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SUBJECT: LER 89-022-00:on 890530,loss of secondary containment
during core alterations due to unisolatable lines.
W/8 ltr.

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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 29, 1989

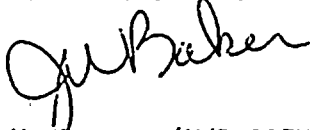
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Subject: NUCLEAR PLANT NO. 2
LICENSEE EVENT REPORT NO. 89-022

Dear Sir:

Transmitted herewith is Licensee Event Report No. 89-022 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. 89-022

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 1				PAGE (3) 1 OF 0 6									
TITLE (4) Loss of Secondary Containment Integrity During Core Alterations Due to Unisolatable Lines Caused by Simultaneous Maintenance Activities																							
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	3	0	8	9	0	2	2	0	0	0	6	2	9	8	9	0	5	0	0	0	0	0
OPERATING MODE (9) 5			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)				50.38(c)(1)				50.73(a)(2)(v)				73.71(c)								
			20.405(a)(1)(iii)				50.38(c)(2)				50.73(a)(2)(vii)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)								
			20.405(a)(1)(iii)				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)(ix)												
LICENSEE CONTACT FOR THIS LER (12)																							
NAME R.E. Fuller, Compliance Engineer										TELEPHONE NUMBER 5 0 1 9 3 7 1 7 1 2 7 1 9 7													
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																							
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDs		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDs													
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 May 5 through May 29, 1989 and again on May 31, 1989 Secondary Containment integrity was not maintained as required by the Plant Technical Specifications. On May 5, 1989 a breach in Secondary Containment, as defined in the Plant Technical Specifications, was established through a previously disassembled Main Steam Isolation Valve (MSIV) (MS-V-28A) in the Main Steam Tunnel in the Reactor Building via a 26-inch diameter main steam line to the Turbine Building upon removal of turbine throttle valve MS-V-TV/3. This breach of Secondary Containment was not recognized until May 30, 1989 when a Problem Evaluation Request documented a pipe bladder found by a Plant Maintenance Mechanic at MS-V-28D. Therefore, the reportability of the event was not determined until May 30, 1989. On May 31, 1989 Secondary Containment was again compromised when an open flow path was established between the Residual Heat Removal (RHR) heat exchanger RHR-HX-1A located within the Secondary Containment through Service Water lines ranging from 20-inches to 6-inches in diameter to the diesel cooling water heat exchanger DCW-HX-1A2 in the Diesel Generator Building and the Service Water valve SW-V-2A at the Service Water Pump 1A.

Immediate corrective actions that restored Secondary Containment integrity for the first event consisted of reassembly of the two MSIVs by May 29, 1989. However, this action was taken without recognition that a breach of Secondary Containment had existed. The RHR heat exchanger isolation valves were closed on May 31, 1989 to reestablish Secondary Containment integrity upon recognition that a breach existed.

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 root causes of these events include: 1) Less than adequate planning and scheduling to support Plant Operations tasks, and 2) The work practices were less than adequate to implement the outage schedule within Technical Specifications. A contributing cause is less than adequate scheduling and maintenance procedures to ensure Plant configuration remains within Technical Specifications.

The corrective actions include: 1) Appropriate Plant procedures will be revised to require all major outage schedules be in compliance with Technical Specifications; 2) Evaluate methods to support the Shift Manager to more successfully execute his responsibilities, and 3) Selected component maintenance procedures will be revised to include caution statements to verify the Plant configuration will be within the requirements of Technical Specifications.

There is no safety significance because negative pressure was maintained in Secondary Containment during these events and the components that were disassembled that caused the breaches are required to be intact and functional during operation. Therefore, these events did not threaten the health and safety of the public or Plant personnel.

Plant Conditions

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

Event Description

On May 30, 1989, an incident was documented which an evaluation was determined to be reportable. On May 5 through May 29, 1989 and again May 31, 1989 Secondary Containment integrity was not maintained as required by the Plant Technical Specifications. The Secondary Containment Integrity Technical Specification requires secondary containment integrity to be maintained through automatic or fixed isolation when in operational Mode 5 (Refueling) and when moving irradiated fuel or performing core alterations. At the time of the events, Control Rod Drive (CRD) friction testing was in progress. This is classified as a core alteration because the associated control rod movement results in a change in reactivity.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

On May 5, 1989 a breach in Secondary Containment, as defined in the Plant Technical Specifications, was established through a previously disassembled Main Steam Isolation Valve (MSIV) (MS-V-28A) in the Main Steam Tunnel in the Reactor Building via a 26-inch diameter main steamline to the Turbine Building through turbine throttle valve MS-V-TV/3. The second breach through Secondary Containment occurred on May 6, 1989 by opening of an additional 26-inch diameter main steam line with removal of the bonnet to turbine throttle valve MS-V-TV/4 and the already disassembled MSIV MS-V-28D. During maintenance and repair of the two MSIVs and the four turbine throttle valves (MS-V-TV/1,2,3,&4), rubber bladders were installed to prevent the spreading of debris. The bladders were installed on the upstream and downstream side of the two MSIVs (Perma-Type Rubber Inflatable Stopper, Type "C", 24-inch Diameter with Cloth Covering) and the upstream side of the throttle valves. Upon removal of the bladder downstream of MS-V-28D on May 27, 1989 at approximately 1600 hours, the differential pressure between the Reactor Building and Turbine Building caused the bladder on the upstream side of MS-V-TV/3 to give way and exit the main steam line at MS-V-28D. This established an open flow path between Secondary Containment and the environment, during which time CRD friction testing activities were being performed. The bladder that exited the MSIV was discovered by a Plant Maintenance Mechanic.

On May 31, 1989 Secondary Containment integrity was again compromised. The lower flange on the RHR heat exchanger RHR-HX-1A was removed at approximately 0200 hours on May 31. The flange on the Diesel Generator engine Cooling Water Heat Exchanger DCW-HX-1A2 was already removed. (RHR heat exchanger isolation valves RHR-V-14A and RHR-V-68A were open.) This established an open flow path from the Reactor Building at the RHR heat exchanger through an 18-inch to 20-inch Service Water line to the Diesel Generator Building, which is outside of Secondary Containment. At approximately 1100 hours on May 31, 1989 Service Water valve SW-V-2A was removed for repair, which is on the same Service Water line and which established a flow path to the Service Water Pumphouse. At approximately 1700 hours on May 31, 1989 a Plant Technical System Engineer discovered this breach of Secondary Containment. CRD friction testing was in progress during this event. With the RHR heat exchanger lower flange removed and Service Water valve or the diesel cooling water heat exchanger open, there was no automatic isolation capability. This condition caused a Technical Specification-defined unisolatable breach of secondary containment.

Immediate Corrective Action

The personnel involved in the MSIV to turbine throttle valve breach were not cognizant of the requirement to maintain Secondary Containment during the event period. The following actions for the first event were for the reasons stated below. A plywood cover was installed at the turbine throttle valve to stop the air flow through the main steam line caused by the differential pressure between the Turbine Building and the Reactor Building, and reduce the possibility of radioactive airborne contamination. Valve MS-V-28D was reassembled on May 27 and MS-V-28A was reassembled on May 29, 1989. An investigation was performed to determine the cause of the bladder failure and if debris had been dragged into the main steam line by movement of the bladder from the throttle valve to the MSIV.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

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

On May 31, 1989 following notification by the System Engineer of a breach of Secondary Containment, Plant Operators closed the RHR heat exchanger isolation valves RHR-V-14A and RHR-V-68A at approximately 1800 hours. This action reestablished Secondary Containment integrity for the second event.

Further Evaluation and Corrective ActionA. Further Evaluation

1. This event is reportable under 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by the Plant Technical Specifications. The Plant Technical Specification 3.6.5.1 Limiting Condition for Operation states Secondary Containment integrity shall be maintained, specifically during Core Alterations. CRD friction testing is considered to be a core alteration.

To ensure Secondary Containment integrity during design basis accident conditions, the Technical Specification Surveillance Requirement 4.6.5.1 requires the Standby Gas Treatment (SGT) system must, alone, develop a 0.25-inch Water Gauge vacuum on Secondary Containment. Extensive manpower would be required to determine if the SGT would be able to satisfy the requirement during either of the above described breach conditions. Without analyses and/or tests, the breach conditions were indeterminate as to the safety significance of the unanalyzed condition or if the breach was a condition that alone could have prevented the fulfillment of the Secondary Containment safety function. Therefore, the reportability per 10 CFR 50.73(a)(2)(ii)(A) and 10 CFR 50.73(a)(2)(v) is indeterminate.

2. The root causes of these events were identified to be the following: a) Less than adequate planning and scheduling to support Plant Operations tasks through inadequate assurance that planned activities and planned plant configurations were in compliance with Technical Specifications, and b) The work practices were less than adequate to implement the outage schedule on an integrated basis to ensure maintenance activities remained within the approved schedule and Technical Specifications. A contributing cause is less than adequate scheduling procedures and component maintenance procedures to require a minimum acceptable plant configuration to ensure compliance with the Technical Specifications.
 - 2.1 The outage schedule and associated planned maintenance activities were not reviewed on an integrated basis for compliance with the Plant Technical Specifications prior to and after implementation with changes.
 - 2.2 The Shift Manager is tasked with the responsibility of reviewing all Plant Maintenance activities for Technical Specification compliance prior to implementation. Less than adequate support was provided to the Shift Manager to accomplish this task successfully. There are no independent reviews performed to help the Shift Manager ensure that outage activities are coordinated to maintain compliance with Technical Specifications.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

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

3. Other than the maintenance of equipment described in the Event Description Section, there were no other structures, components, or systems inoperable prior to the event which contributed to the event.
4. The rubber bladders installed at the MSIVs and turbine throttle valves were used to contain debris during maintenance activities. They were not considered Technical Specification-defined Secondary Containment boundary isolation devices.

B. Further Corrective Action

1. Appropriate Plant procedures will be revised to require all major outage schedules and associated preplanned maintenance activities be in compliance with Technical Specifications on an integrated basis.
2. Evaluate, select, and implement programs to enhance the ability of the Shift Manager to more successfully execute his responsibilities.
3. Selected component maintenance procedures associated with the Main Steam line and Service Water line events will be revised to include caution statements to verify the Plant configuration will be in compliance with Technical Specifications.

Safety Significance

There is no safety significance for the plant conditions which existed during the two events, the normal Reactor Building Heating, Ventilation, and Air Conditioning (RBHVAC) maintained the required negative secondary containment pressure. The safety significance of the two events if an accident occurred is indeterminate because the ability of the SGT to maintain the Technical Specification Surveillance required negative 0.25-inch w.g. pressure on Secondary Containment was not determined for either of the two breach conditions. There is no safety significance associated with these events during power operation because the components that were disassembled that caused the breach are required to be intact and functional during operation.

Since the secondary containment pressure remained negative during these events, they did not threaten the health and safety of the public or Plant personnel.

Similar Events

None

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

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

EIIS InformationText ReferenceEIIS Reference

System Component

Control Rod Drive System	AA	---
Diesel Cooling Water System (Heat Exchange DCW-HX-1A2)	LB	HX
Main Steam System	SB	---
Main Steam System (Main Steam Isolation Valve MS-V-28A)	SB	ISV
Main Steam System (Main Steam Isolation Valve MS-V-28B)	SB	ISV
Main Steam System (Main Steam Isolation Valve MS-V-28C)	SB	ISV
Main Steam System (Main Steam Isolation Valve MS-V-28D)	SB	ISV
Reactor Building	NG	---
Reactor Building HVAC (Outside Air)	VA	---
Standby Gas Treatment System	BH	---
Turbine Building	NM	---
Residual Heat Removal (Heat Exchanger RHR-HX-1A)	BO	HX
Throttle Valve MS-V-TV/1)	TA	FCV
Throttle Valve MS-V-TV/2)	TA	FCV
Throttle Valve MS-V-TV/3)	TA	FCV
Throttle Valve MS-V-TV/4)	TA	FCV