

VIRGINIA ELECTRIC AND POWER COMPANY  
RICHMOND, VIRGINIA 23261

June 17, 1991

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

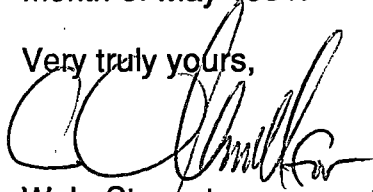
Serial No. 91-326  
NO/RPC:vlh  
Docket Nos. 50-280  
50-281  
License Nos. DPR-32  
DPR-37

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 May 1991.

Very truly yours,



W. L. Stewart  
Senior Vice President - Nuclear

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. 91-05**

Approved:

David A. Christ      6-12-91  
Station Manager                      Date

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### OPERATING DATA REPORT

Docket No.: 50-280  
 Date: 06-05-91  
 Completed By: M. A. Negron  
 Telephone: 804-365-2795

- 1. Unit Name:..... Surry Unit 1
- 2. Reporting Period:..... May 1991
- 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:

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9. Power Level To Which Restricted, If Any (Net MWe): \_\_\_\_\_

10. Reasons For Restrictions, If Any: \_\_\_\_\_

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	This Month	YTD	Cumulative
11. Hours In Reporting Period .....	744.0	3623.0	161639.0
12. Number of Hours Reactor Was Critical .....	744.0	3623.0	103097.2
13. Reactor Reserve Shutdown Hours .....	0.0	0.0	3774.5
14. Hours Generator On-Line.....	744.0	3623.0	101103.2
15. Unit Reserve Shutdown Hours.....	0.0	0.0	3736.2
16. Gross Thermal Energy Generated (MWH).....	1807779.1	8792644.4	235012554.7
17. Gross Electrical Energy Generated (MWH)....	603750.0	2959290.0	76536113.0
18. Net Electrical Energy Generated (MWH).....	570719.0	2815042.0	72598171.0
19. Unit Service Factor.....	100.0%	100.0%	62.5%
20. Unit Availability Factor.....	100.0%	100.0%	64.9%
21. Unit Capacity Factor (Using MDC Net).....	98.2%	99.5%	58.0%
22. Unit Capacity Factor (Using DER Net).....	97.3%	98.6%	57.0%
23. Unit Forced Outage Rate.....	0.0%	0.0%	20.0%

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

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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: 06-05-91  
 Completed By: M. A. Negrón  
 Telephone: 804-365-2795

- 1. Unit Name:..... Surry Unit 2
- 2. Reporting Period: ..... May 1991
- 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	3623.0	158519.0
12. Number of Hours Reactor Was Critical .....	0.0	2136.0	101308.3
13. Reactor Reserve Shutdown Hours .....	0.0	0.0	328.1
14. Hours Generator On-Line.....	0.0	2114.8	99685.4
15. Unit Reserve Shutdown Hours.....	0.0	0.0	0.0
16. Gross Thermal Energy Generated (MWH).....	0.0	4493943.2	232629411.5
17. Gross Electrical Energy Generated (MWH)....	0.0	1510315.0	75740429.0
18. Net Electrical Energy Generated (MWH).....	0.0	1432860.0	71811585.0
19. Unit Service Factor.....	0.0%	58.4%	62.9%
20. Unit Availability Factor.....	0.0%	58.4%	62.9%
21. Unit Capacity Factor (Using MDC Net).....	0.0%	50.6%	58.1%
22. Unit Capacity Factor (Using DER Net).....	0.0%	50.2%	57.5%
23. Unit Forced Outage Rate.....	0.0%	0.0%	15.0%

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

Refueling - 3-29-91 through 6-7-91 - 70 days

\_\_\_\_\_

\_\_\_\_\_

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

06-07-91

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: May 1991

Docket No.: 50-280  
 Unit Name: Surry Unit 1  
 Date: 06-05-91  
 Completed by: M. A. Negron  
 Telephone: 804-365-2795

(1) Date	(1) Type	(2) Duration Hours	(2) Reason	(3) Method of Shutting Down Rx	LER No.	(4) System Code	(5) Component Code	Cause & Corrective Action to Prevent Recurrence
05-08-91	S	0	B	4	N/A	TA	V	Ramped unit from 100% to 76% power to perform Turbine Valve Freedom Test (1-PT-29.1).

(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 1991

Docket No.: 50-281  
 Unit Name: Surry Unit 2  
 Date: 06-05-91  
 Completed by: M. A. Negron  
 Telephone: 804-365-2795

(1) Date	(1) Type	(1) Duration Hours	(2) Reason	(3) Method of Shutting Down Rx	LER No.	(4) System Code	(5) Component Code	Cause & Corrective Action to Prevent Recurrence
05-01-91	S	744	C	N/A	N/A	N/A	N/A	Unit was in a scheduled refueling for entire month of May, 1991.

(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: 06-05-91  
Completed by: M. A. Negron  
Telephone: 804-365-2795

Month: May 1991

<u>Day</u>	<u>Average Daily Power Level (MWe - Net)</u>	<u>Day</u>	<u>Average Daily Power Level (MWe - Net)</u>
1	731	17	771
2	753	18	770
3	777	19	775
4	775	20	771
5	762	21	764
6	776	22	769
7	775	23	766
8	742	24	775
9	776	25	775
10	774	26	771
11	771	27	771
12	778	28	765
13	774	29	759
14	767	30	756
15	773	31	746
16	773		

#### 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: 06-05-91  
Completed by: M. A. Negron  
Telephone: 804-365-2795

Month: May 1991

<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	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	29	0
14	0	30	0
15	0	31	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.

## SUMMARY OF OPERATING EXPERIENCE

MONTH/YEAR: May 1991

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

05-01-91	0000	This report period started with the Unit operating at 100% power and 795 MWe.
	1255	Started slow ramp down to maintain condenser vacuum while cleaning waterboxes; 100% power, 795 MWe.
	1933	Stopped ramp; 91% power, 720 MWe.
05-02-91	0815	Started ramp up; 96% power, 790 MWe.
	0845	Stopped ramp; 100% power, 815 MWe.
05-08-91	1002	Started ramp down for 1-PT-29.1; 100% power, 795 MWe.
	1118	Stopped ramp; 76% power.
	1329	Started ramp up after completion of Turbine Valve Freedom Test, 1-PT-29.1; 79% power.
	1522	Stopped ramp; 100% power, 810 MWe.
05-31-91	2400	This report period ended with the Unit operating at 100% power, 805 MWe.

### UNIT TWO

05-01-91	0000	This report period started with the Unit at Refueling Shutdown (RSD).
05-31-91	2400	This report period ended with the Unit at Intermediate Shutdown and heating up toward Hot Shutdown.

## FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: May 1991

TM S1-91-09

**Temporary Modification**  
(Safety Evaluation No. 91-112)

05-02-91

This Temporary Modification (TM) installs a mechanical blocking device on Recirculation Spray system motor operated valve, 1-RS-MOV-156B, to ensure valve movement/stroke cannot occur during replacement of the reach rod pin.

This TM will ensure the subject valve remains closed and containment integrity is maintained during this maintenance activity. The applicable Technical Specifications required Limiting Condition for Operation will be entered (which allows one train to be inoperable for 24 hours) and the redundant valve trains, 1-RS-MOV-155A and 1-RS-MOV-156A, will be tested prior to initiating the repairs to 1-RS-MOV-156B. Therefore, an unreviewed safety question does not exist.

SE 91-120

**Safety Evaluation**

05-07-91

This Safety Evaluation was performed to reevaluate the probability of occurrence of a broken fuel assembly spring clamp since this event was observed (for the third time in Surry fuel) during the Unit 2 Cycle 10 refueling outage.

The Safety Evaluation concludes that the probability of an accident is not increased since the spring clamp failure mechanism does not inhibit the ability of the control rod to perform its safety function (i.e., initial insertion into the reactor core during a reactor trip or for reactor for shutdown). The evaluation reviews the increased probability of spring clamp failure and discusses the fact that such a failure, even if undetected, only renders the rod inoperable on withdrawal following initial insertion of the control rod into its host assembly during a trip or shutdown. In addition, current safety analyses already account for a single stuck rod, and are based on the assumption that the single most reactive rod is affected. Therefore, an unreviewed safety question does not exist.

EWR 90-047

**Engineering Work Request**  
(Safety Evaluation No. 90-0130)1

05-08-91

This Engineering Work Request (EWR) changes the vent closure on the Residual Heat Removal (RHR) pumps from a flanged to a threaded connection for allowing the pumps to be vented in less time and reduce the radiation dose associated with this activity.

The method of closure of the vent connections has no affect on the equipment or system operating characteristics and does not affect the design basis of any system or component. Therefore, an unreviewed safety question does not exist.

**FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL**

MONTH/YEAR: May 1991

[continued]

SE 91-123

**Safety Evaluation**

05-09-91

The safety evaluation was performed to evaluate the Recirculation Spray System for operations beyond June 1, 1991 under the following conditions: 1) the Recirculation Spray Heat Exchanger (RSHX) Service Water(SW) piping in partial wet lay-up, 2) alternate stagnation of the 48 inch SW supply headers, and 3) injection of sodium hypochlorite into the stagnated SW headers.

The evaluation concluded that the SW piping to the RSHXs will deliver the required flow to meet the design basis heat removal requirements for the RSHXs. The operational methods changes and modifications are designed to control and limit the effects of biological growth in the SW piping to acceptable levels. Additional flow testing and piping inspections are planned at the next refueling outage as a part of a long term SW ecosystem study. A long-term SW ecosystem study is in progress which includes periodic assessments of the biological growth in the piping. The assessments include monitoring of biological growth rate and SW chemistry parameters and comparison with laboratory testing results. These assessments should provide both current information on the condition of the biological growth in the piping as well as information for enhancement of future operational methods to limit the growth. Based on the modifications, changes in operating methods, and SW piping monitoring programs, it is concluded that operation past June 1, 1991 is acceptable and that an unreviewed safety question does not exist.

QA Topical Report

**Quality Assurance Topical Report**  
(Safety Evaluation No. 91-127)

05-14-91

The QA Topical Report is being revised, based on the guidance provided in ANSI N18.7, to change the requirement for biennial procedure reviews to a periodic basis.

This change will allow more resources to focus on programmatic review activities, such as the procedure upgrade program. The upgrade program provides for a more thorough review than that currently available through the biennial review process. To assure this change does not adversely affect procedure quality and that the upgrade program continues to enhance the quality of procedures, Corporate Nuclear Safety will periodically assess a sample of procedures.

This is only an administrative change that will not reduce the margins of safety or adversely impact the probability or consequences of an accident. Therefore, an unreviewed safety question does not exist.

## FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: May 1991

[continued]

QA Topical Report      **Quality Assurance Topical Report**      05-14-91  
(Safety Evaluation No. 91-128)

The QA Topical Report is being revised to satisfy a requirement to submit an annual update to the NRC.

The changes are primarily of an administrative nature and include a change in the requirement for biennial procedure reviews (Reference: Safety Evaluation 91-127 in this report). These changes will not reduce the margins of safety or adversely impact the probability or consequences of an accident. Therefore, an unreviewed safety question does not exist.

TM S1-91-10      **Temporary Modification**      05-14-91  
(Safety Evaluation No. 91-129)

This Temporary Modification (TM) installs an electrical jumper to allow the replacement of a failed main feedwater (FW) recirculation valve (1-FW-150A) relay, 3-FW-150-AX, without deenergizing relay 3-FW-150-BX which would fail open main FW recirculation valve 1-FW-150B.

This TM involves the recirculation portion of the main FW control system and does not affect safety related equipment. Adequate protection will be established to ensure main FW capabilities are maintained. The loss of main FW (addressed in the UFSAR accident analyses) is backed-up by the Auxiliary FW system. Therefore, an unreviewed safety question does not exist.

TM S2-91-15      **Temporary Modification**      05-16-91  
(Safety Evaluation No. 91-132)

This Temporary Modification (TM) installs a spool piece in place of the Primary Drains Transfer Tank (PDTT) Pump discharge valve 2-DG-TV-208A, which is being removed for maintenance. The TM also installs an electrical jumper to defeat valve closure interlocks and allow the PDTT pump to remain operable.

This TM will be installed when the Unit is at Cold Shutdown. Potential leakage from the spool piece can be controlled by isolation using the suction or discharge valves of the PDTT pumps. The modification will be removed prior to exceeding 200°F and the system returned to its design condition. Therefore, an unreviewed safety question does not exist.

## FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: May 1991

[continued]

- |             |  |          |
|-------------|--|----------|
| TM S2-91-17 | <b>Temporary Modification</b><br>(Safety Evaluation No. 91-133)  | 05-21-91 |
|             | <p>This Temporary Modification (TM) installs temporary hoses and an ion exchange filter skid to clean-up chilled water supplied to the air compressor aftercooler to minimize the potential for contamination of the compressor and aftercooler. The equipment is being utilized for containment pressurization testing (Type "A" testing) being performed pursuant to 10CFR50, Appendix J. The chilled water is being supplied from the Chilled Water System (CD) which is slightly contaminated and located within the plant's Radiological Controlled Area (RCA).</p> <p>Following installation of the TM, the Chilled Water system will be checked for leaks to minimize the potential for a spill of potentially contaminated fluid. Precautions will also be taken to minimize the consequences of any such spill. The TM will be installed while the Unit is at Cold Shutdown and will be removed prior to the Chilled Water system being used to cool the Refueling Water Storage Tank water. Therefore, an unreviewed safety question does not exist.</p> |          |
| EWR 88-448  | <b>Engineering Work Request</b>  | 05-24-91 |
|             | <p>This Engineering Work Request (EWR) installs thermocouples on certain sections of Unit 2 Reactor Coolant System (RCS) piping and associated data logging/magnetic disk storage equipment in the cable tunnel and vault to monitor thermal stratification pursuant to NRC Bulletin 88-08.</p> <p>This temporary modification is being used for one fuel cycle and is an independent system that will not affect other equipment in the station. Therefore, an unreviewed safety question does not exist.</p>   |          |
| TM S2-91-12 | <b>Temporary Modification</b><br>(Safety Evaluation No. 91-138)  | 05-28-91 |
|             | <p>This Temporary Modification (TM) installs a prefabricated section of ductwork in place of the inoperable heating unit and closed damper for supply fan, 1-VS-HV-2. The modification will allow the supply fan to provide forced circulation cooling of the Motor Control Center (MCC) room over the Unit 1 cable vault.</p> <p>The affected ventilation system and equipment in the MCC room are not safety related and do not affect equipment important to safety. Therefore, an unreviewed safety question does not exist.</p>   |          |

## FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: May 1991

[continued]

DCP 90-38-2

**Design Change Package**  
(Safety Evaluation No. 91-010)

05-30-91

This Design Change (DC) replaces the motor operators for Charging system motor operated valves, 2-CH-MOV-2287A and 2-CH-MOV-2287B, with larger operators.

The modification was implemented as an upgrade to ensure the affected valves will perform their intended function under postulated system conditions. This DC constitutes a replacement in kind (unit size upgrade) and does not change or impact the system design basis. Therefore, an unreviewed safety question does not exist.

EWR 89-710

**Engineering Work Request**  
(Safety Evaluation No. 89-0043)

05-30-91

This Engineering Work Request (EWR) provides an additional bearing lubrication oil return line to the turbine driven auxiliary feedwater (AFW) pumps, 1-FW-P-2 and 2-FW-P-2, to enhance lubrication oil flow from the pump bearings back to the lubrication oil reservoir.

This modification enhances pump lubrication capability which improves pump performance and increases the margin of safety. AFW system operation or other systems or components are not affected by this change. Therefore, an unreviewed safety question does not exist.

## FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: May 1991

[continued]

JCO C-91-004  
TM S1-91-11  
TM S2-91-16

**Justification For Continued Operation**  
(Safety Evaluation No. 91-142)

05-30-91

This Justification for Continued Operation provides for compensatory actions to ensure the proper operation of the Recirculation Spray Heat Exchanger (RSHX) Service Water (SW) Radiation Monitoring (RM) Pumps (1-SW-P-5A, B, C,D) following the failure of pumps 2-SW-P-5B and 2-SW-P-5C to develop adequate flow and discharge pressure during functional testing while performing RSHX flow test (ST-301).

The failure was attributed to insufficient pump suction pressure due to discharge tunnel vacuum. The pumps were retested and performed satisfactorily with the tunnel at atmospheric pressure.

Temporary modifications, TM S1-91-11 and TM S2-91-16, eliminate the Hi-Hi Consequence Limiting Safeguards (CLS) automatic start function of the RM sample pumps by lifting the electrical leads from the start circuitry. Emergency Operating Procedures were revised to initiate the manual actions required to open the discharge tunnel vacuum breaker valves upon receipt of a Hi-Hi CLS and then to start the RM sample pumps. A validation of the procedures demonstrates that full operational capability of the SW RM pumps can be ensured within the required time frame.

Based on previous RSHX and Component Cooling Heat Exchanger flow tests, design basis flow rates have been demonstrated with the discharge tunnels operating at atmospheric pressure. Operating the tunnels at atmospheric pressure is also consistent with canal inventory calculation assumptions. These changes will ensure the full operational capability of the SW RM sample pumps within the required time frame. Consequently, an unanalyzed condition is not created and the licensing basis is not altered. Therefore, an unreviewed safety question does not exist.



## FACILITY CHANGES THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: May 1991

[continued]

DR S-91-0706      **Deviation Report**      05-30-91  
(Safety Evaluation No. 91-143)

This Deviation Report documents the identification of foreign objects, which cannot be retrieved, in the Unit 2 "C" Steam Generator (SG). The Safety Evaluation was performed to determine the feasibility of startup and operation of Unit 2 with the foreign objects left in place.

A Westinghouse evaluation, 91-236, determined that transportation of the foreign objects to various secondary systems and/or to the SG instrumentation sensing lines is highly unlikely and would not affect system or component operation. A review of the potential impacts on SG tube integrity also concluded that unit operation can continue until the next refueling outage without violating the Technical Specification requirement for tube thickness. Therefore, an unreviewed safety question does exist.

TM S2-91-20      **Temporary Modification**      05-30-91  
(Safety Evaluation No. 91-144)

This Temporary Modification (TM) installs electrical jumpers to prevent activation of the Safety Injection (SI) system while replacing a faulty Auxiliary Feedwater isolation test switch, 2-RP-CS-05.

The modification will be in place only while Unit 2 is at Cold Shutdown, at which time the SI system is not required. Installation and removal of the jumpers requires double verification. The affected circuits will be tested and returned to service prior to startup. Therefore, an unreviewed safety question does not exist.

TM S2-91-21      **Temporary Modification**      05-31-91  
(Safety Evaluation No. 91-145)

This Temporary Modification (TM) provides for the temporary installation of a vibration monitoring system on the Unit 2 Main Turbine to allow for display of the turbine vibrations in the Main Control Room. The installation will be removed when the Bentley Nevada display panel is permanently installed in the Main Control Room.

The TM does not affect the operation of the Turbine, safety related components or systems, or accidents evaluated in 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 1991

2-TOP-3053                      **Temporary Operating Procedure**                      05-06-91  
(Safety Evaluation No. 91-113)

This Temporary Operating Procedure was developed to provide instructions for dewatering the reactor cavity using the Residual Heat Removal system, as described in the UFSAR. Control of the cavity draining operation will be aided by having a dedicated operator observe the cavity level, two pressurizer level channels (cold calibrated), and the standpipe level indicator. Thus, adequate controls exist such that the possibilities or consequences of a previously analyzed accident are not affected. Therefore, an unreviewed safety question does not exist.

2-TOP-3056                      **Temporary Operating Procedure**                      05-13-91  
(Safety Evaluation No. 91-124)

This Temporary Operating Procedure was developed to provide instructions for manually controlling flow through the Residual Heat Removal (RHR) system while the stroke on the heat exchanger outlet control valve, 2-RH-HCV-2758, is adjusted to correspond with valve demand.

Flow will be maintained through the heat exchanger except for brief periods to take measurements and stroke testing. The probability of occurrence of a loss of RHR accident is not increased because valve adjustment will be done with valve 2-RH-HCV-2758 failed open. An operator will be at the work location and in communication with the control room to ensure control of RHR flow rate and cooling is maintained during the evolution. In addition, the other RHR pump and heat exchanger train will be operable. Therefore, an unreviewed safety question does not exist.

2-TOP-3054                      **Temporary Operating Procedure**                      05-13-91  
(Safety Evaluation No. 91-125)                      05-15-91  
(Safety Evaluation No. 91-131)

This Temporary Operating Procedure was developed to provide instructions for bypassing the loop stop valve interlocks and slightly opening the valves to fill the drained Reactor Coolant System (RCS) piping with Unit 2 at Cold Shutdown.

The process will be conducted in a slow, controlled manner to prevent rapid RCS level changes and will not adversely affect other systems. Source range nuclear instrumentation will be closely monitored during this evolution and the loop boron concentration will be verified prior to fully opening the loop stop valves. Therefore, an unreviewed safety question does not exist.

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

**MONTH/YEAR:** May 1991

[continued]

2-TOP-3066  
2-TOP-3067

**Temporary Operating Procedure**  
(Safety Evaluation No. 91-139)

05-28-91

Temporary Operating Procedures 2-TOP-3066 and 2-TOP-3067 were developed to provide instructions for venting nitrogen and oxygen, respectively, from the Volume Control Tank (VCT) to the Ventilation Vent system via the primary sample ventilation exhaust hood.

This method of venting the VCT is being utilized due to the large quantity of gases found in the Reactor Coolant System (RCS) during Unit startup. Fission gases will be minimal since this activity will be conducted during RCS heatup prior to the reactor becoming critical. The rate at which the gases will be vented will be much less than that considered in the UFSAR accident analysis of a VCT rupture with the Unit at power. Ventilation vent and Unit 2 letdown activity will be closely monitored and venting will be terminated immediately upon indication of increased radioactivity in the RCS, VCT, or the Ventilation Vent system. Therefore, an unreviewed safety question does not exist.

## TESTS AND EXPERIMENTS THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: May 1991

2-ST-301      **Unit 2 RSHX SW Flow Test**      05-23-91  
(Safety Evaluation No. 91-068)

The purpose of this testing was to collect Service Water (SW) flow data in order to determine 1) that SW flow through the new Recirculation Spray Heat Exchangers (RSHX) (DCP 87-22-1, 87-23-2) is adequate for them to perform their intended safety function, and 2) any long-term (30 days) fouling trend which could possibly reduce SW flows below that required for continued containment heat removal. This test procedure controlled the evolutions to obtain the information required.

The test was performed on two of the four Unit 2 RSHXs, 2-RS-E-1B and 2-RS-E-1C. The heat exchangers are supplied from the same SW supply header. Testing of the RSHXs was conducted simulating accident conditions with a portion of the heat exchanger service water supply piping in a wet layup configuration. Flowrate was obtained from test venturi flow elements installed in place of the heat exchanger inlet isolation valve (2-SW-MOV-204B, C) and expansion joints. The test was performed with the unit at cold shutdown conditions during a refueling outage.

The measured flow and pressure drops correlated very well with the expected design values indicating the system will perform as designed when maintained in a clean condition. Furthermore, long-term macrofouling buildup on the heat exchanger tubesheets was not measurable after 6 hours of flow.

To resolve other concerns, the SW Radiation Monitor pumps, 2-SW-P-5B, C, associated with the flowed RSHXs were started under simulated accident conditions. Initially both pumps did not adequately perform. After discharge tunnel vacuum dissipated, the pumps primed and pumped. A station deviation was submitted and Justification for Continued Operation, 1-91-02, was written for Unit 1.

In summary, this test accomplished the initial objectives of showing SW flowrates and long-term fouling trends are acceptable for the RSHXs to accomplish their intended safety function. Since the test affected only the Unit 2 RSHX SW piping and with the unit at cold shutdown conditions during a refueling outage when the RS system was not required to be operable, no unreviewed safety question existed.

## TESTS AND EXPERIMENTS THAT DID NOT REQUIRE NRC APPROVAL

MONTH/YEAR: May 1991

[continued]

2-ST-282

**Special Test**  
(Safety Evaluation No. 91-111)

05-30-91

This Special Test verifies train separation on Unit 2 Train "A" (2H) by turning off breakers, one at a time, on Vital Bus 2-I, 2-IA, 2-III, 2-IIIA, and 1-AS-1. The DC panels will be tested by placing the respective battery charger in equalize and measuring the before and after voltages.

Unit 2 will be at Cold Shutdown during the performance of this test and the following actions will be taken to minimize the risk of producing spurious equipment operation or erratic electronic equipment operation. The Safety Injection and Refueling Water Storage Tank systems cross-connect to Unit 1 circuits will be defeated to prevent spurious actuation. Source range nuclear detector and core cooling circuits will only be de-energized during refueling outage conditions with the reactor defueled ("empty pot"). Over pressure mitigation circuits (Technical Specification 3.1.G) will be tested while the primary system is vented. Main Control Room air bottle dump will be manually isolated and under administrative control during the testing of the respective circuits. Precautions will be taken to ensure Technical Specifications compliance and nuclear safety are maintained for circuits affecting refueling. Therefore, an unreviewed safety question does not exist.

**CHEMISTRY REPORT**

MONTH/YEAR: May 1991

Primary Coolant Analysis	Unit No. 1			Unit No. 2		
	Max.	Min.	Avg.	Max.	Min.	Avg.
Gross Radioact., $\mu\text{Ci/ml}$	7.33E-1	3.88E-1	5.26E-1	3.55E-2	4.44E-4	7.03E-3
Suspended Solids, ppm	0.0	0.0	0.0	-----	-----	-----
Gross Tritium, $\mu\text{Ci/ml}$	3.28E-1	3.18E-1	3.23E-1	-----	-----	-----
$\text{I}^{131}$ , $\mu\text{Ci/ml}$	3.23E-3	1.57E-3	2.17E-3	-----	-----	-----
$\text{I}^{131}/\text{I}^{133}$	0.15	0.07	0.10	-----	-----	-----
Hydrogen, cc/kg	38.5	30.5	34.6	-----	-----	-----
Lithium, ppm	2.33	2.06	2.20	1.97	0.05	1.20
Boron - 10, ppm*	132.1	114.9	122.1	488.0	64.9	199.8
Oxygen, (DO), ppm	$\leq 0.005$	$\leq 0.005$	$\leq 0.005$	5.0	0.005	3.7
Chloride, ppm	0.004	0.002	0.003	0.009	0.001	0.004
pH at 25 degree Celsius	6.97	6.85	6.92	5.91	4.62	4.97

\* Boron - 10 = Total Boron x 0.196

Comments:

Unit 2: Shutdown for Refueling.

**FUEL HANDLING  
UNITS 1 & 2**

MONTH/YEAR: May 1991

**Units One and Two**

<u>Cask</u>	<u>Stored</u>	<u>Number for Assemblies per Shipment</u>	<u>Assembly Number</u>	<u>ANSI Number</u>	<u>Nominal Initial Enrichment</u>	<u>New or Spent Fuel Shipping Cask Activity</u>
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None during this reporting period.

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

**MONTH/YEAR:** May 1991

None During This Reporting Period.