Consumers Power
POWERING MICHIGAN'S PROGRESS
Palisades Nuclear Plant: 27780 Blue Star Memorial Highway, Covert, MI 49043

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General Manager

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Nuclear Regulatory Commission
Document Control Desk
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DOCKET 50-255 - LICENSE DPR-20 - PALISADES PLANT -
LICENSEE EVENT REPORT 92-012; LACK OF ENVIRONMENTAL QUALIFICATION FOR THE MAIN STEAM LINE RADIATION ELEMENTS RE-2323 AND RE-2324

Licensee Event Report (LER) 92-012 is attached. This event is reportable to the NRC per 10CFR50.73(a)(2)(ii)(B) as a condition outside the design basis of the plant.

Gerald B Slade
General Manager

CC Administrator, Region III, USNRC
NRC Resident Inspector - Palisades

Attachment

230116

PALISADES NUCLEAR PLANT

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1/1

NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Palisades Plant	0 5 0 0 0 2 5 5	1 OF 0 4

TITLE (4) LACK OF ENVIRONMENTAL QUALIFICATION FOR THE MAIN STEAM LINE RADIATION ELEMENTS RE-2323 AND RE-2324

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 2	1 4	9 2	9 2	- 0 1 2	- 0 0	0 3	1 6	9 2	N/A	0 5 0 0 0
									N/A	0 5 0 0 0

OPERATING MODE (9)	N	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)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(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)	X 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)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Cris T Hillman, Staff Licensing Engineer	AREA CODE 6 1 6 7 6 4 - 8 9 1 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)		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)

ABSTRACT

On February 14, 1992, at approximately 0800 hours, it was determined that the main steam line radiation elements (RE-2323 and RE-2324) were not environmentally qualified as required by Regulatory Guide 1.97 and 10 CFR 50.49. At the time the determination was made, the plant was in cold shutdown for the 1992 refueling outage.

The root cause of this event appears to be personnel error in that there was a lack of attention to detail in both the modification which installed the main steam line radiation elements and the development of the list of RG 1.97 variables.

The corrective action for this event is to either modify the main steam line radiation elements to meet the requirements of RG 1.97, Category 2 or provide justification for an exemption to the requirements of RG 1.97 for these instruments.

EVENT DESCRIPTION

On February 14, 1992, at approximately 0800 hours, it was determined that the main steam line radiation elements (RE-2323 and RE-2324) [SB;RE] were not environmentally qualified as required by Regulatory Guide (RG) 1.97 and 10 CFR 50.49. At the time the determination was made, the plant was in cold shutdown for the 1992 refueling outage. RE-2323 and RE-2324 are designated as the radiation elements which fulfill the NUREG 0737 requirement for post accident monitoring of radioactive noble gas as described in the Palisades Final Safety Analysis Report (FSAR), Appendix 7C, Item E03B.

This event is reportable to the NRC per 10CFR50.73(a)(2)(ii)(B) as a condition outside the design basis of the plant.

CAUSE OF THE EVENT

The root cause of this deviation appears to be personnel error in that there was a lack of attention to detail in both the modification which installed the main steam line radiation elements and the development of the list of RG 1.97 variables. During the early 1980s there were a significant number of initiatives underway which resulted from the TMI accident. These initiatives included incorporating design changes mandated by NUREG-0737, performing the Palisades Systematic Evaluation Program (SEP) and developing the environmental qualification program. There appears to have been a lack of coordination and communication between the various individuals performing these activities. This lack of coordination and communication appears to have resulted in the individuals not being cognizant of the fact that the room where the main steam line elements were located was considered a harsh environment.

This event did not involve the failure of any equipment important to safety.

ANALYSIS OF THE EVENT

The main steam line radiation elements (RE-2323 and RE-2324) were installed in 1981 in response NUREG-0737, Item II.F.1 *"Additional Accident Monitoring Instrumentation,"* to provide indication of releases of radioactive fission product gases from the plant. The main steam line radiation elements were specifically provided to monitor potential releases via the atmospheric steam dumps and/or secondary system safety relief valves. The design requirements for the post accident effluent radiation monitors were provided in Table II.F.1-1 of NUREG-0737. This table required that the radiation instrumentation be qualified to *"...provide sufficiently accurate responses to perform the intended function in the environment to which they will be exposed during accidents."*

The main steam line radiation elements are installed in the main steam line penetration room which is located directly above the component cooling water (CCW) room. This area is defined as a harsh environment for a main steam line break (MSLB) accident outside of containment. Although the radiation elements

were installed in a harsh environment, the facility change (FC-494-5) which incorporated these instruments into the plant made no mention of special environmental conditions to be considered as part of the design. As a result, the radiation elements were procured as non-Class 1E equipment. No environmental qualification design features were discussed in the purchase documentation.

On December 17, 1982, the NRC issued Generic Letter 82-33, *"Supplement 1 to NUREG-0737-Requirements for Emergency Response Capability."* This generic letter required that each licensee provide instrumentation meeting the requirements of RG 1.97 to assess plant and environs conditions during and following an accident. RG 1.97, Table 3, provides a list of variables to be included in pressurized water reactor (PWR) designs. In this table, steam generator safety relief valves and/or atmospheric dump valves are listed as locations where airborne radioactive materials which could potentially be released from the plant are to be monitored. Table 3 of RG 1.97 classifies the main steam line radiation elements as Category 2. Category 2 instruments are to be environmentally qualified as defined by Table 2, Item 1, of the RG 1.97.

On September 13, 1983, Consumers Power Company provided to the NRC information related to Palisades conformance to the requirements of RG 1.97. This letter indicated that the main steam line radiation elements (RE-2323 and RE-2324) complied with the requirements of RG 1.97, Category 2, including requirements related to environmental qualification. Information provided in this and subsequent letters to the NRC formed the basis for the development of the Palisades Final Safety Analysis Report (FSAR), Appendix 7C, which indicates the extent of Palisades compliance with RG 1.97.

The main steam line radiation monitors are required to be operable above 325°F by Technical Specification Table 3.24-2, Item 5. Due to the requirements related to the location of the electronics in relation to the detector, the main steam line radiation elements (RE-2323 and RE-2324) cannot be relocated outside of the area where they are presently located. As these elements are not qualified as described in the FSAR, they were declared inoperable. For this condition, the Palisades Technical Specifications, Table 3.24-2, Item 5a, requires that the pre-planned alternate method of monitoring main steam line radiation be implemented and that a special report be provided to the NRC within 30 days of the event. The alternate method of monitoring post accident main steam line radiation is to utilize radiation monitors installed on the auxiliary building roof. This alternative method of monitoring radioactive effluent noble gases will be employed until the corrective action for this event can be implemented.

CORRECTIVE ACTION

The corrective action for this event is to either modify the main steam line radiation elements to meet the requirements of RG 1.97, Category 2 or provide justification for an exemption to the requirements of RG 1.97 for these instruments. This activity will be completed in the 1993 refueling outage.

A complete review of all RG 1.97, Category 2, variables was performed by the Configuration Control Project in response to this and other deviation reports where non-environmentally qualified instruments were identified. This review identified a total of three RG 1.97, Category 2 instruments located in harsh environments which were not adequately environmentally qualified. As this review identified all potential problems associated with environmental qualification of RG 1.97 instrumentation, no further reviews are recommended.

ADDITIONAL INFORMATION

This licensee event report fulfills the technical specifications requirement to provide a special report to the NRC within 30 days of the event. This requirement is described in Palisades Technical Specifications Table 3.24-2, Item 5a.