



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

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

August 31, 2023

Q. Shane Lies  
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 – FUNCTIONAL ENGINEERING  
INSPECTION - COMMERCIAL GRADE DEDICATION REPORT  
05000315/2023011 AND 05000316/2023011

Dear Q. Shane Lies:

On July 24, 2023, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Donald C. Cook Nuclear Plant and 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 findings or violations of more than minor significance were identified during this inspection.

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,

A handwritten signature in blue ink, appearing to read "Benjamin, Jamie".

Signed by Benjamin, Jamie  
on 08/31/23

Jamie C. Benjamin, Chief  
Engineering Branch 1  
Division of Operating 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 Q. Shane Lies from Jamie C. Benjamin dated August 31, 2023.

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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: 05000315/2023011 and 05000316/2023011

Enterprise Identifier: I-2023-011-0024

Licensee: Indiana Michigan Power Company

Facility: Donald C. Cook Nuclear Plant

Location: Bridgman, MI

Inspection Dates: June 12, 2023 to June 30, 2023

Inspectors: E. Fernandez, Senior Reactor Inspector  
D. Melendez-Colon, Reactor Inspector  
E. Rosario, Reactor Inspector

Approved By: Jamie C. Benjamin, Chief  
Engineering Branch 1  
Division of Operating Reactor Safety

Enclosure

## SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting a Functional Engineering Inspection - Commercial Grade Dedication 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.

### List of Findings and Violations

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

### Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
URI	05000316,05000315/20 23011-01	Safety-Related Motor Control Center Bus Bar Commercial Grade Dedication	71111.21N.03	Open

## 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.

## REACTOR SAFETY

### 71111.21N.03 - Commercial Grade Dedication

#### Commercial Grade Dedication (section 03.01) (12 Samples)

The inspectors reviewed the implementation of the licensee's processes for dedicating commercial-grade items/services as basic components and/or for procuring safety-related structures, systems, and components for the following samples:

- (1) 00035526, Mobilux EP1 Grease, Vesco Oil Corp
- (2) CJ18840-1, Garolite Sheet, G-10, ½" Thick, 24" x 36", McMaster-Carr
- (3) 00036194, Oil, DTE Extra Heavy, 55gal drum, Vesco Oil Corp
- (4) 00035998, Gauge, Site Glass, Bearing Pedestal Housing with Drain, 3/8 in - 18 NPT Connection, Curtiss Wright Stream
- (5) 100001351, Bushing, Control Room Ventilation Fan, SK-1 7/16 IN. 2 SK1-5/8 IN, Motion Industries
- (6) CGD-77720102-1, Cap, Fill, 4 Inch, Glass-Filled PBT, Paragon
- (7) 100001188, Assembly, Cover & Grid Includes Fasteners-Seals & Gaskets, Debora Smith Energy Partners
- (8) 100001491, Pipe Clamp EDGs, McMaster-Carr
- (9) 00034654, Ste, Brass instrument Quick Connect, 1/4 IN FNPT X 3/8 IN, Lennon Fluid Systems LLC
- (10) 00034780, Vertical Bus Bar, Tin Plated Copper, Storm Power Components
- (11) CGD-341713-1, Mechanical Seal, Cartridge Single Seal, Paragon
- (12) 100001170 Pressure Gauge, 2-1/2", 0-100 Psi, Power Process Engineering

## INSPECTION RESULTS

Unresolved Item (Open)	Safety-Related Motor Control Center Bus Bar Commercial Grade Dedication URI 05000316,05000315/2023011-01	71111.21 N.03
<p><u>Description:</u></p> <p>The Donald C. Cook Nuclear Plant purchased, dedicated and reversed engineered (under Specification No. ES-BUS-BAR-0001-QCN Rev 0) a non-safety related obsolete Cutler Hammer Control 9800 series Motor Control Centers (MCCs) vertical bus bar for use in safety-related applications. Specification No. ES-BUS-BAR-0001-QCN Rev 0 states under Dedication Instructions, "Ensure the bus bars are either plain or tin coated copper." The dedication plan did not verify the new bus bar was tin coated. The original Cutler Hammer bus bars were aluminum with a tin coating. The new bus bars are made of copper with a non-documented unknown coating. The new configuration now consist of the new copper bus bar mated to a tin coated aluminum bus bar, which then come into sliding contact with silver plated copper bus stabs. The design change also uses a non-safety related corrosion inhibiting compound (e.g., Penetrox A-13)", to prevent early failure of the tin coated aluminum to copper joint.</p> <p>The inspectors identified three issues of concern with this commercial grade dedication sample.</p> <ol style="list-style-type: none"> <li>1. The new configuration consisting of a new cooper bus bar material mated with an existing tin coated aluminum bus bar has the potential to create a new or unique failure mechanism due to the dissimilar metals. The licensee's evaluation did not address this potential failure mechanism.</li> <li>2. Low contact resistance between bus bar mating surfaces was a listed critical attribute. The original configuration used tin coatings between the tin coated aluminum bus bar to tin coated aluminum bus bar to create and maintain this condition. The new configuration uses a non-safety related corrosion inhibiting compound, Pentrox A-13, to create and maintain this condition. The licensee did not have documentation to show how this compound was qualified for use in safety-related applications.</li> <li>3. Preventive maintenance/testing, instructions and inspection procedure acceptance criteria did not appear to be modified to address this new or unique configuration.</li> </ol> <p>On July 18, 2023, the licensee provide the inspectors a white paper title "DC Cook Response to Proposed Non-Cited Violation" which will be included in the review and final disposition for this Unresolved Item.</p> <p>Planned Closure Actions: The inspectors planned to review the licensee's white paper to determine if any of the listed issues of concern represent a performance deficiency, and or violation of NRC requirements.</p> <p>Corrective Action References: AR 2023-4974</p>		

## **EXIT MEETINGS AND DEBRIEFS**

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

- On July 24, 2023, the inspectors presented the Functional Engineering Inspection - Commercial Grade Dedication results to Q. Shane Lies and other members of the licensee staff.
- On July 5, 2023, the inspectors presented the Exit for DC Cook Commercial Grade Dedication inspection results to Shane Lies – SVP Chief Nuclear Officer and other members of the licensee staff.
- On July 24, 2023, the inspectors presented the Re-Exit inspection results to Steve Mitchell and other members of the licensee staff.

**DOCUMENTS REVIEWED**

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.21N.03	Corrective Action Documents	2022-6828	Unit 1 Reactor Trip - RCP 13 Trip	08/28/2022
		2022-6872	U1 RCP 12 Motor Electrical Penetration Corrosion and Heat	08/29/2022
		2022-9357	OSDD PO C1005443: Motion Industries	11/14/2022
	Corrective Action Documents Resulting from Inspection	2023-4546	Review Current Practices for Oil Storage	06/19/2023
		2023-4974	NRC Inspection-Commercial Grade Dedication Violation for Vertical Bus Bar	07/06/2023
	Engineering Evaluations	00031489	Commercial Grade Item Dedication Evaluation - Bushing, S Type QD Sure Grip-QMW	Rev. 0
		00034654	Commercial Grade Item Dedication Evaluation - Stem, Brass Instrument Quick Connect, 1/4 IN FNPT X 3/8 IN	Rev. 0
		00034780	Commercial Grade Item Dedication Evaluation for Bus Bar	0
		00035526	Commercial Grade Item Dedication Evaluation - Grease, Mobilux EP1, in 12 to 14 oz Tubes	Rev. 0
		00035998	Commercial Grade Item Dedication Evaluation - Gauge, Sight Glass, Bearing Pedestal Housing with Drain, 3/8 IN - 18 NPT Connection	Rev. 0
		00036194	Commercial Grade Item Dedication Evaluation - Oil, DTE Extra Heavy, 0121, 55 Gallon Drum	Rev. 0
		100001170	Commercial Grade Item Dedication Evaluation for Pressure Gauge for EDG	0
		100001188	Commercial Grade Item Dedication Evaluation - Assembly, Cover & Grid	Rev. 0
		100001351	Commercial Grade Item Dedication Evaluation - Bushing, S Type QD Sure Grip-QMW, SK-1 7/16 IN	Rev. 0
100001491		Commercial Grade Item Dedication Evaluation - Clamp, Pipe, 2 Mounting Holes, Steel	Rev. 0	
CE-NEYS-0010		COMPONENT EVALUATION: Penetrox A and Penetrox A-13	0	
CGD-341713-1	Commercial Grade Item Dedication Technical Evaluation,	1		



Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Test Plan, and Test Datasheet for Mechanical Seal	
		CGIEL02	EPRI CGI Joint Utility Task Group Commercial Grade Item Evaluation for Lugs, Compression, Un-Insulated	0
		CGSR-AVL-1130-03	Commercial Grade Survey Report for Paragon	0
		DCCPS-604-QCS	Specification for Cable Terminations and Splices	0
		ES-BUS-BAR-0001-QCN	Purchase and Design Specification for Vertical Bus Bar	0
		HP-0045	Emergency Diesel Generator (EDG) Fuel Linkage Parts	10/12/2004
		Miscellaneous	11237-3-902-2	Oil Sample Analysis Report
	24454		Commercial Grade Survey Report Transmittal - FENOC Survey 2017-0021	07/05/2017
	24974		NUPIC Joint Commercial Grade Survey of Swagelok Company	03/05/2021
	77720102		Test Data Package - Fill Cap	Rev. 1
	CJ18840-1		Dedication Plan for Garolite Sheet	Rev. 0
	EM-C-2130		Bus Operation and Maintenance	08/30/2022
	Procedures	12-EHP-5043-CGD-001	Commercial Grade Dedication	Rev. 22
		12-EHP-5043-SLE-001	Shelf Life	Revs. 9, 10, 12
		12-MMP-3120-NETS-001	Receipt Inspection of Safety Related/Safety Interfaced Material and Equipment	Rev. 23
		12-MMP-3120-NETS-001	Receipt Inspection of Safety Related/Safety Interfaced Material and Equipment	Rev. 16
		12-MMP-7090-NETS-011	Material Testing	Rev. 11
	Shipping Records	01591934	Receipt Inspection Report - 185731	07/26/2021
		01593390	Receipt Inspection Report - 62725200	06/02/2021
		01597677	Receipt Inspection Report - 0001374362, 0001374363	10/27/2022
		01600299	Receipt Inspection Report - 196836	08/07/2020
		01601287	Receipt Inspection Report - 198407	03/11/2021
		197350	Receipt Inspection Report Bus Bar PO# 01599553	09/24/2020

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		C1001629	Receipt Inspection Report Pressure Gauge for EDG	0
		C1004435	Receipt Inspection Report - 1386277	08/31/2022
		C1004553	Receipt Inspection Report for Mechanical Seal	23
		C1005296	Receipt Inspection Report - 1388211	12/12/2022
		C1005443	Receipt Inspection Report - 1388079, 1388081	11/09/2022
		C1005887	Receipt Inspection Report - 1389264	02/13/2023
		RTN-23933	Receipt Inspection Report - 1389380	01/26/2023
	Work Orders	55522280-01	MTH: 2-HV-ACRA-1; Investigate Abnormal Noise	10/24/2019
		55550267-06	MTM, 1-WRV-761-ACT, Remove Air Line TCC/EC-57644	02/18/2021
		C10038459001	12-TK-47-CD, Replace Locking Fill Cap	03/01/2023