NMC
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Palisades Nuclear Plant
Operated by Nuclear Management Company, LLC

September 27, 2005

10 CFR 50.73(a)(2)(i)(B)
10 CFR 50.73(a)(2)(v)(D)

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Palisades Nuclear Plant
Docket 50-255
License No. DPR-20

Licensee Event Report 05-002-01, Emergency Diesel Generator 1-2 Excessively Loaded In Certain Postulated Post-Accident Scenarios

Supplemental Licensee Event Report (LER) 05-002-01 is enclosed. The event was originally reported on April 14, 2005, in accordance with 10 CFR 50.73(a)(2)(i)(B) and 10 CFR 50.73(a)(2)(v)(D). At that time, the evaluation of the safety significance was incomplete. The enclosed supplemental LER provides the updated safety significance information.

Summary of Commitments

This letter contains no new commitments and no revisions to existing commitments.

Paul A. Harden
Site Vice President, Palisades Nuclear Plant
Nuclear Management Company, LLC

Enclosure (1)

CC Administrator, Region III, USNRC
Project Manager, Palisades, USNRC
Resident Inspector, Palisades, USNRC

IE22

27780 Blue Star Memorial Highway • Covert, Michigan 49043-9530
Telephone: 269.764.2000

ENCLOSURE 1

LER 05-002-01, EMERGENCY DIESEL GENERATOR 1-2 EXCESSIVELY LOADED IN CERTAIN POSTULATED POST-ACCIDENT SCENARIOS

3 Pages Follow

NRC FORM 366 (6-2004) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 6-30-2007

Estimated burden per response to comply with this mandatory collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0066), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
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TITLE (4)

Emergency Diesel Generator 1-2 Excessively Loaded In Certain Postulated Post-Accident Scenarios

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
02	17	2005	2005	-- 002 --	01	09	27	2005	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	1
POWER LEVEL (10)	100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR •: (Check all that apply) (11)

20.2201(b)		20.2203(a)(3)(ii)		50.73(a)(2)(ii)(B)		50.73(a)(2)(ix)(A)	
20.2201(d)		20.2203(a)(4)		50.73(a)(2)(iii)		50.73(a)(2)(x)	
20.2203(a)(1)		50.36(c)(1)(i)(A)		50.73(a)(2)(iv)(A)		73.71(a)(4)	
20.2203(a)(2)(i)		50.36(c)(1)(ii)(A)		50.73(a)(2)(v)(A)		73.71(a)(5)	
20.2203(a)(2)(ii)		50.36(c)(2)		50.73(a)(2)(v)(B)		OTHER Specify in Abstract below or in NRC Form 366A	
20.2203(a)(2)(iii)		50.46(a)(3)(ii)		50.73(a)(2)(v)(C)			
20.2203(a)(2)(iv)		50.73(a)(2)(i)(A)	X	50.73(a)(2)(v)(D)			
20.2203(a)(2)(v)	X	50.73(a)(2)(i)(B)		50.73(a)(2)(vii)			
20.2203(a)(2)(vi)		50.73(a)(2)(i)(C)		50.73(a)(2)(viii)(A)			
20.2203(a)(3)(i)		50.73(a)(2)(ii)(A)		50.73(a)(2)(viii)(B)			

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Daniel G. Malone	(269) 764-2463

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
	YES (If yes, complete EXPECTED SUBMISSION DATE).	X NO				

ABSTRACT

On February 17, 2005, with the plant operating at approximately 100% power, a latent design inadequacy was discovered which affects the emergency diesel generator (EDG) 1-2 load analysis. For certain postulated post-accident scenarios, it was determined that the pressurizer heaters that are powered from 2400V safety bus 1-D, may automatically re-energize after initially being shed. As a result of the additional load, EDG 1-2 would become overloaded, and could trip on over-current.

This is reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by the plant's Technical Specifications, and 10 CFR 50.73(a)(2)(v)(D) as a condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident.

The condition was caused by a circuit modification that was implemented in 1986. The modification removed an original plant design feature that blocked automatic restoration of pressurizer heaters with a safety injection signal (SIS) present.

A temporary modification was subsequently completed to preclude the pressurizer heater supply breaker from automatically re-closing when pressurizer level recovers.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 of 3
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TEXT *(If more space is required, use additional copies of NRC Form 366A)* (17)

EVENT DESCRIPTION

On February 17, 2005, with the plant operating at approximately 100% power, a latent design inadequacy was discovered which affects the emergency diesel generator (EDG) 1-2 [DG;EK] load analysis. For certain postulated post-accident scenarios, it was determined that the pressurizer heaters [PZR/EHTR;AB] that are powered from 2400V safety bus 1-D [BU;EB], may automatically re-energize after initially being shed. As a result of the additional load, EDG 1-2 would become overloaded, and could trip on over-current.

Breaker 152-211 [BKR;EB], supplies power to the pressurizer heaters from bus 1-D. The breaker automatically opens in response to a sustained undervoltage condition on bus 1-D, and is not automatically reconnected to the bus via the load sequencer, when the bus is subsequently re-powered by EDG 1-2. However, following a review of plant drawings and documents, it was concluded that if certain conditions exist, primarily restoration of pressurizer level after an initial low pressurizer level condition, the breaker will automatically close, adding the pressurizer heater load to EDG 1-2. The added load was not previously identified in the EDG 1-2 load calculations.

Certain Final Safety Analysis Report (FSAR) design basis accident scenarios may result in an initial lowering of pressurizer level, with subsequent pressurizer level restoration (e.g. small break loss of coolant accident or main steam line break). For these scenarios, concurrent with other postulated design basis accident assumptions of loss of offsite power and failure of the opposite EDG, EDG 1-2 would be relied upon for powering safety related equipment, but would become overloaded by the pressurizer heater load.

This condition applies only to EDG 1-2. Pressurizer heaters cannot be powered from the redundant 2400V safety bus 1-C and EDG 1-1 without manual action.

This is reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by the plant's Technical Specifications, and 10 CFR 50.73(a)(2)(v)(D) as a condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident.

CAUSE OF THE EVENT

Original plant design incorporated automatic isolation of pressurizer heater breaker 152-211 when a safety injection signal (SIS) was present. Automatic closure of the breaker was blocked until the SIS actuation signal was reset.

In December 1986, a circuit modification was implemented to eliminate the SIS blocking feature for automatic re-closure of pressurizer heater breaker 152-211. Consideration for the possibility of

overloading EDG 1-2 with the added load of the pressurizer heaters was not satisfactorily addressed. Based on review of documentation associated with the modification, the only accident scenario that was considered was a large break loss of coolant accident (LBLOCA). In a LBLOCA, pressurizer level is assumed to not recover sufficiently to allow for automatic re-closure of pressurizer heater breaker 152-211.

SAFETY SIGNIFICANCE

The safety significance of the event is considered to be minimal, based on a qualitative review of FSAR safety analyses that credit emergency diesel generator operation for event mitigation. The review identified that for the accident analyses that could result in the described condition, alternate mitigating strategies are procedurally directed which enable successful response to the events. The alternate mitigating strategies include continued heat removal via feeding and steaming the steam generators [SG;AB], and passive makeup provided by the safety injection tanks [TK;BP]. In addition, the described condition would not be expected to occur until after peak fuel cladding temperature has occurred. Diagnosis and restoration of the EDG are procedurally directed, allowing recovery of emergency onsite power to mitigating equipment trains.

CORRECTIVE ACTIONS

EDG 1-2 was declared inoperable when the design inadequacy was confirmed.

A temporary modification was subsequently completed to preclude pressurizer heater breaker 152-211 from automatically re-closing when pressurizer level recovers.

A review of bus 1-C and bus 1-D loads was completed to confirm the loading assumptions for the EDGs. No additional discrepancies were identified.

PREVIOUS SIMILAR EVENTS

None