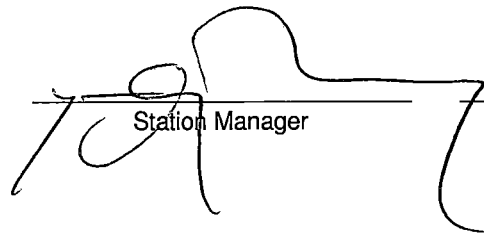


**VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION
MONTHLY OPERATING REPORT
REPORT No. 97-05**

Approved:



Station Manager

6-6-97

Date

9706180282 970612
PDR ADOCK 05000280
R PDR

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OPERATING DATA REPORT

Docket No.: 50-280
 Date: 06/02/97
 Completed By: D. K. Mason
 Telephone: (804) 365-2459

- 1. Unit Name:..... Surry Unit 1
- 2. Reporting Period:..... May, 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: _____

	<u>This Month</u>	<u>YTD</u>	<u>Cumulative</u>
11. Hours In Reporting Period.....	744.0	3623.0	214247.0
12. Number of Hours Reactor Was Critical.....	734.0	2054.1	148888.8
13. Reactor Reserve Shutdown Hours.....	0.0	0.0	3774.5
14. Hours Generator On-Line.....	653.2	1931.5	146462.5
15. Unit Reserve Shutdown Hours.....	0.0	0.0	3736.2
16. Gross Thermal Energy Generated (MWH).....	1375878.6	4566332.2	343201776.0
17. Gross Electrical Energy Generated (MWH)....	455066.0	1520321.0	112493139.0
18. Net Electrical Energy Generated.....	436890.0	1466080.0	107059829.0
19. Unit Service Factor.....	87.8%	53.3%	68.4%
20. Unit Availability Factor.....	87.8%	53.3%	70.1%
21. Unit Capacity Factor (Using MDC Net).....	73.3%	50.5%	64.3%
22. Unit Capacity Factor (Using DER Net).....	74.5%	51.4%	63.4%
23. Unit Forced Outage Rate.....	0.0%	12.9%	15.2%

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):

	<u>FORECAST</u>	<u>ACHIEVED</u>
INITIAL CRITICALITY	_____	_____
INITIAL ELECTRICITY	_____	_____
COMMERCIAL OPERATION	_____	_____

OPERATING DATA REPORT

Docket No.: 50-281
 Date: 06/02/97
 Completed By: D. K. Mason
 Telephone: (804) 365-2459

- 1. Unit Name:..... Surry Unit 2
- 2. Reporting Period:..... May, 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: _____

	<u>This Month</u>	<u>YTD</u>	<u>Cumulative</u>
11. Hours In Reporting Period.....	744.0	3623.0	211127.0
12. Number of Hours Reactor Was Critical.....	744.0	3559.0	146634.6
13. Reactor Reserve Shutdown Hours.....	0.0	0.0	328.1
14. Hours Generator On-Line.....	744.0	3552.1	144649.9
15. Unit Reserve Shutdown Hours.....	0.0	0.0	0.0
16. Gross Thermal Energy Generated (MWH).....	1890741.1	8973287.6	340447544.4
17. Gross Electrical Energy Generated (MWH)....	631260.0	3007965.0	111458764.0
18. Net Electrical Energy Generated.....	609928.0	2910396.0	106102275.0
19. Unit Service Factor.....	100.0%	98.0%	68.5%
20. Unit Availability Factor.....	100.0%	98.0%	68.5%
21. Unit Capacity Factor (Using MDC Net).....	102.3%	100.3%	64.3%
22. Unit Capacity Factor (Using DER Net).....	104.0%	101.9%	63.8%
23. Unit Forced Outage Rate.....	0.0%	2.0%	12.2%

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

Refueling, October 4, 1997, 30 Days

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

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

	<u>FORECAST</u>	<u>ACHIEVED</u>
INITIAL CRITICALITY	_____	_____
INITIAL ELECTRICITY	_____	_____
COMMERCIAL OPERATION	_____	_____

**UNIT SHUTDOWN AND POWER REDUCTION
(EQUAL TO OR GREATER THAN 20%)**

REPORT MONTH: May, 1997

Docket No.: 50-280
 Unit Name: Surry Unit 1
 Date: 06-04-97
 Completed by: M. J. Fanguy
 Telephone: (804) 365-2155

(1) Date	(2) Type	(3) Duration Hours	(4) Reason	(5) Method of Shutting Down Rx	(6) LER No.	(7) System Code	(8) Component Code	(9) Cause & Corrective Action to Prevent Recurrence
5/1/97	S	35.3	C	NA	NA	NA	NA	Refueling Outage
5/4/97	S	26.6	B	NA	NA	TA	TRB	Ramp unit off-line to perform a turbine balance shot from 28% / 170 MWe.
5/12/97	S	28.9	B	NA	NA	TA	TRB	Ramp unit off-line to perform a turbine balance shot from 58% / 490 MWe.

(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: May, 1997

Docket No.: 50-281
 Unit Name: Surry Unit 2
 Date: 06-04-97
 Completed by: M. J. Fanguy
 Telephone: (804) 365-2155

(1) Date	(1) Type	(2) Duration Hours	(2) Reason	(3) Method of Shutting Down Rx	(4) LER No.	(4) System Code	(5) Component Code	(5) 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: 06-03-97
Completed by: J. D. Kilmer
Telephone: (804) 365-2792

MONTH: May, 1997

<u>Day</u>	<u>Average Daily Power Level (MWe - Net)</u>	<u>Day</u>	<u>Average Daily Power Level (MWe - Net)</u>
1	0	17	824
2	74	18	823
3	175	19	822
4	6	20	821
5	202	21	820
6	401	22	820
7	409	23	820
8	500	24	819
9	490	25	818
10	477	26	819
11	462	27	819
12	67	28	820
13	192	29	808
14	749	30	821
15	813	31	819
16	819		

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: 06-03-97
Completed by: John D. Kilmer
Telephone: (804) 365-2792

MONTH: May, 1997

<u>Day</u>	<u>Average Daily Power Level (MWe - Net)</u>	<u>Day</u>	<u>Average Daily Power Level (MWe - Net)</u>
1	817	17	821
2	819	18	823
3	810	19	823
4	818	20	823
5	825	21	822
6	825	22	823
7	824	23	823
8	822	24	815
9	822	25	774
10	821	26	822
11	823	27	822
12	829	28	823
13	823	29	823
14	823	30	817
15	823	31	815
16	823		

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: May, 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:

05/01/97	0000	Unit 1 starts month at Hot Shutdown after refueling outage.
	0958	Reactor critical.
05/02/97	0005	Unit is stable at 2% power.
	1120	Unit is on-line.
	1210	Steam dumps closed, unit is stable at 30% power.
05/03/97	2133	Stop power increase at 33% / 235 MWe.
05/04/97	0338	Commence power decrease to take unit off-line for turbine balance shot from 28% / 170 MWe.
	0455	Unit is off-line with reactor critical.
05/05/97	0120	Unit is at 2%.
	0729	Unit is on-line.
	1510	Flux map performed at 50% power.
05/08/97	0851	Flux map performed at 70% power.
	1648	Stop power increase at 72% / 600 MWe.
	1648	Commence power decrease to reduce turbine vibrations.
	1737	Start varying power level to investigate turbine vibrations.
05/12/97	0235	Commence power decrease to perform a turbine balance shot.
	0640	Unit is off-line.
05/13/97	1137	Unit is on-line.
05/14/97	1820	Stop power increase at 98.25 / 845 MWe by management until power indication is adjusted.
05/16/97	1057	Commence power increase to 100% from 98.5% / 840 MWe.
	1143	Unit is stable at 100% / 855 MWe.
05/31/97	2400	Unit 1 finishes the month at 100% 850 MWe.

SUMMARY OF OPERATING EXPERIENCE

MONTH/YEAR: May, 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 TWO

05/01/97	0000	Unit 2 starts the month at 100% / 855 MWe.
05/24/97	2139	Initiate power decrease to 90% to attempt the seating of leaking valve 2-ES-SV-201B.
	2215	Stopped power decrease at 90% / 785 MWe, relief valve seated.
05/25/97	0627	Start power increase .
	1232	Unit is at 100% / 835 MWe.
	1903	Commence power decrease to 95% to prepare for replacement of 2-ES-SV-201B.
	1923	Stop power decrease at 95% / 785 MWe.
	2258	Commence power increase to 100%.
	2347	Stop power increase at 100% / 850 MWe.
05/31/97	2400	Unit 2 finishes the month at 100% / 850 MWe.

FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: May, 1997

SE 97-0011 **Safety Evaluation** 5-8-97

The exterior coating system on the MC-10 cask at the Surry ISFSI does not match the coating system described in the MC-10 Topical Safety Analysis Report (TSAR).

The MC-10 TSAR was reviewed to determine if the exterior coating had any impact on cask design or licensing analysis. The only potential impact identified was that the analysis of cask temperature used surface emissivity as a design input. The emissivity used for the MC-10 thermal analysis is for epoxy enamel paint. The Keeler & Long topcoat used on the MC-10 cask at the Surry ISFSI is an epoxy enamel. Therefore the emissivity used in the MC-10 thermal analysis is correct for the cask in service and an unreviewed safety question does not exist.

FS 97-022 **Updated Final Safety Analysis Report Change** 5-12-97
(Safety Evaluation 97-071)

Updated Final Safety Analysis Report Change FS 97-22 revised Section 9.12.5.4, "Reassembly Sequence," to match the actual sequence performed by plant operations for the reassembly sequence of the Reactor Vessel following refueling.

The change to the fuel handling practices, as described in the UFSAR, are only in the order in which the activities are performed. These changes reflect current fuel handling practices which have been SNSOC approved and have been proven to be safe and successful. Therefore, an unreviewed safety question does not exist.

TM S1-97-008 **Temporary Modification** 5-13-97
(Safety Evaluation No. 97-072)

This Temporary Modification (TM) installs a jumper in the turbine turning gear motor start circuitry. This will allow the operation of the turbine turning gear with bearing lift pressure less than 850 psig.

The installation of the jumper is on non-safety related equipment designed for the protection of the turbine. Sufficient oil pressure was available to prevent damage to the turbine bearings. Installation of this jumper can not feed into safety related circuits or control circuits which would affect safety related equipment. The turbine is off-line during this installation and the unit is below the P-7 permissive, therefore failure of this jumper would not cause a reactor trip by turbine trip. Therefore, an unreviewed safety question does not exist.

TM-S1-97-10 **Temporary Modification** 5-28-97
(Safety Evaluation 97-074)

The purpose of this Temporary Modification (TM) is to troubleshoot the Unit 1 Containment Sump level loop by installing a recorder to monitor the Sump level. The Containment Sump level loop is not safety related. The installation of the monitor will not affect indication in the Main Control Room nor will it affect the start circuitry of the Containment Sump Pumps. A failure of the TM may cause an inadvertent start or stop of the Containment Sump Pumps; however, such a failure will not affect equipment assumed to be available in any of the accidents analyzed in Chapter 14 of the UFSAR. Therefore, an unreviewed safety question does not exist.

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

MONTH/YEAR: May, 1997

1-OSP-EG-001
1-MOP-EG-001

**Operations Surveillance Procedure
Maintenance Operating Procedure**
(Safety Evaluation 97-068)

5-2-97

Maintenance Operating Procedure 1-MOP-EG-001, "Number 1 Emergency Diesel Generator Systems Removal From Service" was revised to allow the option for the Alarm System Circuit Breaker and the DC Control Circuit Breaker to remain energized. Using this option allows the testing of the alarm circuits for the Number 1 Emergency Diesel Generator (EDG) using the new Operations Surveillance Procedure 1-OSP-EG-001, "Number 1 Emergency Diesel Generator Local Alarm Panel Functional Test."

The starting systems for the Number 1 EDG will be removed from service preventing an Auto Start and applicable Technical Specification 3.16 action statements will be entered. The Number 1 EDG will have a procedurally controlled jumper installed to simulate alarms. The Main Control Room Annunciator System will receive alarm signals generated during the performance of this test. These alarms are normal inputs to this system and will not create an operational or safety concern. Therefore, an unreviewed safety question does not exist.

0-TMOP-RI-3035

Temporary Maintenance Operating Procedure
(Safety Evaluation 97-069)

5-8-97

Temporary Maintenance Operating Procedure 0-TMOP-RI-3035, "Removal and Return to Service of the WD and Boron Recovery Annunciator Panels," has been developed to provide operational guidance on compensatory measures that must be invoked while these annunciators are out of service for required maintenance.

Required equipment is declared inoperable and appropriate compensatory measures as required by TS or VPAP-2802 are implemented. UFSAR Chapter 14 accidents analyses were reviewed and no credit is taken for the affected annunciators to mitigate the consequences of any analyzed accident. Additionally, increased monitoring assures that the equipment will continue to operate satisfactorily. Therefore, an unreviewed safety question does not exist.

1-IPT-CC-RC-F-435
Rev 5

Instrument Periodic Test Procedure
(Safety Evaluation 97-070)

5-8-97

Instrument Periodic Test Procedure 1-IPT-CC-RC-F-435, "Reactor Coolant Flow Loop F-1-435 Channel Calibration," was revised as a One Time Only PAR. Channel 2 was inoperable and placed in trip. The One Time Only PAR performed steps which allowed the channel to be bypassed. Technical Specification (TS) 3.7 allows an inoperable RCS flow channel to be bypassed for 4 hours for surveillance testing. Placing Channel 2 in bypass allows the surveillance testing for channels 1 and 3 of the Unit 1 'C' Loop RCS flow channels to be completed in accordance with the requirements of Technical Specification 4.1.

TS compliance is maintained during this evolution. No other RCS flow channels are affected. The other two channels provide the trip function should it be required. Therefore, an unreviewed safety question does not exist.

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

MONTH/YEAR: May, 1997

2-OP-RC-001

Operating Procedure
(Safety Evaluation 97-073)

5-22-97

Operating Procedure 2-OP-RC-001, "Starting and Running Any Reactor Coolant Pump," was revised to install the RCP speed sensing circuit supervisory relay paddle plugs prior to an RCP start and remove the paddle plugs following the start for a continuous RCP run. Additionally, the Pro-Star Motor Protection System start block LEDs will be verified as cleared prior to disconnecting the supervisory relay paddle plugs. This change will prevent a spurious RCP trip during a Station Service to Reserve Station Service power supply auto transfer during a Unit trip.

The RCP speed sensing circuit does not provide a safety related function. It merely defeats the RCP starting overcurrent trip during the start-up of the pump. Once the RCP has started and is operating at its normal speed and current, the circuit will be defeated. All other protection functions for the RCP that are required during normal pump operation will not be defeated. Therefore, an unreviewed safety question does not exist.

0-OP-VS-15

Operating Procedure
(Safety Evaluation 97-075)

5-31-97

Operating Procedure 0-OP-VS-15, "Normal Switchgear Room Ventilation Systems," was revised to procedurally control the use of spot coolers as a Temporary Modification (TM). Spot coolers are used in the Unit 1 and 2 Rod Control Power Cabinets if the cabinets normal ventilation fails. The spot coolers are used to ensure the maximum sustained temperature inside the Rod Control Power Cabinets does not exceed 77 °F.

The installation of the TM does not affect the function or operation of the Rod Control Power Cabinets, does not affect safety related equipment or power supplies and does not affect any Technical Specification basis or condition of operation. Therefore, an unreviewed safety question does not exist.

TESTS AND EXPERIMENTS THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: May, 1997

None During the Reporting Period

CHEMISTRY REPORT

MONTH/YEAR: May, 1997

Primary Coolant Analysis	Unit No. 1			Unit No. 2		
	Max.	Min.	Avg.	Max.	Min.	Avg.
Gross Radioactivity, $\mu\text{Ci/ml}$	3.51E-1	1.21E-3	2.07E-1	2.60E-1	1.59E-1	2.02E-1
Suspended Solids, ppm	0.025	0.025	0.025	-	-	-
Gross Tritium, $\mu\text{Ci/ml}$	1.81E-1	5.93E-2	8.96E-2	4.42E-1	3.78E-1	4.19E-1
^{131}I , $\mu\text{Ci/ml}$	3.88E-4	8.74E-6	1.45E-4	6.48E-5	2.65E-5	4.98E-5
$^{131}\text{I}/^{133}\text{I}$	0.09	0.05	0.07	0.10	0.04	0.07
Hydrogen, cc/kg	39.5	29.7	31.9	32.3	26.9	30.0
Lithium, ppm	3.64	2.23	2.81	2.33	2.07	2.19
Boron - 10, ppm*	380.6	258.5	312.1	132.5	114.1	123.0
Oxygen, (DO), ppm	≤ 0.005	≤ 0.005	≤ 0.005	≤ 0.005	≤ 0.005	≤ 0.005
Chloride, ppm	0.007	0.004	0.005	0.004	0.003	0.003
pH at 25 degree Celsius	6.14	5.58	5.88	6.76	6.27	6.53

* Boron - 10 = Total Boron x 0.196

Comments:

None

**FUEL HANDLING
UNITS 1 & 2**

MONTH/YEAR: May, 1997

<u>New Fuel Shipment or Cask No.</u>	<u>Date Stored or Received</u>	<u>Number of Assemblies per Shipment</u>	<u>Assembly Number</u>	<u>ANSI Number</u>	<u>Initial Enrichment</u>	<u>New or Spent Fuel Shipping Cask Activity</u>
--	------------------------------------	--	----------------------------	------------------------	-------------------------------	---

No Fuel Received or Stored During the Reporting Period

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

MONTH/YEAR: MAY, 1997

None During the Reporting Period