

September 12, 2019

AEP-NRC-2019-44
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 316/2019-001-00
Manual Reactor Trip Due to Non-Essential Service Water System Degraded Condition


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 316/2019-001-00: Manual Reactor Trip Due to Non-Essential Service Water System Degraded Condition

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

MPH/ml

Enclosure: Licensee Event Report 316/2019-001-00: Manual Reactor Trip Due to Non-Essential Service Water System Degraded Condition


JEZZ
NRR

c: R. J. Ancona – MPSC
R. F. Kuntz – NRC Washington DC
EGLE – RMD/RPS
NRC Resident Inspector
D. J. Roberts – NRC Region III
A. J. Williamson – AEP Ft. Wayne

Enclosure to AEP-NRC-2019-44

Licensee Event Report 316/2019-001-00

Manual Reactor Trip Due to Non-Essential Service Water System Degraded Condition

| | | | | | | | | | | |
|---|--------|------------------------------------|---|--------------------|---|----------------|--|--|---|---------------|
| NRC FORM 366 (04-2018) | | 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) | | | | | 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 Infocollcts.Resource@nrc.gov , and to the Desk Officer, Office of Information and Regulatory Affairs, NE08-10202, (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. | | | | | |
| 1. FACILITY NAME Donald C. Cook Nuclear Plant Unit 2 | | | | | 2. DOCKET NUMBER 05000316 | | 3. PAGE 1 OF 3 | | | |
| 4. TITLE Manual Reactor Trip Due to Non-Essential Service Water System Degraded Condition | | | | | | | | | | |
| 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 |
| 07 | 21 | 2019 | 2019 | 001 | 00 | 09 | 12 | 2019 | N/A | 05000 |
| 9. OPERATING MODE | | | 11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply) | | | | | | | |
| 1 | | | <input type="checkbox"/> 20.2201(b) | | <input type="checkbox"/> 20.2203(a)(3)(i) | | <input type="checkbox"/> 50.73(a)(2)(ii)(A) | | <input type="checkbox"/> 50.73(a)(2)(viii)(A) | |
| | | | <input type="checkbox"/> 20.2201(d) | | <input type="checkbox"/> 20.2203(a)(3)(ii) | | <input type="checkbox"/> 50.73(a)(2)(ii)(B) | | <input type="checkbox"/> 50.73(a)(2)(viii)(B) | |
| | | | <input type="checkbox"/> 20.2203(a)(1) | | <input type="checkbox"/> 20.2203(a)(4) | | <input type="checkbox"/> 50.73(a)(2)(iii) | | <input type="checkbox"/> 50.73(a)(2)(ix)(A) | |
| | | | <input type="checkbox"/> 20.2203(a)(2)(i) | | <input type="checkbox"/> 50.36(c)(1)(i)(A) | | <input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A) | | <input type="checkbox"/> 50.73(a)(2)(x) | |
| 10. POWER LEVEL 17 | | | <input type="checkbox"/> 20.2203(a)(2)(ii) | | <input type="checkbox"/> 50.36(c)(1)(ii)(A) | | <input type="checkbox"/> 50.73(a)(2)(v)(A) | | <input type="checkbox"/> 73.71(a)(4) | |
| | | | <input type="checkbox"/> 20.2203(a)(2)(iii) | | <input type="checkbox"/> 50.36(c)(2) | | <input type="checkbox"/> 50.73(a)(2)(v)(B) | | <input type="checkbox"/> 73.71(a)(5) | |
| | | | <input type="checkbox"/> 20.2203(a)(2)(iv) | | <input type="checkbox"/> 50.46(a)(3)(ii) | | <input type="checkbox"/> 50.73(a)(2)(v)(C) | | <input type="checkbox"/> 73.77(a)(1) | |
| | | | <input type="checkbox"/> 20.2203(a)(2)(v) | | <input type="checkbox"/> 50.73(a)(2)(i)(A) | | <input type="checkbox"/> 50.73(a)(2)(v)(D) | | <input type="checkbox"/> 73.77(a)(2)(i) | |
| | | | <input type="checkbox"/> 20.2203(a)(2)(vi) | | <input type="checkbox"/> 50.73(a)(2)(i)(B) | | <input type="checkbox"/> 50.73(a)(2)(vii) | | <input type="checkbox"/> 73.77(a)(2)(ii) | |
| | | | <input type="checkbox"/> 50.73(a)(2)(i)(C) | | <input type="checkbox"/> OTHER | | Specify in Abstract below or in NRC Form 366A | | | |
| 12. LICENSEE CONTACT FOR THIS LER | | | | | | | | | | |
| LICENSEE CONTACT Michael K. Scarpello, Regulatory Affairs Director | | | | | | | | TELEPHONE NUMBER (Include Area Code) (269) 466-2649 | | |
| 13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT | | | | | | | | | | |
| CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO ICES | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO ICES | |
| | | | | | | | | | | |
| 14. SUPPLEMENTAL REPORT EXPECTED <input type="checkbox"/> YES (If yes, complete 15 EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO | | | | | 15. EXPECTED SUBMISSION DATE | | MONTH | DAY | YEAR | |
| | | | | | | | | | | |
| ABSTRACT (Limit to 1400 spaces, i.e., approximately 14 single-spaced typewritten lines) | | | | | | | | | | |
| <p>On July 19, 2019, Donald C. Cook Nuclear Plant (CNP) Unit 2 started experiencing degraded performance on the Unit 2 Non-Essential Service Water System (NESW), which affected one (1) NESW pump. On July 21, 2019, a second NESW pump on Unit 2 was affected. On July 21, 2019, a rapid downpower over approximately 40 minutes was conducted on Unit 2, and a manual reactor trip was initiated from 17 percent power to allow for investigation and repair of the degraded NESW System, before any thresholds were exceeded. The manual reactor trip was completed at 0826 EDT on July 21, 2019.</p> <p>The manual Reactor Protection System (RPS) actuation was reported via Event Notification 54176 in accordance with 10 CFR 50.72(b)(2)(iv)(B) and 10 CFR 50.72(b)(3)(iv)(A). This manual RPS actuation is reportable pursuant to 10 CFR 50.73(a)(2)(iv)(A) as, "Any event or condition that resulted in manual or automatic actuation of the RPS."</p> <p>The direct cause of the degraded NESW system performance was a high differential pressure on both Unit 2 NESW strainers, due to excessive loading of small mussels and plugged backwash lines. Both strainers were cleaned, backwashed lines flushed, and returned to service.</p> | | | | | | | | | | |

**LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET**

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

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, NEOF-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.

| 1. FACILITY NAME | 2. DOCKET NUMBER | 3. LER NUMBER | | |
|-------------------------------------|------------------|---------------|-------------------|--------|
| | | YEAR | SEQUENTIAL NUMBER | REV NO |
| Donald C. Cook Nuclear Plant Unit 2 | 05000316 | 2019 | - 001 | - 00 |

NARRATIVE**EVENT DESCRIPTION**

On July 19, 2019, Donald C. Cook Unit 2 was operating in MODE 1 at approximately 100 percent power, when Unit 2 started experiencing degraded performance on the Non-Essential Service Water System (NESW) [KG], which affected one (1) NESW pump.

On July 21, 2019, a second NESW pump on Unit 2 was affected by degraded NESW system performance, and as a result, a rapid downpower was performed over the course of approximately 40 minutes, in accordance with 2-OHP-4022-001-006, Rapid Power Reduction Response.

On July 21, 2019, at 0826 EDT a manual reactor [RCT] trip was performed at 17 percent power, to allow for further investigation and repair of the degraded NESW System.

During this event, Unit 2 was being supplied by offsite power, and all control rods fully inserted. The Auxiliary Feedwater [BA] Pumps were started as required and operated properly. Decay heat removal was via the Steam Generator Power Operated Relief Valves (PORVs) [SB][RV] following breaking Main Condenser [COND] Vacuum for expedited cooldown of the Main Turbine. All plant systems functioned normally following the reactor trip, and no radioactive release resulted from this event.

The NESW system is not considered an engineered safeguards system since it is not required to transfer heat from structures, systems or components (SSC) important to safety during accident conditions. However, it is required to operate during all phases of normal plant operation to supply cooling and makeup water to numerous plant systems and components.

The manual Reactor Protection System (RPS) [JC] actuation was reported via Event Notification 54176 in accordance with 10 CFR 50.72(b)(2)(iv)(B) and 10 CFR 50.72(b)(3)(iv)(A). This manual RPS actuation is reportable pursuant to 10 CFR 50.73(a)(2)(iv)(A) as, "Any event or condition that resulted in manual or automatic actuation of the RPS."

COMPONENTS

2-OME-35S - SOUTH NESW PUMP DISCHARGE STRAINER
2-OME-35N - NORTH NESW PUMP DISCHARGE STRAINER

**LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET**

(See NUREG-1022, R 3 for instruction and guidance for completing this form
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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.

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| Donald C. Cook Nuclear Plant Unit 2 | 05000316 | 2019 | - 001 | - 00 |

CAUSE OF THE EVENT

A preliminary analysis was performed and determined that the direct cause for the Unit 2 NESW degraded condition was a high differential pressure in both Unit 2 NESW pump discharge strainers, due to the excessive loading of small mussels and plugged backwash lines. Both strainers were cleaned, backwash lines flushed, and returned to service. A Root Cause Evaluation (RCE) is in progress at the time of this report. If the RCE reveals insights or causes different than described in this LER, a supplement will be provided.

ASSESSMENT OF SAFETY CONSEQUENCES**NUCLEAR SAFETY**

There was no actual or potential nuclear safety hazard resulting from the Manual Reactor Trip.

INDUSTRIAL SAFETY

There was no actual or potential industrial safety hazard resulting from the Manual Reactor Trip.

RADIOLOGICAL SAFETY

There was no actual or potential radiological safety hazard resulting from the Manual Reactor Trip.

PROBABILISTIC RISK ASSESSMENT

Probabilistic Risk Assessment of the event determined it to have very low safety significance.

PREVIOUS SIMILAR EVENTS

A review of Licensee Event Reports for the past three years found no similar events.