	(B)
I^{131} / I^{131}	(A)	(A)	(A)	(B)	(B)	(B)
Hydrogen, cc/kg	44.3	33.3	38.2	(B)	(B)	(B)
Lithium, ppm	2.24	0.56	1.38	(C)	(C)	(C)
Boron-10, ppm*	496	166	332	414	396	405
Oxygen, (DO), ppm	≤0.005	≤ 0.005	≤ 0.005	0.700	≤0.005	≤0.085
Chloride, ppm	0.010	≤ 0.001	0.008	≤0.010	≤0.001	0.007
pH @ 25 degree Celsius	6.53	5.63	5.89	5.82	5.69	5.55

* Boron-10 = Total Boron X 0.196

REMARKS: Unit 1 - 3745 grams of LiOH added in February. (A) Test not required, unit not at stable power for 48 hours.

Unit 2 - No LiOH added in February. (B) Test not required when reactor not critical. (C) Lithium not required, unit temperature is less than 180°F for February.

UNIT 1 FUEL HANDLING DATE February 1987

NEW OR SPENT FUEL SHIPMENT #	DATE SHIPPED OR RECEIVED	NUMBER OF ASSEMBLIES PER SHIPMENT	ASSEMBLY #	ANSI #	INITIAL ENRICHMENT	NEW OR SPENT FUEL SHIPPING CASK ACTIVITY LEVEL

NONE DURING THIS PERIOD

UNIT 2 FUEL HANDLING DATE February 1987

NEW OR SPENT FUEL SHIPMENT #	DATE SHIPPED OR RECEIVED	NUMBER OF ASSEMBLIES PER SHIPMENT	ASSEMBLY #	ANSI #	INITIAL ENRICHMENT	NEW OR SPENT FUEL SHIPPING CASK ACTIVITY LEVEL
		NONE DURING THIS PERIOD				

PROCEDURE REVISIONS THAT CHANGED THE
OPERATING MODE DESCRIBED IN THE FSAR

MONTH/YEAR FEBRUARY 1987

NONE DURING THIS PERIOD

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

MONTH/YEAR FEBRUARY 1987

NONE DURING THIS PERIOD

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

March 16, 1987

W. L. STEWART
VICE PRESIDENT
NUCLEAR OPERATIONS

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

Serial No. 87-144
NO/PML: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 February 1987.

Very truly yours,

R. L. Hardwick Jr.

W. L. Stewart

Enclosure

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

Mr. W. E. Holland
NRC Senior Resident Inspector
Surry Power Station

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