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SUBJECT: LER 89-012-00: on 890505, reactor scram during reactor protection sys logic sys functional test.

W/8 ltr.

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 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

P.O. Box 968 • 3000 George Washington Way • Richland, Washington 99352

Docket No. 50-397

June 5, 1989

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

Subject: NUCLEAR PLANT NO. 2
LICENSEE EVENT REPORT NO. 89-012

Dear Sir:

Transmitted herewith is Licensee Event Report No. 88-012 for the WNP-2 Plant. This report is submitted in response to the report requirements of 10CFR50.73 and discusses the items of reportability, corrective action taken, and action taken to preclude recurrence.

Very truly yours,



C.M. Powers (M/D 927M)
WNP-2 Plant Manager

CMP:lg

Enclosure:
Licensee Event Report No. 89-012

cc: Mr. John B. Martin, NRC - Region V
Mr. C.J. Bosted, NRC Site (M/D 901A)
INPO Records Center - Atlanta, GA
Ms. Dottie Sherman, ANI
Mr. D.L. Williams, BPA (M/D 399)

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Washington Nuclear Plant - Unit 2										DOCKET NUMBER (2) 0 5 0 0 0 3 9 7				PAGE (3) 1 OF 0 4									
TITLE (4) Reactor Scram During Reactor Protection System Logic System Functional Test while Plant was Shutdown for Refueling and Maintenance Outage-Inadequate Procedure																							
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	5	8	9	8	9	0	1	2	0	6	0	5	8	9	0	5	0	0	0		
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)																					
5		20.402(b)				20.405(c)				<input checked="" type="checkbox"/> 50.73(a)(2)(iv)				73.71(b)									
POWER LEVEL (10)		0 1 0 1 0				20.405(a)(1)(i)				50.73(a)(2)(v)				73.71(c)									
		20.405(a)(1)(ii)				50.38(c)(1)				50.73(a)(2)(vi)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)									
		20.405(a)(1)(iii)				50.38(c)(2)				50.73(a)(2)(vii)													
		20.405(a)(1)(iv)				50.73(a)(2)(i)				50.73(a)(2)(viii)(A)													
		20.405(a)(1)(v)				50.73(a)(2)(ii)				50.73(a)(2)(viii)(B)													
		20.405(a)(1)(vi)				50.73(a)(2)(iii)				50.73(a)(2)(ix)													
LICENSEE CONTACT FOR THIS LER (12)																							
NAME J.D. Arbuckle, Compliance Engineer										TELEPHONE NUMBER AREA CODE 510 19 317 171-1211115													
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																							
CAUSE	SYSTEM	COMPONENT	MANUFAC TURE	REPORTABLE TO NPD		CAUSE	SYSTEM	COMPONENT	MANUFAC TURE	REPORTABLE TO NPD													
SUPPLEMENTAL REPORT EXPECTED (14)												EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR							
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)												<input checked="" type="checkbox"/> NO											

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

On May 5, 1989 at 2215 hours an unplanned reactor scram occurred during the performance of a Reactor Protection System (RPS) Logic System Functional Test (LSFT). However, no control rod movement occurred because the Plant was in a shutdown condition (annual maintenance and refueling outage) with all control rods inserted.

At the time of the event, Plant personnel were performing the mode switch shutdown scram interlocks section of the LSFT procedure. This part of the LSFT, which initiates a full scram, tested the timeout of a scram reset timing relay (RPS-RLY-K16A). After it was verified that the relay timed out and energized as required, the Test Engineer directed Plant Control Room Operators to reset the scram. The Operators reset the scram as directed, but failed to bypass the Scram Discharge Volume (SDV) high level trip during this process. The procedure did not provide direction to bypass the SDV high level trip.

In addition, the SDV had previously been isolated for maintenance and, as a result, the automatic function (draining/isolation) was not operational during the event. This condition allowed the SDV to continue filling even after the scram had been reset. Because the SDV high level trip was not reset, this resulted in the unplanned SDV high level scram.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

Abstract (continued)

The cause of this event is procedural inadequacy in that the procedure did not provide specific direction on resetting the full scram signals generated during the performance of the LSFT. Immediate corrective action consisted of Plant Operators bypassing the SDV high level trip and successfully resetting the scram. As a further corrective action, the RPS LSFT procedure will be revised to provide specific direction on resetting the full scram signals generated by the procedure.

This event posed no threat to the health and safety of either the public or Plant personnel.

Plant Conditions

- a) Power Level - 0%
- b) Plant Mode - 5 (Refueling)

Event Description

On May 5, 1989 at 2215 hours an unplanned reactor scram occurred during the performance of a Reactor Protection System (RPS) Logic System Functional Test (LSFT). It should be noted that no actual control rod movement occurred because the Plant was in a shutdown condition (annual maintenance and refueling outage) with all control rods inserted.

At the time of the event, Plant personnel were performing Plant Procedure (PPM) 7.4.3.1.2.1, Section E, "Mode Switch Shutdown Scram Interlocks." This part of the LSFT tested the timeout of a relay (RPS-RLY-K16A) associated with the mode switch shutdown scram interlock. The test involves moving the reactor mode switch to the shutdown position (which initiates a full scram) and measuring the time it takes for the scram reset timing relay to close. Following the test, Plant Operators then reset the RPS logic. This section of the test is performed four times, once for each of the four RPS subchannels.

After it was verified that the scram reset timing relay (RPS-RLY-K16A) timed out and energized as required, the Test Engineer directed Plant Control Room Operators to reset the scram. The Operators reset the scram as directed, but failed to bypass the Scram Discharge Volume (SDV) high level trip during this process. The SDV had previously been isolated (vent and drain valves closed) due to maintenance on the air supply solenoid pilot valves. These pilot valves allow air to the SDV vent/drain valves, during the period of time when a scram is reset, causing them to open and drain water from the SDV to the radioactive drain system. When a full scram signal is generated, these pilot valves vent air from the SDV vent/drain valves which causes them to close on spring pressure, isolating the SDV. However, because the SDV was isolated, the automatic function (draining/isolation) was not operational during the event and, as a result, this condition allowed the SDV to continue filling because the vent and drain valves did not open following scram reset. This filling was due to drainage of the scram discharge header into the instrument volume.

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However, if the SDV high level trip had been bypassed prior to resetting the scram, this event would not have occurred. It should be noted that the procedure did not provide direction to bypass the SDV high level trip.

The following is a sequence of events associated with this LER:

- 22:14:50 hours - Reactor mode switch to shutdown. Full RPS scram as planned.
- 22:15:22 hours - SDV not drained alarm (indicative of filling the SDV due to leakage past control rods).
- 22:15:32 hours - SDV high level rod block (due to continued filling of the SDV from leakage).
- 22:15:36 hours - SDV high level scram (unplanned).

Immediate Corrective Action

Plant Control Room Operators bypassed the SDV high level trip and reset the scram without further incident.

Further Evaluation and Corrective Action

A. Further Evaluation

1. This event is being reported per the requirements of 10CFR50.73 (a)(2)(iv) as an "event or condition that resulted in manual or automatic actuation of any Engineered Safety Feature (ESF), including the Reactor Protection System (RPS).
2. With the exception of the Scram Discharge Volume, there were no structures, components or systems that were inoperable at the start of this event that contributed to the event.
3. The root cause of this event is procedural inadequacy in that PPM 7.4.3.1.2.1 did not provide specific direction on resetting the scram condition during the performance of this LSFT.

B. Further Corrective Action

1. PPM 7.4.3.1.2.1. "Reactor Protection System LSFT," will be revised to provide specific direction on resetting the full scram signals generated by the procedure.

Safety Significance

There is no safety significance associated with this event in that the reactor was in a cold shutdown condition, there was no control rod movement, there was no actual initiating condition and the RPS functioned as designed to cause a reactor scram. Accordingly, this event posed no threat to the health and safety of either the public or Plant personnel.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

Similar Events

None

EIIS InformationText ReferenceEIIS Reference

System Component

Reactor Protection System (RPS)
Scram Discharge Volume (Control Rod Drive System)
Scram Reset Timing Relay (RPS-RLY-K16A)

JC ---
AA ---
JC 2