



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, ILLINOIS 60532-4352

August 2, 2021

EA-21-084

Mr. Joel P. Gebbie
Senior VP and Chief Nuclear Officer
Indiana Michigan Power Company
Nuclear Generation Group
One Cook Place
Bridgman, MI 49106

**SUBJECT: DONALD C. COOK NUCLEAR PLANT – NRC INSPECTION
REPORT 05000315/2021012 AND 05000316/2021012**

Dear Mr. Gebbie:

On June 30, 2021, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Donald C. Cook Nuclear Plant. On June 22, 2021, the NRC inspectors discussed the results of this inspection with you and other members of your staff. The results of this inspection are documented in the enclosed report.

No NRC-identified or self-revealing findings were identified during this inspection.

Licensee-identified violations which were determined to be of very low safety significance and Severity Level IV are documented in this report. We are treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violations or the significance or severity of the violations documented in this inspection report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region III; the Director, Office of Enforcement; and the NRC Resident Inspector at Donald C. Cook Nuclear Plant.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,



Signed by Curtis, David
on 08/02/21

David Curtis, Director
Division of Reactor Safety

Docket Nos. 05000315 and 05000316
License Nos. DPR-58 and DPR-74

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV®

Letter to Joel P. Gebbie from David Curtis dated August 2, 2021.

SUBJECT: DONALD C. COOK NUCLEAR PLANT – NRC INSPECTION
REPORT 05000315/2021012 AND 05000316/2021012

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**U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report**

Docket Numbers: 05000315 and 05000316

License Numbers: DPR-58 and DPR-74

Report Numbers: 05000315/2021012 and 05000316/2021012

Enterprise Identifier: I-2021-012-0020

Licensee: Indiana Michigan Power Company

Facility: Donald C. Cook Nuclear Plant

Location: Bridgman, MI

Inspection Dates: March 15, 2021 to June 30, 2021

Inspectors: M. Garza, Emergency Preparedness Inspector
G. Hansen, Senior Emergency Preparedness Inspector
P. Zurawski, Senior Resident Inspector

Approved By: Patricia J. Pelke, Chief
Operations Branch
Division of Reactor Safety

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting a NRC inspection at Donald C. Cook Nuclear Plant, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information. Licensee-identified non-cited violations are documented in report section: 71152.

List of Findings and Violations

No findings or violations of more than minor significance were identified.

Additional Tracking Items

None.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards. Starting on March 20, 2020, in response to the National Emergency declared by the President of the United States on the public health risks of the coronavirus (COVID-19), inspectors were directed to begin telework. In addition, regional baseline inspections were evaluated to determine if all or a portion of the objectives and requirements stated in the IP could be performed remotely. If the inspections could be performed remotely, they were conducted per the applicable IP. In some cases, portions of an IP were completed remotely and on site. The inspections documented below met the objectives and requirements for completion of the IP.

OTHER ACTIVITIES – BASELINE

71152 - Problem Identification and Resolution

Annual Follow-up of Selected Issues (IP Section 02.03) (1 Sample)

The inspectors reviewed the licensee's implementation of its corrective action program related to the following issues:

- (1) Spent Fuel Pool Level Instrumentation can not reach the EAL threshold values for a Site Area Emergency and General Emergency classification

INSPECTION RESULTS

Licensee-Identified Non-Cited Violation	71152
This violation of very low safety significance was identified by the licensee and has been entered into the licensee corrective action program and is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.	
Violation: In September 2014, the licensee completed installation of the Spent Fuel Pool Level Instruments (SFPLI) to meet NRC Order EA-12-051, "Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Level Instrumentation." An NRC inspection performed in accordance with Temporary Instruction 2515/191, "Implementation of Mitigation Strategies and Spent Fuel Pool Instrumentation Orders and Emergency Preparedness Communication/Staffing/Multi-Unit Dose Assessment Plans," determined that the SFPLI was installed in accordance with the Order.	
The SFPLI was installed at 621' 2.5", which was the bottom of the instrumentation probe in the Spent Fuel Pool (SFP) and this was reflected in the SFPLI modification documents. The documents do not describe how the 621' 2.5" level corresponds to the instrumentation indicator in the control room. For this level, the control room instrumentation indicator read 0.9 ft. (11 inches).	

In 2015, the licensee was in the process of making an entire EAL scheme change to adopt the guidance in NEI 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors." As part of this process, the licensee conducted a simulator validation of the EALs in the new scheme. However, because the simulator was not modeled for the new SFPLI at that time, the SFP Level EAL was validated using a plant walk-down along with documentation from the SFPLI modification. The Donald C. Cook staff selected 0 ft. as the EAL setpoint threshold value because this setpoint was erroneously thought to be the bottom of the instrumentation probe. The actual 0 ft. setpoint was at the top of active fuel, which was below the SFPLI probe, and therefore beyond the indicating range of the instrument. The instrumentation was installed in accordance with the Order requirements, however, the setpoint value used for the EAL threshold was inaccurate.

On June 30, 2015, the SFPLI was modeled in the simulator to reflect the installed instrumentation. However, after the SFPLI model was implemented, an emergency event drill scenario was not performed to validate that the SFP Level EALs would be declared in a timely and accurate manner.

On May 23, 2017, the licensee submitted a License Amendment Request (LAR) to the NRC for an EAL scheme change to adopt the NEI 99-01, Revision 6 guidance. This change included the SFP Level EALs with the 0 ft. setpoint as the threshold value. In a request for additional information, the NRC inquired about the SFPLI setpoints and whether or not a 0 ft. indication could be confused with a failed instrument. The licensee's response confirmed that the 0 ft. indication was valid and readable, which was later determined to be inaccurate.

On September 10, 2018, the licensee implemented the EALs with the erroneous SFPLI threshold value. On December 2, 2020, Donald C. Cook Emergency Preparedness staff ran an emergency event drill scenario in the simulator that involved lowering the SFP level. Per the scenario, the SFP level continued to decrease as shown on the Control Room Simulator instrumentation, however, the indication on the SFPLI did not go below 0.9 ft. After further investigation by the licensee, it was determined that this was not a simulator issue and that the simulator indications reflected actual control room indications. It was determined that the actual control room SFPLI could not measure lower than 0.9 ft. The erroneous SFPLI setpoint of 0 ft. as the EAL threshold impacts EALs RS 2.1 (Site Area Emergency) and RG 2.1 (General Emergency) because their threshold, SFPLI indication of 0 ft., could not be measured in this configuration.

The licensee entered this issue into their corrective action program and completed an apparent cause evaluation. The immediate compensatory actions were to implement standing orders to decision makers that indications of 1 ft., would meet the threshold for classification of EALs RS 2.1 and RG 2.1.

The licensee revised their Emergency Plan Management procedure to include that any change to an EAL or plant modification that affects EAL thresholds for classification will undergo an EAL Change Evaluation. The licensee also revised their procedures to include the EAL Change Evaluation to be used in the License Amendment Review process. In addition, the licensee included specific statements in their procedure to include design engineering reviews for all EAL changes.

Title 10 of the Code of Federal Regulations, Part 50.54(q)(2) requires, in part, that a holder of a nuclear power reactor operating license under this part, shall follow and maintain the

effectiveness of an emergency plan that meets the requirements in Appendix E to this part and the planning standards of 10 CFR 50.47(b). The 10 CFR 50.47(b)(4) requires a standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures.

Contrary to the above, since September 10, 2018, the licensee failed to maintain the effectiveness of its emergency plan and use a standard emergency classification and action level scheme that includes facility system and effluent parameters in determining the initial offsite response measures. Specifically, the licensee failed to maintain the ability to accurately declare EAL classifications RS-2.1 and RG-2.1, involving spent fuel pool water level indications during implementation of the site's Emergency Plan.

Significance/Severity: Green. The inspectors determined that the failure to maintain the effectiveness of their emergency plan due to an ineffective EAL was within the licensee's ability to foresee and correct. Specifically, the licensee had several missed opportunities to identify the ineffective EALs RS 2.1 and RG 2.1, which included: during the completion of the SFPLI modification package, during 50.54(q) screenings for changes to the EALs, during implementation of the SFPLI modeling in the simulator, and during the change of the entire EAL scheme to adopt guidance in NEI 99-01, Revision 6.

The inspectors determined the performance deficiency was more than minor because it was associated with the Procedure Quality attribute of the Emergency Preparedness cornerstone and adversely affected the cornerstone objective to ensure that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency.

The inspectors assessed the significance of the finding using Manual Chapter 0609, Appendix B, "Emergency Preparedness SDP." The SDP guidance allows for mitigating factors to be credited when determining significance. Using the SDP, and informing the evaluation with accident analysis insights, NRC inspectors determined that mitigating factors exist since there are other initiating conditions (ICs) with associated EALs that would lead to a declaration of a Site Area Emergency or General Emergency before the SFP Level EAL is met. Due to these mitigating factors, the inspectors assessed the significance of the finding as Green.

Corrective Action References: The issue was documented in AR 2020-9859, Potential Issue with SFP Level Indication and EAL Thresholds.

Licensee-Identified Non-Cited Violation	71152
This violation of very low safety significance was identified by the licensee and has been entered into the licensee corrective action program and is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.	
Violation: On May 23, 2017, the licensee submitted a License Amendment Request (LAR) to change their Emergency Action Level (EAL) scheme to adopt the NEI 99-01, Revision 6 guidance. The NRC reviewed the LAR and responded with a Request for Additional Information (RAI) for the review. The licensee responded to the RAI with inaccurate information. Specifically, the NRC inquired about the Spent Fuel Pool Level Instrumentation (SFPLI) indication of 0 ft. and whether this value could be confused with a failed instrument. The licensee confirmed in their response that the 0 ft. indication was valid	

and readable. Subsequent evaluations by the licensee identified the instrument could not read below 0.9 ft. This information was material to the NRC because the Commission approved the LAR (EAL scheme change) based on the inaccurate information submitted by the licensee. The LAR established Emergency Action Level thresholds for EALs RS 2.1 and RG 2.1 at 0 feet, rendering EALs RS-2.1 and RG 2.1 ineffective.

The licensee entered this issue into their corrective action program and completed a root cause evaluation. The corrective actions include an addition to the licensee's procedure on communication with the NRC, to incorporate validation of critical attributes associated with the EAL changes and approval of the critical attributes, from the design engineering department. Additionally, the licensee revised their licensing change procedure to identify other stakeholders impacted by the change and include their input in the license amendment process.

Title 10 CFR 50.9 (a) requires, in part, that information provided to the Commission by a licensee be complete and accurate in all material respects.

Contrary to the above, in a letter dated December 8, 2017, the licensee did not provide to the Commission information that was complete and accurate in all material respects. Specifically, the licensee's letter stated that "a reading of 0 ft. on 1 (2)-RLI-502-CRI Spent Fuel Pit Level Indication is a valid readable indication;" however, the instrument could not read below 0.9 ft. This information is material because the licensee established Emergency Action Level thresholds for EALs RS 2.1 and RG 2.1 at 0 ft., rendering EALs RS-2.1 and RG 2.1 ineffective.

Significance/Severity: Severity Level IV. While the SDP assessed the previously documented finding, it cannot address all of its aspects and requires that the NRC follow the traditional enforcement process. Specifically, the SDP does not consider the impact on the ability of the NRC to perform its regulatory oversight function in its assessment of licensee performance. Therefore, it is necessary to address the aspect of this violation which impeded the NRC's ability to regulate using traditional enforcement to adequately deter non-compliance. The violation was determined to be a Severity Level IV violation because if this information had been completely and accurately provided or maintained, it would not have caused the NRC to reconsider a regulatory position or undertake a substantial further inquiry.

Corrective Action References: The issue was documented in AR 2021-2823, Complete and Accurate Information not Provided to the NRC.

EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

- On June 22, 2021, the inspectors presented the NRC inspection results to Joel P. Gebbie and other members of the licensee staff.
- On April 2, 2021, the inspectors presented the Technical Debrief inspection results to Joel P. Gebbie, Chief Nuclear Officer and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71152	Corrective Action Documents	AR 2020-9859	Potential Issue with SFP Level Indication and EAL Thresholds	12/02/2020
		AR 2021-0433	Inaccurate information submitted to the NRC	01/13/2021
		AR 2021-2823	Complete and Accurate Information not Provided to the NRC	
	Engineering Evaluations	EC-0000052892	Spent Fuel Pool Level for NRC Order EA-12-051	07/09/2014
	Miscellaneous		D.C. Cook Nuclear Plant Emergency Plan	40
			D.C. Cook Nuclear Plant Emergency Plan	39
		Evaluation #18-11	10 CFR 50.54(q) Screening Form	08/09/2018
		RWA-L-2103-001	Spent Fuel Pit Deficient Emergency Action Level White Paper Support	05/03/2021
		RWA-L-2103-002	D.C. Cook Spent Fuel Pit Deficient Emergency Action Level Supplemental Structural Evaluation	06/03/2021