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 AUTH. NAME AUTHOR AFFILIATION
 ARBUCKLE, J.D. Washington Public Power Supply System
 BAKER, J.W. Washington Public Power Supply System
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 91-002-00: on 910110, reactor recirculation sys jet pump
 operability surveillance testing did not meet literal
 compliance w/Tech Specs. Caused by inadequate procedure.
 Procedure revised. W/910208 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED: LTR ENCL SIZE: 5
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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	NRR/DLPQ/LPEB10	1 1	NRR/DOEA/OEAB	1 1
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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

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

Docket No. 50-397

February 8, 1991

G02-91-023

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

Subject: NUCLEAR PLANT NO. 2
LICENSEE EVENT REPORT NO. 91-002

Dear Sir:

Transmitted herewith is Licensee Event Report No. 91-002 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,

J. W. Baker

J. W. Baker (M/D 927M)
WNP-2 Plant Manager

JWB:lr

Enclosure:

Licensee Event Report No. 91-002

cc: Mr. John B. Martin, NRC - Region V
Mr. C. Sorensen, NRC Resident Inspector (M/D 901A)
INPO Records Center - Atlanta, GA
Mr. D. L. Williams, BPA (M/D 399)
NRC Resident Inspector - walk over copy

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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

This event posed no threat to the health and safety of either the public or Plant personnel. Matching the RRC loop flows meets the intent of the Technical Specification for determining Jet Pump operability.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 60.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Washington Nuclear Plant - Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 3 9 7	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		9 1	0 0 2	0 0 0	2	OF	0 4

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

Plant Conditions

- a) Power Level - 100%
- b) Plant Mode - 1 (Power Operation)

Event Description

On January 10, 1991 it was determined that current Reactor Recirculation (RRC) System Jet Pump operability surveillance testing did not meet literal compliance with the Technical Specifications. The operability of the Jet Pumps was being determined by matching RRC loop flows instead of flow control valve positions as required by Technical Specification 3.4.1.2. This discrepancy was identified by an NRC Inspector during a routine inspection of Plant operations activities.

The Technical Specifications require that, "The Jet Pumps shall be demonstrated OPERABLE prior to THERMAL POWER exceeding 25% of RATED THERMAL POWER and at least once per 24 hours by determining recirculation loop flow, total core flow and diffuser-to-lower plenum differential for each jet pump when . . . both recirculation loops are operating at the same flow control valve position."

However, Plant Procedure (PPM) 7.4.4.1.2, "Jet Pump Operability," provided direction to adjust drive flow such that both loops are approximately equal in flow, instead of adjusting the Recirculation Loop Flow Control Valves (RRC-V-60A and RRC-V-60B) until the FCV positions are equal. This procedure provides instructions for determining the operability of the RRC Jet Pumps and is performed prior to thermal power exceeding 25% of rated thermal power, and daily when in Operational Modes 1 (Power Operation) and 2 (Startup).

Immediate Corrective Action

PPM 7.4.4.1.2, "Jet Pump Operability," was modified to correctly reflect the Technical Specification requirement that both Reactor Recirculation System loops are lined up with the Flow Control Valves in the same position, and the surveillance was successfully re-performed.

Further Evaluation and Corrective Action

A. Further Evaluation

1. This event is reportable in accordance with the requirements of 10CFR50.73(a)(2)(i)(B) as a condition prohibited by the Plant's Technical Specifications.
2. There were no structures, systems or components that were inoperable at the start of this event that contributed to the event.

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

3. The root cause of this event is Less Than Adequate Procedure Preparation/Review to ensure that the procedural method for determining Jet Pump operability was in literal compliance with the Technical Specifications.

As previously stated, PPM 7.4.4.1.2 is the procedure used to determine the operability of the Jet Pumps. The original version (Revision 0) of PPM 7.4.4.1.2 was issued in 1983 and contained the Technical Specification-required direction to line up both recirculation loops such that they have the same flow control valve position. In 1985, Revision 1 to the procedure was issued and the direction was changed to adjust drive flows such that both loops are approximately equal in flow.

The reason this change was made is because experience had shown that both Reactor Recirculation System pumps and valves have unique operating characteristics that, in combination with matched flow control valve positions, could potentially cause a non-compliance with Technical Specification 3.4.1.3. With flow control valve positions at 80 - 85%, the potential could exist for a flow mismatch to occur. The design of the Reactor Recirculation System at WNP-2 is such that the two pumps (RRC-P-1A and RRC-P-1B) run at constant speed, driven by either 15 Hz or 60 Hz power supplies. The only way to vary flow in the recirculation loops is by manipulating the flow control valves.

However, although this change to the procedure was technically prudent and the correct action to take for meeting the intent of the Jet Pump operability requirements, a Technical Specification Change Request should have been submitted and approved prior to implementation of the procedure change to provide literal compliance with the Technical Specifications.

B. Further Corrective Action

1. A Technical Specification Change Request will be submitted to the NRC to remove the requirement of equalizing flow control valve positions during RRC Jet Pump operability determinations.
2. Changes have been made to the procedure preparation and review process since the time-frame when the changes to the Jet Pump operability procedure were made. Specifically, a procedural verification and validation process has recently been implemented. Verification is the process of confirming and documenting the technical accuracy and written correctness of Plant procedures. Validation is the evaluation performed to determine that Plant procedures provide adequate guidance to the procedure user and to ensure proper operation/maintenance of Plant equipment.
3. A reverification of the adequacy of our procedural compliance to Technical Specification requirements is also planned as part of the Technical Specification Improvement Program (TSIP) which is currently in progress.

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

Safety Significance

There is no safety significance with this event. The assumption in the design basis Loss-of-Coolant-Accident (LOCA) analysis for Reactor Recirculation System Jet Pump operability is that the flows are matched. The capability of reflooding the core to two-thirds core height is dependent upon the structural integrity of the Jet Pumps. If a beam holding a Jet Pump in place fails, the Jet Pump suction and mixer sections could become displaced, resulting in a larger flow area through the Jet Pump and a lower Jet Pump suction elevation. This could adversely affect the water level in the core during the reflood phase of a LOCA, as well as the assumed blowdown flow during a LOCA.

The Technical Specification surveillance requirement is designed to detect significant degradation in Jet Pump performance that could precede Jet Pump failure. The intent of this surveillance is to ensure that the three comparisons in the Specification (loop flow versus flow control valve position, total core flow and individual Jet Pump differential pressure) are measured at approximately a balanced jet pump loop flow condition each time. Matching the Reactor Recirculation loop flows, instead of just matching flow control valve positions, meets the intent of the Specification (in a different way) for verifying that a Jet Pump is not damaged. As a result, the Jet Pumps were operable during the event period.

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

Similar Events

There have been LERs written for not being in literal compliance with the Technical Specifications; however, none were related to Jet Pump operability or the Reactor Recirculation System.

EIIS InformationText ReferenceEIIS Reference

System	Component
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Reactor Recirculation (RRC) System
RRC Jet Pumps
RRC-V-60A
RRC-V-60B
RRC-P-1A
RRC-P-1B

AD	- - -
AD	P
AD	FCV
AD	FCV
AD	P
AD	P