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 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 93-023-00:on 930605,concluded that flexible conduit associated w/pressure switches not seismically supported. Caused by improper construction instructions.Walkdown of Quality Class I racks performed.W/930701 ltr.

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July 1, 1993
G02-93-171

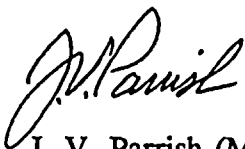
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Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: NUCLEAR PLANT WNP-2, OPERATING LICENSE NPF-21
LICENSEE EVENT REPORT NO. 93-023

Transmitted herewith is Licensee Event Report No. 93-023 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.

Sincerely,



J. V. Parrish (Mail Drop 1023)
Assistant Managing Director, Operations

JVP/DAS/cgeh
Enclosure

cc: Mr. B. H. Faulkenberry, NRC - Region V
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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
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TITLE (4)
IMPROPERLY SUPPORTED INSTRUMENT FLEXIBLE CONDUIT

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	6	0	5	9	3	9	3	0	2	3	0	0	0	5	0	0	0	0
0	7	0	1	9	3							0	5	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	<input type="checkbox"/> 20.402(b) <input type="checkbox"/> 20.405(a)(1)(i) <input type="checkbox"/> 20.405(a)(1)(ii) <input type="checkbox"/> 20.405(a)(1)(iii) <input type="checkbox"/> 20.405(a)(1)(iv) <input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 20.405(C) <input type="checkbox"/> 50.36(c)(1) <input type="checkbox"/> 50.36(c)(2) <input checked="" type="checkbox"/> 50.73(a)(2)(i) <input type="checkbox"/> 50.73(a)(2)(ii) <input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(iv) <input type="checkbox"/> 50.73(a)(2)(v) <input type="checkbox"/> 50.73(a)(2)(vi) <input type="checkbox"/> 50.73(a)(2)(vii)(A) <input type="checkbox"/> 50.73(a)(2)(vii)(B) <input type="checkbox"/> 50.73(a)(2)(x)	<input type="checkbox"/> 77.71(b) <input type="checkbox"/> 73.73(c) OTHER (Specify in Abstract below and in Text, NRC Form 366A)
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LICENSEE CONTACT FOR THIS LER (12)	
NAME D. A. Swank, Licensing Engineer	TELEPHONE NUMBER AREA CODE 5 0 9 3 7 7 - 4 5 6 3

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) <input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH DAY YEAR
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ABSTRACT (16)

On June 5, 1993, it was concluded in a reportability evaluation that flexible conduit associated with pressure switches MS-PS-48A and C were not seismically supported. These pressure switches provide a permissive to allow remote manual opening of upper drywell (containment) spray valves RHR-V-16A and 17A. The containment spray function is a mode of Residual Heat Removal (RHR) operation that provides supplemental containment cooling during postulated post accident conditions. This event was not safety significant.

The root cause of this event was improper construction instructions. Other instrumentation racks were walked down to identify similar conditions. The unacceptable conditions found have been corrected. Because the root cause of this condition was a construction/startup modification control process that has changed significantly since the time this problem occurred (1983), no further corrective actions are planned. This event posed no threat to plant personnel or the public.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION														
FACILITY NAME (1) Washington Nuclear Plant - Unit 2		DOCKET NUMBER (2) 0 5 0 0 0 3 9 7							LER NUMBER (8) Year Number Rev. No. 9 3 0 2 3 0 0			PAGE (3) 2 OF 4		
TITLE (4) IMPROPERLY SUPPORTED INSTRUMENT FLEXIBLE CONDUIT														

Plant Conditions

Power Level - 0%

Plant Mode - 5

Event Description

On June 5, 1993, a formal reportability evaluation was completed in which it was concluded that pressure switches MS-PS-48A and C were inoperable. The cause of the inoperability was flexible conduits associated with these two instruments that were found installed with distances between supports that exceeded the design requirements. Distances of approximately 15 feet were found when the maximum allowable distance is six feet nine inches. These instruments were not installed in a seismically qualified configuration. This condition was found by the system engineer during routine plant walkdowns. This unqualifiable configuration is a reportable condition.

In addition to the two pressure switches mentioned above, several other pressure, level, and flow instruments were found with flexible conduits not installed per the design requirements. Each of these other instruments was evaluated and determined to be capable of performing its intended function, and thus operable. This conclusion was based on the fail safe design of the instruments where loss of circuit continuity produces the same result as an instrument trip. These other instruments were operable and not reportable in the as-found configuration.

Immediate Corrective Action

No immediate corrective action was required. Pressure switches MS-PS-48A and C are required to be operable in operational conditions 1, 2, and 3. The plant was in operational condition 5 when the seismic qualification evaluation was concluded.

Further Evaluation, Root Cause and Corrective Action

A. Further Evaluation

Pressure switches MS-PS-48A and C are designed to actuate on high drywell pressure as part of the Emergency Core Cooling System Actuation Instrumentation. In particular, these two pressure switches provide permissives to allow remote manual opening of the upper drywell (containment) spray valves, RHR-V-16A and 17A. These valves are normally closed and do not automatically open or close.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION																	
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Washington Nuclear Plant - Unit 2		0	5	0	0	0	3	9	7	Year		Number		Rev. No.			
TITLE (4)									9	3	0	2	3	0	0	3 OF 4	
IMPROPERLY SUPPORTED INSTRUMENT FLEXIBLE CONDUIT																	

A review of past work on these pressure switches revealed that the flexible conduits were moved prior to initial startup of the plant in 1983. In 1979 it was identified that the two instruments in question were installed such that there was the potential for a water seal developing in the sensing leg tubing outside containment. The instruments were relocated on the same instrument rack to eliminate this problem. In 1983 during system startup testing it was found that these two pressure switches, although physically moved and remounted, were not electrically terminated and would require new conduit routing to complete this termination. New flexible conduit was installed between the instruments and the associated junction boxes per the Architect Engineer design requirements for instrument and junction box terminations. However, these requirements did not include the instrument rack mounting criteria of the rack vendor to ensure seismic qualification was maintained. A review of other past work associated with these instruments did not reveal configuration changes that contributed to this event.

The equipment qualification file for the instrumentation rack was reviewed. The photographs and other available configuration information did not provide sufficient detail regarding the mounting of flexible conduit at the time of seismic testing to determine if the as-found condition met the original design. Therefore, the engineering criteria for mounting of flexible conduit were chosen for evaluation of the as-found condition and correction of identified problems. As stated previously, the as-found condition did not meet the engineering configuration criteria for conduit span length. Pressure switches MS-PS-48A and 48C were not capable of performing their intended safety functions under the required design seismic condition, and were thus not operable. This was a condition prohibited by the Technical Specifications.

B. Root Cause

The root cause of this event was inadequate construction instructions. The instruction for installing the flexible conduits did not take into account the seismic qualification requirements for the instrument rack as implemented by the instrument rack vendor.

C. Further Corrective Action

A walkdown of the Quality Class I racks in the Reactor and Turbine buildings was performed to identify similar configuration problems. Identified problems were evaluated for reportability as described above, and identified discrepancies were corrected.

This condition resulted from a construction/startup modification practice. These practices are no longer used. Use of the current engineering criteria will preclude recurrence. No further corrective action is planned.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION														
FACILITY NAME (1) Washington Nuclear Plant - Unit 2		DOCKET NUMBER (2) 0 5 0 0 0 3 9 7							LER NUMBER (8) Year: 9 3, Number: 0 2 3, Rev. No.: 0 0			PAGE (3) 4 OF 4		
TITLE (4) IMPROPERLY SUPPORTED INSTRUMENT FLEXIBLE CONDUIT														

Safety Significance

The upper containment spray mode of operation for the RHR system is designed to supplement the suppression pool cooling mode of operation. However, containment spray is not required for adequate containment cooling or pressure suppression. It is a supplemental mode of RHR system operation that can be used for containment cooling if desired. The condition reported in this LER would have only occurred due to a seismic event.

The lower drywell spray and suppression pool spray modes of RHR operation, both supplemental containment cooling methods, and the required suppression pool cooling mode of RHR operation were available and unaffected by the conditions described in this LER. Since the loss of the upper containment spray function would not impact safe operation or shutdown of the plant, and multiple redundant methods of containment cooling were available, this event had no safety significance.

Similar Events

They are no past events at WNP-2 involving failure to properly support flexible conduits. Past LERs dealing with improperly implemented design requirements include LER 92-034 related to room flood seals and LER 93-014 related to backup overcurrent protection for containment penetrations.

EIIS Information

Text Reference

MS-PS-48A and C
RHR-V-16A and 17A
Upper Drywell Spray
Lower Drywell Spray
Suppression Pool Spray
Residual Heat Removal (RHR)

EIIS Reference

<u>System</u>	<u>Component</u>
SB	PS
BO	INV
BO	---
BO	---
BO	---
BO	---

