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

Charles F. Arnone
Site Vice President

PNP 2017-043

July 17, 2017 10 CFR 50.73

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

SUBJECT: Reactor Protection System Actuation While the Reactor was Shutdown

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

Dear Sir or Madam:

Entergy Nuclear Operations, Inc., submits the enclosed Licensee Event Report, 2017-002-00, in accordance with 10 CFR 50.73 for the Palisades Nuclear Plant. This report details a reactor protection system actuation while the reactor was shutdown.

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

Sincerely,

CFA/tad

Attachment: LER 2017-002-00, Reactor Protection System Actuation While the Reactor was Shutdown

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

ATTACHMENT

LER 2017-002-00

REACTOR PROTECTION SYSTEM ACTUATION WHILE THE REACTOR WAS SHUTDOWN

2 Pages Follow

NRC FORM 366 (04-2017) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 03/31/2020

LICENSEE EVENT REPORT (LER)

(See Page 2 for required number of digits/characters for each block)

(See NUREG-1022, R.3 for instruction and guidance for completing this form http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Palisades	05000255	1 OF 2

4. TITLE

Reactor Protection System Actuation While the Reactor was Shutdown

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
										05000
05	19	2017	2017	002	00	07	17	2017	FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*			
5	☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
	☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
	☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
	☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☒ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
10. POWER LEVEL	☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
0%	☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
	☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(C)	☐ 73.77(a)(1)
	☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(D)	☐ 73.77(a)(2)(i)
	☐ 20.2203(a)(2)(vi)	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(vii)	☐ 73.77(a)(2)(ii)
		☐ 50.73(a)(2)(i)(C)	☐ OTHER Specify in Abstract below or in NRC Form 366A	

12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT	TELEPHONE NUMBER *(Include Area Code)*
Jeff Hardy, Regulatory Assurance Manager	269-764-2011

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

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

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

ABSTRACT *(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)*

On May 19, 2017, at 0206 hours, an unexpected Reactor Protection System (RPS) actuation occurred during pre-startup testing. The reactor was shutdown at the time, with all control rods inserted. The portion of the test that was in progress is designed to actuate the RPS from a loss of load input signal. To facilitate this part of the test with the reactor in a shutdown mode, one of two conditional steps in the procedure is to be taken. The generator motor operated disconnect 389 (MOD-389) is required to be in the open position, or protective trip circuity for the generator is required to be bypassed. Due to a conditional step of the test procedure being misinterpreted by a Nuclear Control Operator (NCO), MOD-389 was left in the closed position and the generator protective trip circuity was not bypassed. This resulted in the RPS actuation occurring prior to the preplanned sequence. The RPS responded as designed. All components operated as expected for the plant conditions.

The cause of the unexpected RPS actuation was human performance errors during procedure performance, e.g., lack of self-validation/verification, misinterpretation of information, and lack of peer check verification.

Corrective actions from the event include the removal of the NCO's licensed operator qualifications until remediated and initiation of a standing order requiring peer check verification for all procedure conditional steps until the applicable administrative procedure is revised. Additionally, a case study of the event will be included in a 2017 operations high intensity training session.

LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET

(See NUREG-1022, R.3 for instruction and guidance for completing this form http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Palisades	05000-255	2017	- 002	- 00

NARRATIVE

EVENT DESCRIPTION

On May 19, 2017, at 0206 hours, an unexpected Reactor Protection System (RPS) actuation occurred during pre-startup testing. The reactor was shutdown at the time, with all control rods inserted. The portion of the test that was in progress is designed to actuate the RPS on loss of load signal. To facilitate this part of the test with the reactor in a shutdown mode, one of two conditional steps in the procedure is to be taken. The generator motor operated disconnect 389 (MOD-389) is required to be in the open position, or protective trip circuity for the generator is required to be bypassed. Due to a conditional step of the test procedure being misinterpreted by a Nuclear Control Operator (NCO), MOD-389 was left in the closed position and the generator protective trip circuity was not bypassed. This resulted in the RPS actuation occurring prior to the preplanned sequence. The RPS responded as designed. All components operated as expected for the plant conditions. No structures, components, or systems were inoperable at the start of the event that contributed to the event. A Safety System Functional Failure, as defined in Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," did not occur.

CAUSE OF THE EVENT

A conditional step in the test procedure required the NCO to verify the status of MOD-389. The procedure logic directs the sequence of subsequent test steps based on the open/close status of MOD-389. If MOD-389 is closed, opening of a sliding link is required to bypass protective trip circuity for the generator. The NCO failed to correctly identify that MOD-389 was in the closed position. Believing MOD-389 was open, the next conditional step in the procedure to bypass the protective trip circuity for the generator was not performed. A subsequent step in the procedure, to manipulate a switch that activates turbine trip output functions, requires a peer check verification to ensure the correct switch is manipulated. The NCO obtained peer check support from a second NCO. As required by the test procedure, the second NCO only peer checked the step that ensures the correct switch was manipulated. The previous conditional step, to ensure MOD-389 was in the open position, did not require peer check verification.

The cause of the unexpected RPS actuation was human performance errors during procedure performance, e.g., lack of self-validation/verification, misinterpretation of information and lack of peer check verification.

ASSESSMENT OF SAFETY CONSEQUENCES

There were no adverse safety consequences as a result of this event. The reactor was shutdown in Mode 5 at the time of the event, with all control rods inserted. The unexpected RPS actuation did not cause the loss of systems or components that are needed to maintain safe shutdown conditions, remove residual heat, control the release of radioactive material, or mitigate the consequences of an accident. All plant systems responded as designed.

CORRECTIVE ACTIONS

Corrective Actions Taken:
The NCO's licensed operator qualifications were removed until formal remediation was completed. A standing order was initiated to immediately require peer check verification of all procedure conditional steps.

Corrective Actions Planned:
Develop criteria that would require peer check verification of procedure conditional steps. Once the criteria are established, the applicable administrative procedure will be revised to add guidance for performance of peer check verifications associated with conditional steps in procedures. Additionally, a case study of the event will be developed and included in a 2017 operations high intensity training session.

PREVIOUS SIMILAR EVENTS

None.