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SUBJECT: LER 89-019-00:on 891122,svc water MOVs to RSHXs inoperable due to personnel error in removing flood protection.

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VIRGINIA ELECTRIC AND POWER COMPANY
Surry Power Station
P.O. Box 315
Surry, Virginia 23883

December 20, 1989

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

Serial No.: 89-059
Docket No.: 50-281
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Gentlemen:

Pursuant to Surry Power Station Technical Specifications, Virginia Electric and Power Company hereby submits the following Licensee Event Report for Unit 2.

REPORT NUMBER

89-019-00

This report has been reviewed by the Station Nuclear Safety and Operating Committee and will be reviewed by Corporate Nuclear Safety.

Very truly yours,

M. R. Kansler
Station Manager

Enclosure

cc: Regional Administrator
Suite 2900
101 Marietta Street, NW
Atlanta, Georgia 30323

IE22

NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Surry Power Station, Unit 2	0 5 0 0 0 2 8 1	1 OF 0 5

TITLE (4) Service Water MOVs to the RSHXs Inoperable Due to Personnel Error in Removing Flood Protection

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
										0 5 0 0 0
1 1	2 2	8 9	8 9	— 0 1 9	— 0 0	1 2	2 0	8 9		0 5 0 0 0

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0 0 0	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
M. R. Kansler, Station Manager	AREA CODE 8 0 4 3 5 7 - 3 1 8 4

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

SUPPLEMENTAL REPORT EXPECTED (14)	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)				
X NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On November 22, 1989 at 1500 hours, Unit 2 was at hot shutdown. During routine walkdowns in the Unit 2 turbine building, in preparation for a unit startup, it was noted that the flood protection dikes had been removed from one side of the valve pits for the service water (SW) supply motor operated valves (MOVs) to the recirculation spray heat exchangers (RSHXs). Work was in progress near the valve pit area for replacement of the SW piping. The affected valves, MOV-SW-203A/B/C/D, were declared inoperable and a 30 hour action statement to cold shutdown was entered. A four hour non-emergency report was made to the Nuclear Regulatory Commission (NRC) pursuant to 10CFR50.72, paragraph (b)(2)(i). The dikes were replaced on November 22, 1989 at 2053.

1.0 Description of the Event

On November 22, 1989 at 1500 hours, Unit 2 was at hot shutdown (HSD). During routine walkdowns in the Unit 2 turbine building, in preparation for a unit startup, it was noted that the flood protection dikes (EIIS-BAF) were removed from one side of the valve pits for the service water (SW) (EIIS-BI) supply motor operated valves (MOVs) (EIIS-ISV) to the recirculation spray heat exchangers (RSHXs) (MOV-SW-203A/B/C/D). At the time of the discovery, work was in progress near the valve pit area for replacement of the SW piping to the main control room (MCR)/emergency switchgear room (ESGR) chillers and charging pump SW pumps. The work was being performed in accordance with design change procedure DC-87-34. The flood dikes were removed on October 25, 1989 in accordance with a field change to the procedure to facilitate installation of missile protection plates for the new SW piping.

While the dikes were removed, the Unit 2 reactor coolant system exceeded a temperature and pressure of 350 degrees Fahrenheit/450 psig during two time periods: from November 6 at 0555 hours to November 7 at 1000 hours and from November 20 at 2256 hours until the dikes were reinstalled on November 22 at 2053 hours. The RSHXs are required to be operable whenever unit conditions exceed 350 degrees Fahrenheit/450 psig.

The four (4) SW supply MOVs to the RSHXs were declared inoperable at 1500 hours, and a 30 hour action statement to achieve cold shutdown was entered. A four hour non-emergency report was made to the NRC pursuant to 10CFR50.72, paragraph (b)(2)(i).

2.0 Safety Consequences and Implications

The recirculation spray system consists of four independent trains, each containing a pump, heat exchanger and discharge spray ring. The system is required to be operable whenever the reactor coolant system temperature and pressure is greater than 350 degrees Fahrenheit/450 psig. The recirculation spray (RS) system is used in conjunction with the containment spray system (EIIS-BE) following a design

basis accident (DBA) to depressurize the containment below atmospheric pressure and maintain it depressurized for an extended period. The RS system also provides for long-term heat removal capability following a DBA. Each of the four trains is 50% capacity. Service water is used as the cooling medium for the heat exchangers and is provided through the subject MOVs. The MOVs are located in two adjacent valve pits at the 9' 6" elevation of the turbine building. The valves are physically located below the floor elevation. Analyses conducted during 1972-74 determined that the safety related MOVs to the RSHXs could be adversely affected by flooding caused by circulating water (CW) or fire protection water piping rupture. The dikes were installed to ensure the MOVs would remain operable in the event of flooding.

The consequences of the dikes being removed is minimized by the following:

Water level sensors are provided in pits located near the CW line expansion joints (a potential source of flooding). These expansion joints were replaced with safety related components in both units during the most recent outages making the probability of their failure remote. Alarms are provided in the control room to quickly alert the operators of an abnormal condition. Operators would take the necessary actions to ensure the plant was maintained in a safe condition following receipt of an alarm.

In addition, turbine building flooding coincident with a design basis accident is not postulated to occur. Consequently, the health and safety of the public were not affected.

3.0 Cause

The event was caused by personnel error. The removal of the dikes was authorized via a field change to Design Change 87-34. The engineers preparing the field change failed to address the controls that would be required for the removal of the dikes. In addition, the documents used to provide the instructions for the removal of the dikes were inadequate and reduced the effectiveness of subsequent

reviews required for final approval of the field change. The field change controlling document stated that the revision was necessary to provide additional details and instructions for installation of the new SW line missile protection covers. Removal of the dikes was not specified in the field change controlling document. The instruction to remove the dikes was placed on a revised drawing in the form of a note on a construction detail for the installation of the covers. The note stated that the dikes were to be removed and reinstalled as required with no stipulation of required unit conditions or required contingency actions.

4.0 Immediate Corrective Action(s)

The four SW supply MOVs to the RSHXs were declared inoperable, and a 30 hour action statement to CSD was entered. Construction personnel were directed to reinstall the flood dikes.

5.0 Additional Corrective Action(s)

The flood dikes were reinstalled at 2053 hours on November 22, 1989, and the 30 hour Technical Specification action statement was exited.

6.0 Action(s) Taken to Prevent Recurrence

A memorandum describing the above event was sent to design engineering personnel in order to heighten their awareness. The memorandum also reemphasized that instructions for specific work for design control documents must be included in the controlling procedure and not merely added to sketches and drawings.

An engineering review has been initiated to review the commitments and design bases relating to flood protection of safety-related equipment. As part of this review, walkdowns of plant areas requiring flood protection were conducted to identify and document any additional deficiencies. Draft procedures have been generated to identify the necessary attributes to be monitored as part of routine verification of the mechanical integrity of existing flood protection

dikes. These measures are to be incorporated into station preventive maintenance schedules.

Flood protection dikes throughout the plant have been stenciled with a cautionary legend.

7.0 Similar Events

None.

8.0 Manufacturer/Model Number(s)

N/A.