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Indiana Michigan Power
Cook Nuclear Plant
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Bridgman, MI 49106
IndianaMichiganPower.com

September 19, 2022

AEP-NRC-2022-48
10 CFR 50.73

Docket No.: 50-315

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

Donald C. Cook Nuclear Plant Unit 1
LICENSEE EVENT REPORT 315/2022-002-00
Unit 1 Ice Condenser Door Inoperable Resulting in a Condition Prohibited 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 1, is submitting as an enclosure to this letter the following report:

LER 315/2022-002-00: Unit 1 Ice Condenser Door Inoperable Resulting in a Condition Prohibited 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,

Kelly J Ferneau
Site Vice President

MPH/kmh

Enclosure: Licensee Event Report 315/2022-002-00: Unit 1 Ice Condenser Door Inoperable Resulting in a Condition Prohibited by Technical Specifications

- c: R. J. Ancona – MPSC
- EGLE – RMD/RPS
- J. B. Giessner – NRC Region III
- M. G. Menze - AEP Ft. Wayne
- NRC Resident Inspector
- R. M. Sistevaris – AEP Ft. Wayne
- S. P. Wall – NRC, Washington D.C.
- A. J. Williamson – AEP Ft. Wayne

Enclosure to AEP-NRC-2022-48

Licensee Event Report 315/2022-002-00: Unit 1 Ice Condenser Door Inoperable Resulting in a
Condition Prohibited by Technical Specifications



LICENSEE EVENT REPORT (LER)

(See Page 3 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/>)

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reporter lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA, Library, and Information Collections Branch (T-6 A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollections.Resource@nrc.gov, and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk ail: oiria_submission@omb.eop.gov. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

1. Facility Name Donald C. Cook Nuclear Plant Unit 1	2. Docket Number 05000315	3. Page 1 OF 3
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4. Title
Unit 1 Ice Condenser Door Inoperable Resulting in a Condition Prohibited by Technical Specifications

5. Event Date			6. LER Number			7. Report Date			8. Other Facilities Involved	
Month	Day	Year	Year	Sequential Number	Revision No.	Month	Day	Year	Facility Name	Docket Number
07	20	2022	2022	002	00	09	19	2022		05000
									Facility Name	Docket Number
										05000

9. Operating Mode 1	10. Power Level 100
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11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: (Check all that apply)

<input checked="" type="checkbox"/> 10 CFR Part 20	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input checked="" type="checkbox"/> 10 CFR Part 73
<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.69(g)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(4)
<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> 73.71(a)(5)
<input type="checkbox"/> 20.2203(a)(2)(i)	<input checked="" type="checkbox"/> 10 CFR Part 21	<input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	<input type="checkbox"/> 73.77(a)(1)(i)
<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 21.2(c)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 73.77(a)(2)(i)
<input type="checkbox"/> 20.2203(a)(2)(iii)	<input checked="" type="checkbox"/> 10 CFR Part 50	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	<input type="checkbox"/> 73.77(a)(2)(ii)
<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	
<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)	

OTHER (Specify here, in abstract, or NRC 366A).

12. Licensee Contact for this LER

Licensee Contact Michael K. Scarpello, Regulatory Affairs Director	Phone Number (Include area code) (269) 466-2649
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13. Complete One Line for each Component Failure Described in this Report

Cause	System	Component	Manufacturer	Reportable to IRIS	Cause	System	Component	Manufacturer	Reportable to IRIS
X	BC	DR	CW	Y					

14. Supplemental Report Expected	15. Expected Submission Date
<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes (If yes, complete 15. Expected Submission Date)
	Month: Day: Year:

16. Abstract (Limit to 1560 spaces, i.e., approximately 15 single-spaced typewritten lines)

On July 20, 2022, with Donald C. Cook Nuclear Plant Unit 1 operating at approximately 100 percent power, while performing an Ice Condenser Intermediate Deck Door (IDD) Preventative Maintenance (PM) task, IDD 23-H was found incapable of opening greater than approximately 15 percent of its travel path. Further investigation determined that a bracket, which holds the ice condenser vent curtain in place, prevented IDD 23-H from opening completely.

Limiting Condition for Operation (LCO) 3.6.12 requires the Ice Condenser Inlet Doors, Intermediate Deck Doors, and Top Deck Doors to be OPERABLE and closed in Modes 1-4. Furthermore the Technical Specification (TS) Bases requires the doors to be free of any obstructions that would limit their opening, to satisfy the LCO requirement.

Due to the limitation of the IDD movement, created by the configuration of the ice condenser vent curtain bracket, IDD 23-H did not meet the LCO requirement and was subsequently determined to have been inoperable for a time longer than permitted by LCO 3.6.12.

Therefore, the identified condition is reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) as an Operation or Condition Prohibited by Technical Specifications.



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

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1. FACILITY NAME Donald C. Cook Nuclear Plant Unit 1	2. DOCKET NUMBER 05000315	3. LER NUMBER		
		YEAR 2022	SEQUENTIAL NUMBER 002	REV NO. 00

NARRATIVE

EVENT DESCRIPTION

On July 20, 2022, with Donald C. Cook Nuclear Plant Unit 1 operating at approximately 100 percent power, while performing an Ice Condenser Intermediate Deck Door (IDD) Preventative Maintenance (PM) task, IDD 23-H was found incapable of opening greater than approximately 15 percent of its travel path. Further investigation determined the cause to be a bracket that holds the ice condenser vent curtain prevented the door from opening fully.

The Intermediate Deck Doors (IDD) are one of three sets of Ice Condenser doors, which also consist of the inlet doors, and the top deck doors. The functions of the doors are to seal the Ice Condenser from air leakage during the lifetime of the unit; and to open in the event of a Design Basis Accident (DBA). This limits containment [NH] peak pressure and temperature during the accident transient. There are approximately 192 intermediate deck doors.

The Ice Condenser is an annular compartment enclosing approximately 300 degrees of the perimeter of the upper containment compartment, but penetrating the operating deck so that a portion extends into the lower containment compartment. The inlet doors separate the atmosphere of the lower compartment from the ice bed inside the ice condenser. The top deck doors are above the ice bed and exposed to the atmosphere of the upper compartment. The intermediate deck doors, located below the top deck doors, form the floor of a plenum at the upper part of the ice condenser.

In the event of a DBA, the ice condenser inlet doors (located below the operating deck) open due to the pressure rise in the lower compartment. This allows air and steam to flow from the lower compartment into the ice condenser. The resulting pressure increase within the ice condenser causes the intermediate deck doors and the top deck doors to open, which allows the air to flow out of the ice condenser into the upper compartment. Steam condensation within the ice condensers limit the pressure and temperature rise in containment.

Limiting Condition for Operation (LCO) 3.6.12, Ice Condenser Doors, requires the Ice Condenser Inlet Doors, Intermediate Deck Doors, and Top Deck Doors to be OPERABLE and closed in Modes 1-4. Furthermore the Technical Specification (TS) Bases requires the doors to be free of any obstructions that would limit their opening, to satisfy the LCO requirement. Due to the limitation of the IDD movement, created by the configuration of the ice condenser vent curtain bracket, IDD 23-H did not meet this LCO requirement.

If an IDD is determined to be INOPERABLE, the REQUIRED ACTION, per LCO 3.6.12, is to verify maximum ice bed temperature is ≤ 27 degrees Fahrenheit every 4 hours, and restore the IDD to operable status and closed within 14 days. If the IDD is not restored to operable status within 14 days, an additional 48 hours is allotted to restore the IDD to an operable status, after which the Unit is required to be shutdown to Mode 3 within 6 hours, and Mode 5 within 36 hours.

A Past Operability Determination Evaluation was performed and determined that there was firm evidence that the identified condition existed from the time Unit 1 entered Mode 4, on May 18, 2022, until the condition was discovered on July 20, 2022, a total of 62 days. Since this condition existed for longer than the COMPLETION TIMES allowed for the REQUIRED ACTIONS of LCO 3.6.12, it is reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) as an Operation or Condition Prohibited by Technical Specifications.

COMPONENT

1-ICEDOOR-I-23H: Ice Condenser Bay #23 Intermediate Deck Door 'H'



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CONTINUATION SHEET**

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1. FACILITY NAME Donald C. Cook Nuclear Plant Unit 1	2. DOCKET NUMBER 05000315	3. LER NUMBER		
		YEAR 2022	SEQUENTIAL NUMBER - 002	REV NO. - 00

NARRATIVE

CAUSE OF THE EVENT

The limitation of IDD movement was determined to be the result of an obstruction, created by a bracket which holds an ice condenser vent curtain in place, thus preventing IDD 23-H from opening completely. Vent curtains are removed for servicing of the ice baskets and are reinstalled once the IDs are reinstalled after ice basket servicing is complete.

CORRECTIVE ACTIONS

The obstruction was removed and the door was verified to be free of any other obstructions that would limit movement. Additionally, there is a corrective action to revise the surveillance procedure to ensure similar issues are identified during future surveillance activities.

ASSESSMENT OF SAFETY CONSEQUENCES

NUCLEAR SAFETY

There was no actual or potential nuclear safety hazard resulting from the limitation imposed on the free movement of IDD 23-H.

INDUSTRIAL SAFETY

There was no actual personnel safety hazard resulting from the limitation imposed on the free movement of IDD 23-H.

RADIOLOGICAL SAFETY

There was no actual or potential radiological safety hazard, or radiological release, resulting from the limitation imposed on the free movement of IDD 23-H.

PROBABILISTIC RISK ASSESSMENT (PRA)

A risk assessment was performed and determined that the configuration during this event would increase the probability that more than the ten allowed (per 12-MHP-4030-010-004, Ice Condenser Intermediate Deck Door Surveillance) IDs would fail to open, given that one is already blocked closed. However, analysis in PRA-NB-SY-MISC, Miscellaneous Systems Notebook, shows that the failure probability of four or more inlet doors (which serve an equivalent function as the IDs) failing to open on demand is sufficiently low that it's considered a negligible failure mechanism. In this scenario, ten additional IDs would have to fail to surpass the allowed threshold, which based on the probability of four failing to open, would also be deemed to have a negligible effect on risk. Due to the fact that the overall function of the IDs and the ice condenser were still available to perform their credited safety functions, the overall risk associated with this configuration is estimated to be of very low safety significance.

PREVIOUS SIMILAR EVENTS

A review of Licensee Event Reports for the past five years found no events due to similar causes.