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June 11, 2018

AEP-NRC-2018-43
10 CFR 50.73

Docket No.: 50-316

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
11555 Rockville Pike
Rockville, MD 20852

Donald C. Cook Nuclear Plant Unit 2
LICENSEE EVENT REPORT 316/2018-002-00
Unit 2 Component Cooling Water System Inoperable Longer Than Allowed by Technical Specifications

In accordance with 10 CFR 50.73, Licensee Event Report (LER) System, Indiana Michigan Power Company, the licensee for Donald C. Cook Nuclear Plant Unit 2, is submitting as an enclosure to this letter the following report:

LER 316/2018-02-00: Unit 2 Component Cooling Water System Inoperable Longer Than Allowed by Technical Specifications.

There are no commitments contained in this submittal.

Should you have any questions, please contact Mr. Michael K. Scarpello, Regulatory Affairs Director, at (269) 466-2649.

Sincerely,

Q. Shane Lies
Site Vice President

SJM/mll

Enclosure: Licensee Event Report 316/2018-002-00: Unit 2 Component Cooling Water System Inoperable Longer Than Allowed by Technical Specifications

IE22
NRR

c: R. J. Ancona – MPSC
A .W. Dietrich – NRC Washington, DC
MDEQ – RMD/RPS
NRC Resident Inspector
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Enclosure to AEP-NRC-2018-43

Licensee Event Report 316/2018-002-00
Unit 2 Component Cooling Water System Inoperable Longer Than Allowed by Technical Specifications

NRC FORM 366 (04-2018) U.S. NUCLEAR REGULATORY COMMISSION

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

Estimated burden per response to comply with this mandatory 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 Information Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@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 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 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
Donald C. Cook Nuclear Plant Unit 2	05000316	1 OF 4

4. TITLE

Unit 2 Component Cooling Water System Inoperable Longer Than Allowed By Technical Specifications

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
04	13	2018	2018	002	00	06	11	2018	FACILITY NAME	DOCKET NUMBER 05000

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*			
6	☐ 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)
NA	☐ 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)*
Michael K. Scarpello, Regulatory Affairs Director	(269) 466-2649

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
X	CC	SHV	Henry Pratt	Y					

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 14 single-spaced typewritten lines)*

On April 13, 2018, Unit 2 was in a refueling outage with the reactor defueled. A leak test of the Unit 2 Component Cooling Water (CCW) Pump Discharge Crosstie Train A Shutoff Valve failed to meet acceptance criteria and the valve was declared inoperable. The cause of the failed test was due to the as-found closed torque value being lower than the recommended minimum. The valve closed torque setting was adjusted and a subsequent leak rate test was acceptable.

The failed test was untimely because it is required by Section XI of the American Society of Mechanical Engineers Code, but was performed for the first time due to being excluded from the inservice testing program as identified during inspection activities in November 2015. A past operability review determined the Unit 2 Train A CCW System was inoperable prior to December 3, 2015, at which time a temporary modification was approved to add a safety related make up water supply to the Unit 2 CCW System. A review of other equipment or systems redundant to Train A indicated occurrences when opposite train equipment was declared inoperable prior to December 3, 2015.

The event is reportable as an Operation or Condition Prohibited by Technical Specifications in accordance with 10 CFR 50.73(a)(2)(i)(B) and a Condition that Could Have Prevented the Fulfillment of a Safety Function in accordance with 10 CFR 50.73(a)(2)(v).

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Donald C. Cook Nuclear Plant Unit 2	05000316	2018	002	00

NARRATIVE

EVENT DESCRIPTION

On April 13, 2018, Unit 2 was in a refueling outage with the reactor defueled. A leakage test of the Unit 2 Component Cooling Water (CCW) Pump Discharge Crosstie Train A Shutoff Valve [CC][SHV] was performed. The valve failed to meet its acceptance criteria and was declared inoperable. The valve is a Henry Pratt Model N-2F2. The failed leakage test was performed to address a performance deficiency identified during the Component Design Basis Inspection in November 2015, which was failure to verify the CCW System design capability to isolate a postulated CCW System out-leakage. Specifically, the CCW isolation valves were not periodically leak tested and the CCW system design and plant procedures did not provide for a safety related make up source to the CCW System to account for out-leakage. On December 3, 2015, a temporary modification was approved to provide procedures for a safety related make up water supply source through a staged hose from the Essential Service Water System [BI] to the Unit 2 CCW System. CCW Train separation valves were added to the inservice testing (IST) program for leak testing.

The failed test was considered untimely because it is required by Section XI of the American Society of Mechanical Engineers (ASME) Code, and was being performed for the first time due to being erroneously excluded from the IST program as identified during inspection activities in November 2015. The Train A CCW System was considered inoperable, as the excessive leak rate condition that was discovered could drain one side of the CCW Surge Tank [TK] in less than the required 30 day mission time of the CCW System under certain out-leakage scenarios.

Subsequent valve diagnostic testing was performed and the as-found closed torque value was found lower than the recommended minimum setpoint. The valve closed torque setting was adjusted to a value above the recommended minimum setpoint. A subsequent leak rate test was performed and was within acceptable limits. The valve was considered operable on April 26, 2018.

NUREG-1022, "Event Reporting Guidelines", provides guidance for determining the reporting category and requirement for each condition. Additionally, 10 CFR 50.73(a) requires the licensee to report an event that occurred within three years of the date of discovery, which in this case is the period from April 13, 2018 going back to April 13, 2015. Within NUREG-1022, failed tests required by Section XI of the ASME Code for valves whose function is required for safety are treated similar to a failed surveillance test. For testing that is conducted later than the required time, as in this case, it should be assumed that the discrepancy occurred at the time the testing was required unless there is firm evidence to indicate it occurred at a different time. These valves always should have been in the IST program and therefore should have been periodically tested. Since testing was performed later than the required time (i.e., had never been performed until this test), time of discovery is not applicable and the condition is reportable as described below.

Based on the above, the Unit 2 Train A CCW System was inoperable for longer than allowed by Unit 2 Technical Specifications Limiting Condition for Operation 3.7.7 prior to December 3, 2015, at which time a temporary modification was approved to add a safety related make up water supply to the Unit 2 CCW System. The event is reportable as an Operation or Condition Prohibited by Technical Specifications in accordance with 10 CFR 50.73(a)(2)(i)(B).

A review of redundant equipment in the opposite train was performed for the timeframe between April 13, 2015, and December 3, 2015. The review considered occurrences when Train B of the Unit 2 CCW System, and other equipment or systems redundant to Train A were inoperable. The review found there were thirty occurrences when redundant equipment or systems in the opposite train, which included the Emergency Diesel Generator [EK][DG], Essential Service Water System, Residual Heat Removal System [BP], and the Emergency Core Cooling System

[CB], were declared inoperable for testing and preventative maintenance activities, during the time that the Unit 2 Train A CCW System was inoperable. The approximate duration of inoperability during the occurrences involving equipment or systems redundant to Train A ranged from ten minutes to fifty hours. This event is reportable as a Condition that Could Have Prevented the Fulfillment of a Safety Function in accordance with 10 CFR 50.73(a)(2)(v).

As discussed below under the Assessment of Nuclear Safety, the Unit 2 CCW Pump Discharge Crosstie Train B Shutoff Valve was always functional and available during this time when the Unit 2 CCW Pump Discharge Crosstie Train A Shutoff Valve was inoperable. Therefore, the Unit 2 CCW System safety function was always capable of being met and is not considered a safety system functional failure in the NRC Reactor Oversight Process indicators.

ASSESSMENT OF SAFETY CONSEQUENCES

Nuclear Safety

This event is characterized by inter-system leakage of the CCW System. A scenario involving only inter-system leakage between two train separation valves would cause water to pass from one train of the CCW System to the other and the CCW System inventory would be contained. In this scenario, there would generally be no impact on the functionality or capability of the CCW System. A second scenario involves inter-system leakage from one train separation valve concurrent with an external leak of the opposite train separation valve. The second scenario could result in a failure of both trains of the CCW System. Probabilistic Risk Assessment of this condition determined it to have very low safety significance.

Specifically, the Unit 2 CCW Pump Discharge Crosstie Train A Shutoff Valve was found with excessive leakage during leak rate testing. The corresponding Unit 2 CCW Pumps Discharge Crosstie Train B Shutoff Valve leak rate was found acceptable and no external leaks were identified during the time period when the Unit 2 CCW Pumps Discharge Crosstie Train A Shutoff Valve was inoperable. Therefore, no actual loss of train separation occurred within the Unit 2 CCW System and safety function would have been met.

Industrial Safety

There was no actual or potential industrial safety hazard resulting from the Unit 2 Train A CCW System being inoperable longer than allowed by Technical Specifications.

Radiological Safety

There was no actual or potential radiological safety hazard resulting from the Unit 2 Train A CCW System being inoperable longer than allowed by Technical Specifications.

CAUSE OF EVENT

The cause of the failed leakage test of the valve was due to the closed torque value of the valve being lower than the recommended minimum setpoint.

CORRECTIVE ACTIONS

Completed Corrective Actions

The Unit 2 CCW Pumps Discharge Crosstie Train A Shutoff Valve closed torque setting was adjusted above the recommended minimum setpoint criteria which resulted in an acceptable leak rate test of the valve on April 23, 2018.

PREVIOUS SIMILAR EVENTS

LERs for CNP Unit 1 and Unit 2 were reviewed for the previous five years and found no similar events.