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AUTH. NAME AUTHOR AFFILIATION
MACKAMAN, C.D. Washington Public Power Supply System
PARRISH, J.V. Washington Public Power Supply System
RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 95-011-00: on 950919, failed to comply w/TS SR for RCIC
sys due to analysis deficiency that resulted in inadequate
surveillance test procedure. Surveillance procedure revised
to correct deficiency. W/951019 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

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October 19, 1995
G02-95-222

Docket No. 50-397

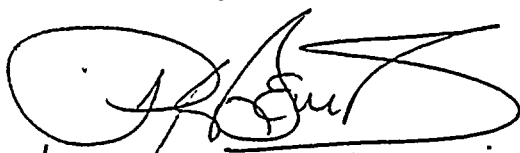
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Washington, D.C. 20555

Subject: NUCLEAR PLANT WNP-2, OPERATING LICENSE NPF-21
LICENSEE EVENT REPORT NO. 95-011, REVISION 0

Transmitted herewith is Licensee Event Report No. 95-011-00 for WNP-2. This report discusses the items of reportability, corrective action taken, and action to preclude recurrence.

Should you have any questions or desire additional information, please call me or D.A. Swank at (509) 377-4563.

Sincerely,



for J. V. Parrish (Mail Drop 1023)
Vice President, Nuclear Operations

JVP/CDM/mky
Enclosure

cc: LJ Callan, NRC-RIV
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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 4

TITLE (4)

**FAILURE TO COMPLY WITH A TECHNICAL SPECIFICATION SURVEILLANCE
REQUIREMENT FOR THE REACTOR CORE ISOLATION COOLING SYSTEM DUE TO AN
INADEQUATE TEST METHOD**

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 NUMBERS(S)						
0	9	1	9	9	5	9	5	--	0	1	1	--	0	0	1	0	1	9	9	5						0	5	0	0	0		
																									0	5	0	0	0			

OPERATING
MODE (9)

1

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

POWER LEVEL
(10)

0 9 7

20.402(b)
20.405(a)(1)(i)
20.405(a)(1)(ii)
20.405(a)(1)(iii)
20.405(a)(1)(iv)
20.405(a)(1)(v)

20.405(c)
50.36(c)(1)
50.36(c)(2)
50.73(a)(2)(i)
50.73(a)(2)(ii)
50.73(a)(2)(iii)

50.73(a)(2)(iv)
50.73(a)(2)(v)
50.73(a)(2)(vii)
50.73(a)(2)(viii)(A)
50.73(a)(2)(viii)(B)
50.73(a)(2)(x)

77.71(b)
73.73(c)
OTHER (Specify in Abstract
below and in Text, NRC
Form 366A)

LICENSEE CONTACT FOR THIS LER (12)

NAME

C.D. Mackaman, Technical Specialist

TELEPHONE NUMBER

AREA CODE

5 0 9 3 7 7 - 4 4 5 1

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) ☒ NO

ABSTRACT (16)

At 1400 hours on September 19, 1995, with WNP-2 in Mode 1 (Power Operation) at 97.5% power, it was discovered that the test method used to satisfy a Reactor Core Isolation Cooling (RCIC) System surveillance requirement was incomplete. During a biennial review of a RCIC system surveillance procedure, the Technical Specification Surveillance Implementation Program (TSSIP) lead engineer determined that surveillance procedures did not verify the RCIC Division 2 automatic isolation seal-in logic relay contact function. Procedures were found that adequately verify the Division 1 seal-in logic function.

Based on further investigation, it was determined that a special test had been performed on November 20, 1993 that verified the RCIC Division 2 seal-in logic function. Since this test was completed within the allowed time period, RCIC system operability was maintained. However, a past noncompliance condition existed where the RCIC Isolation Actuation Instrumentation Logic System Functional Test (LSFT) surveillance requirements had not been completely satisfied.

The cause of the event was an analysis deficiency that resulted in an inadequate surveillance test procedure.

No immediate corrective actions were necessary as there was no immediate impact on RCIC system operability. The surveillance procedure has been revised to correct the deficiency.

This event had no safety significance.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION							
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		9 5	0 1 1	0 0	2	OF	4
TITLE (4) FAILURE TO COMPLY WITH A TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENT FOR THE REACTOR CORE ISOLATION COOLING SYSTEM DUE TO AN INADEQUATE TEST METHOD.							

Event Description

At 1400 hours on September 19, 1995, with WNP-2 in Mode 1 (Power Operation) at 97.5% power, it was discovered that the test method used to satisfy a Reactor Core Isolation Cooling (RCIC) System [BN] surveillance requirement was incomplete. During a biennial review of a RCIC system surveillance procedure, the Technical Specification Surveillance Implementation Program (TSSIP) lead engineer determined that surveillance procedures did not verify the RCIC Division 2 automatic isolation seal-in logic relay [BN, RLY] contact function. A Division 2 isolation logic actuation automatically closes the inboard steam supply and bypass (warmup) line isolation valves when a system steam leak is detected. A Division 1 isolation logic actuation automatically closes the outboard steam supply isolation valve when a system steam leak is detected. A Division 1 isolation may also be initiated manually from the control room. Procedures were found that adequately verify the Division 1 isolation seal-in logic function. Thus, there was no impact on the capability of the outboard valve to isolate the steam supply in the event of a steam line break.

Based on further investigation, it was determined that a special test had been performed on November 20, 1993 that verified the RCIC Division 2 isolation seal-in logic relay contact function. Since this test was completed within the allowed time period, RCIC system operability was maintained. However, a past noncompliance condition existed where the RCIC Division 2 Isolation Actuation Instrumentation Logic System Functional Test (LSFT) surveillance requirements had not been completely satisfied.

Immediate Corrective Actions

No immediate corrective actions were necessary as there was no immediate impact on RCIC system operability.

Further Evaluation and Corrective Actions

Further Evaluation

1. The RCIC Division 2 functional testing procedures were deficient in that none of the procedures verified that an automatic isolation signal would seal-in to maintain RCIC system inboard steam supply isolation valve [BN, ISV] closure in the event of a steam line break. This deficiency has existed since initial procedure development. A failure of the seal-in logic relay contact to close on an isolation actuation could allow the inboard isolation valve to automatically reopen (unisolate) following initial closure because the steam leakage signal(s) would likely be reset when the steam flow through the break is reduced by the isolation. If a failure of the outboard (Division 1) isolation valve is postulated, this unisolation of the break would increase steam flow through the break, initiating another system isolation actuation and isolation valve closure. Thus, a failure of the RCIC isolation seal-in logic could result in the steam supply isolation valve cycling between open and closed until the panel [MCBD] keylock control switch [33] is

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TITLE (4) FAILURE TO COMPLY WITH A TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENT FOR THE REACTOR CORE ISOLATION COOLING SYSTEM DUE TO AN INADEQUATE TEST METHOD											

positioned closed. This LER is submitted pursuant to the requirements of 10CFR50.73(a)(2)(i)(B) for the failure to test the RCIC isolation seal-in function in accordance with the LSFT surveillance requirements. The surveillance procedure has been changed to correct the deficiency. The procedure was successfully completed on October 6, 1995.

2. There were no structures, systems, or components that were inoperable at the start of the event that contributed to the event.
3. The Supply System completed a comprehensive review of surveillance procedures in March 1994, following the discovery in 1991 of programmatic weaknesses in the WNP-2 Technical Specification surveillance program. Although the initial surveillance procedure review project has been completed, the Supply System elected to include TSSIP reviews as part of the surveillance procedure revision process to ensure that surveillance procedures remain in compliance with the Technical Specifications. The failure to verify the RCIC isolation seal-in logic relay contact function was identified during the TSSIP review performed as part of the recent biennial review of the RCIC Division 2 high steam flow isolation actuation channel functional test and channel calibration surveillance procedure. The RCIC isolation seal-in logic had been previously examined during the surveillance procedure review project, but the reviewers mistakenly credited verification of a Bypass and Inoperable Status Indication (BISI) light actuation for the verification of the logic seal-in light. The BISI and seal-in light are actuated by separate contacts on the same isolation logic relay. Thus, verification of the BISI was adequate to demonstrate relay function, but not seal-in logic function. It also appears that previous procedure authors and the project reviewers did not identify the need to reset the isolation actuation signal(s) prior to verification of the seal-in logic light actuation to remove the parallel electrical path(s) that would "mask" seal-in contact closure. The failure of the surveillance procedure review project team to verify that the RCIC isolation seal-in logic was adequately tested was an analysis deficiency.

Although the initial project reviews did not identify the surveillance procedure deficiency, the discovery during a subsequent TSSIP review in accordance with current programmatic controls provides reasonable assurance that surveillance procedures will comply with Technical Specification requirements. Furthermore, the Supply System believes that the previous programmatic weaknesses in the WNP-2 Technical Specification surveillance program have been corrected by the TSSIP and the enhancements that are described in detail in LER 93-10.

Root Cause

The root cause for this event was an analysis deficiency that resulted in an inadequate surveillance test procedure. The procedure deficiency was not identified by the initial surveillance procedure review project reviewers due to an oversight.

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TITLE (4) FAILURE TO COMPLY WITH A TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENT FOR THE REACTOR CORE ISOLATION COOLING SYSTEM DUE TO AN INADEQUATE TEST METHOD							

Further Corrective Actions

A technical audit of other system logic circuits that contain seal-in logic contacts/indications will be performed by November 6, 1995 to ensure proper identification and testing. Based on the audit results, additional corrective actions will be initiated if necessary.

Safety Significance

The special test performed on November 20, 1993 demonstrated that the RCIC Division 2 automatic isolation seal-in logic relay contact would have closed to maintain RCIC system inboard steam supply isolation valve closure in the event of a steam line break. Furthermore, a review of plant material and maintenance records and information determined that the seal-in logic relay tested is the original relay that was installed prior to initial plant startup in 1984. Thus, the seal-in logic relay contact would have performed its safety function if required from initial plant startup. There was no impact on the RCIC Division 1 isolation seal-in logic, and the outboard steam supply isolation valve remained capable of isolating a steam line break. Also, based on a review of RCIC system operation and testing procedures, it is likely that plant operators would have identified a seal-in logic failure because the actual RCIC isolation valve position and logic reset indication would be contrary to prescribed conditions. On an actual isolation condition, control room operators would notice the repeated annunciator actuations caused by a seal-in logic failure and valve cycling and would check the isolation valves closed in accordance with annunciator response procedures. Therefore, it is concluded that this event had no safety significance.

Similar Events

LER 93-10 described several surveillance test deficiencies that were identified by the original TSSIP reviews. The success of the original program prompted the continuation of TSSIP reviews as part of the surveillance procedure revision and biennial review process. This has heightened plant staff awareness of Technical Specification surveillance testing requirements and has fostered the questioning attitude that led to discovery of the procedure deficiency described in this LER and also LER 95-10.