

Entergy Nuclear Operations, Inc. Palisades Nuclear Plant 27780 Blue Star Memorial Highway Covert, MI 49043 Tel 269 764 2000

Anthony J. Vitale Site Vice President

PNP 2013-093

January 06, 2014

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

SUBJECT: Discovery of Latent Design Deficiency Results in Non-Compliance with 10 CFR 50 Appendix R Palisades Nuclear Plant Docket 50-255 License No. DPR-20

Dear Sir or Madam:

The enclosed Licensee Event Report (LER), 2013-004-00, is submitted in accordance with 10 CFR 50.73(a)(2)(ii)(B) due to discovery of an unanalyzed condition resulting in non-compliance with 10 CFR 50 Appendix R.

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

Sincerely,

Whth/

ajv/tad

Attachment: LER 2013-004, Discovery of Latent Design Deficiency Results in Non-Compliance with 10 CFR 50 Appendix R

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

ATTACHMENT

LER 2013-004

DISCOVERY OF LATENT DESIGN DEFICIENCY RESULTS IN NON-COMPLIANCE WITH 10 CFR 50 APPENDIX R

3 Pages Follow

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ILS NUCLEAR REGULATORY COMMISSION								APPROVED BT UMB NO. 3150-0104 EXPIRES 10/31/2013							
(10-2010) LICENSEE EVENT REPORT (LER) (See reverse for required number of								Estimated burden per response to comply with this mandatory information collection request 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose 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.							
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On November 7, 2013, during an operating experience applicability review, a latent design deficiency was discovered. The design deficiency represents an unanalyzed condition during a postulated fire event. Potential fire induced cable faults could result in a loss of capability to safely shutdown the plant.

Palisades' station batteries contain shunts in the positive leg of output current flow. The shunts provide a voltage signal to ammeters located in the adjacent cable spreading room area. In the unlikely event of the postulated fire scenario, which is a primary fire in the cable spreading room or in a station battery room, the ammeter circuit wiring could experience fire-induced cable faults, allowing current flow greater than the rating of the wires. Current flow exceeding the rating of the wires would likely result in the wires overheating, potentially causing a secondary fire at some point along the path of the wires or causing damage to adjacent cables/wires. That is, a secondary fire could be created in an additional fire area as well as the originating fire area.

The cause of the unanalyzed condition for the postulated fire event was a failure to recognize the described failure mode and identify the fault consequences for the cables of concern during previous design reviews required for 10 CFR 50 Appendix R. Planned corrective actions to address this condition include the design and implementation of a permanent plant modification to install fuses in the ammeter indication circuits.

NRC FORM 366A U.S. NUCLEAR REGULATORY COMMISSION (10-2010) LICENSEE EVENT REPORT (LER) CONTINUATION SHEET											
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EVENT DESCRIPTION

On November 7, 2013, with the plant operating in Mode 1 at 100% power, during a review of operating experience report, ICES-305419-20130810, "Un-fused remote DC ammeter circuits could result in secondary fires due to multiple fire induced faults," a similar latent design deficiency was identified at Palisades. The design deficiency represents an unanalyzed condition during a postulated fire event. Contrary to the requirements of 10 CFR 50 Appendix R, Section III.G, potential fire-induced cable faults could result in a fire in two different fire areas and subsequent loss of capability to safely shut down the plant.

Palisades' station batteries [EJ] contain shunts in the positive leg of output current flow. The shunts provide a voltage signal, proportional to the output current flow of the batteries, to ammeters located in the adjacent cable spreading room area. In the unlikely event of the postulated fire scenario, which is a primary fire in the cable spreading room or in a station battery room, the ammeter circuit wiring could experience fire-induced cable faults, allowing current flow greater than the rating of the wires. Current flow exceeding the rating of the wires would likely result in the wires overheating, potentially causing a secondary fire at some point along the path of the wires or causing damage to adjacent cables/wires. That is, a secondary fire could be created in an additional fire area as well as the originating fire area.

The design deficiency did not impact the performance of any other component functions, and no other safety functions were impacted as a result of this event. The condition would not have prevented the fulfillment of a safety function, as the condition did not result in a safety system functional failure as defined by 10 CFR 50.73(a)(2)(v).

CAUSE OF THE EVENT

The cause of the unanalyzed condition, for the postulated fire event, was a failure to recognize the described failure mode and identify the fault consequences for the cables of concern during previous design reviews required for 10 CFR 50 Appendix R.

CORRECTIVE ACTIONS TAKEN

Hourly fire watch tours were implemented as a compensatory measure for the affected areas.

CORRECTIVE ACTIONS TO BE TAKEN

The planned corrective actions to address this condition include the design and implementation of a permanent plant modification to install fuses in the ammeter indication circuits.

ASSESSMENT OF SAFETY CONSEQUENCES

There were no adverse safety consequences that resulted from the identified conditions, as there was no actual fire in the affected areas. Entergy Nuclear Operations, Inc. considers that fire protection administrative controls, the availability of fire detection and suppression systems, hourly fire watch tours and a trained on-site fire brigade, make it highly unlikely that a fire could occur and progress in a manner that results in the fire-induced failures of concern.

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Additionally, for hypothetical fires that could progress in a manner that results in the fire-induced failures of concern, the coincident combinations of failures required to result in the specific circuit failures that cause secondary fires or secondary cable damage are even less likely to occur.

The hourly fire watch tours provide a compensatory measure that would promptly identify and extinguish a fire to minimize the fire impact, and provide assurance that the identified scenarios would not jeopardize post-fire safe shutdown capability during the interim time period prior to implementation of actions required for permanent issue resolution.

PREVIOUS SIMILAR EVENTS

LER 2010-003-00, Unanalyzed Condition Discovered Due to Non-Compliance with 10 CFR 50 Appendix R