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JAFP-92-0002

United States Nuclear Regulatory Commission
Document Control Desk
Mail Station P1-137
Washington, D.C. 20555

SUBJECT: DOCKET NO. 50-333
LICENSEE EVENT REPORT: 91-030-00
UNDOCUMENTED ASSEMBLY IN PRIMARY CONTAINMENT
HIGH RADIATION MONITOR

Dear Sir:

This report is submitted in accordance with 10 CFR 50.73(a)(2)(vii).

Questions concerning this report may be addressed to Mr. Mark Abramski at (315) 349-6596.

Very truly yours,

RADFORD J. CONVERSE

RJC:MA:nrb

Enclosure

cc: USNRC, REGION I
USNRC Resident Inspector
INPO Records Center

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1): JAMES A. FITZPATRICK NUCLEAR POWER PLANT

DOCKET NUMBER (2): 0 5 0 0 0 3 3 3

PAGE (3): 1 OF 0 4

TITLE (4): UNDOCUMENTED ASSEMBLY IN PRIMARY CONTAINMENT HIGH RADIATION MONITOR

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)
1 2	0 3	9 1	9 1	- 0 3 0	- 0 0	0 1	0 2	9 2		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9): N

POWER LEVEL (10): 0 0 0

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

	20.402(b)		20.405(c)
	20.405(a)(1)(i)		50.73(a)(2)(iv)
	20.405(a)(1)(ii)	X	50.73(a)(2)(v)
	20.405(a)(1)(iii)		50.73(a)(2)(vii)
	20.405(a)(1)(iv)		50.73(a)(2)(viii)(A)
	20.405(a)(1)(v)		50.73(a)(2)(viii)(B)
	50.73(a)(2)(i)		50.73(a)(2)(x)
	50.73(a)(2)(ii)		73.71(b)
	50.73(a)(2)(iii)		73.71(c)
			OTHER (Specify in Abstract below and in Text, NRC Form 366A)

LICENSEE CONTACT FOR THIS LER (12)

NAME: MARK ABRAMSKI

TELEPHONE NUMBER: AREA CODE 3 1 5 — 3 4 9 - 6 5 9 6

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)

X YES (If yes, complete EXPECTED SUBMISSION DATE) — NO

EXPECTED SUBMISSION DATE (15): MONTH 0 4 | DAY 0 1 | YEAR 9 2

ABSTRACT

EIIS Codes are in [ ]

During the week of 12/9/91, the high range primary containment radiation monitors (HRCMs) [IL] installation and application was being evaluated to determine the reason for the history of abnormally high susceptibility to electromagnetic interference (EMI) (see LER 91-001 91-018, 91-022, and 91-029). During the course of this evaluation, an undocumented assembly was found in the signal input path to each of the two radiation monitors. The vendor for the radiation monitors was contacted to determine the function of this assembly. The vendor indicated that this assembly may be diagnostic test equipment and that the assembly may have an adverse effect on the performance of the radiation monitors under high primary containment [WH] drywell temperature conditions that could exist during a Loss of Coolant Accident (LOCA). A detailed analysis is being performed to quantify the effect of the undocumented assembly on primary containment high range radiation monitor performance. A supplemental LER will be submitted when this analysis is complete.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
JAMES A. FITZPATRICK NUCLEAR POWER PLANT	0 5 0 0 0 3 1 3	9 1	— 0 3 0	— 0 0	0 2 OF 0 4

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

DESCRIPTION

EIIS Codes are in [ ]

During the week of 12/9/91, the plant was in the cold shutdown condition. An evaluation was being performed to determine the reason for high electromagnetic interference (EMI) susceptibility in the primary containment high radiation containment monitors (HRCMs) [IL]. This evaluation was performed by plant engineering and technical staff with the assistance of a contractor technical specialist. The scope of this evaluation was to address both the HRCM application and installation.

During the conduct of this evaluation, an assembly was found in the HRCM signal input path that was not documented in plant drawings or technical manuals. Plant design, purchasing, installation and maintenance records were reviewed in an attempt to determine the origin and function of this assembly. No records have been identified to date that establish the intended application or date of procurement of the assembly. Initial installation records do indicate that EMI induced spurious actuations were a suspected problem during pre-operational testing, therefore, it is believed that these assemblies may have been installed at that time.

The original vendor (General Atomics) no longer supports the HRCM equipment, so the current vendor (Sorrento) was contacted in an attempt to determine the function of this assembly and its potential effect on the EMI susceptibility of the HRCM. The vendor indicated that a low pass filter had been used on occasion as a diagnostic aid to demonstrate the presence of EMI induced electrical noise. The vendor also indicated that this low pass filter is not intended to remain as part of a permanent installation as it may introduce a non-conservative error in radiation signal levels when the signal cable is exposed to high temperature conditions such as those that may exist during a LOCA. The reason for this is that the signal cable to shield resistance is reduced when the signal cable to shield dielectric temperature increases. The presence of the filter assembly in the signal path may create a voltage dividing circuit that decreases the detected signal level to the monitor due to the lowered signal cable to shield resistance.

CAUSE

Because these assemblies are not identified or referenced on controlled plant documentation, the root cause of this event is inadequate program implementation of 10CFR50, Appendix B requirements. Based on a review of available plant documentation, the most likely contributor to this was inadequate equipment status control and inadequate work control processes. At the time that these assemblies are believed to have been installed, the mechanism for tracking temporary equipment installation (jumpers) was inconsistently applied. The initial troubleshooting efforts were performed by contractor personnel who were likely not familiar with the use of jumpers and who, in the course of troubleshooting, apparently corrected the primary cause of intermittent actuations at that time and may have simply forgotten to remove the assemblies.

ANALYSIS

This event is reportable under the provisions of 10 CFR50.73(a)(2)(vii). This event is reportable because the presence of this assembly may render the HRCMs inoperable due to the introduction of non-conservative errors in the detected radiation level signals at the input to the HRCMs. This could lead to delays in isolating containment vent and purge isolation valves. This could also result in conflicting estimates of core damage between the method that uses the HRCMs to provide an estimate of core damage and the Post Accident Sampling system [IP] sample results.

A detailed analysis is in progress to quantify the effect that the presence of the undocumented assemblies have on HRCM performance under all required operational conditions. This analysis will address the cumulative effect of the assemblies input impedance and the temperature effects (signal cable to shield insulation resistance losses) on the HRCM signal cables. This analysis will also address the effect that these undocumented assemblies have on the EMI susceptibility of the HRCMs. The results of this analysis will be documented and submitted in a supplement to this LER.

CORRECTIVE ACTION

Test results obtained following discovery of the undocumented filter assemblies have verified that the filter assemblies are not required for the proper operation of the HRCMs, therefore, the specific corrective actions to be implemented are as follows:

1. The signal cables will be shortened and rerouted to mitigate the undesired adverse effects of EMI.

2. The filter assemblies will be removed and the system restored to its design baseline configuration prior to startup from the 1992 Refuel Outage. In addition, the assemblies will have their contents verified in order to complete the aforementioned analysis.

ADDITIONAL INFORMATION

LERs 91-001, 91-018, 91-022, and 91-029 document Emergency Safety Function actuations [JE] which were the result of the effects of EMI on the HRCMs.