



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

April 12, 2022

Mr. David Rhoades
Senior Vice President
Constellation Energy Generation, LLC
President and Chief Nuclear Officer (CNO)
Constellation Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3 – DESIGN BASIS
ASSURANCE INSPECTION (PROGRAMS) INSPECTION REPORT
05000237/2022011 AND 05000249/2022011

Dear Mr. Rhoades:

On April 1, 2022, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Dresden Nuclear Power Station, Units 2 and 3 and discussed the results of this inspection with Mr. P. Boyle, Site Vice President, 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 cursive script that reads "Karla K. Stoedter".

Signed by Stoedter, Karla
on 04/12/22

Karla K. Stoedter, Chief
Engineering Branch 2
Division of Reactor Safety

Docket Nos. 05000237 and 05000249
License Nos. DPR-19 and DPR-25

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV®

Letter to David Rhoades from Karla K. Stoedter dated April 12, 2022.

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ASSURANCE INSPECTION (PROGRAMS) INSPECTION REPORT
05000237/2022011 AND 05000249/2022011

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

Docket Numbers: 05000237 and 05000249

License Numbers: DPR-19 and DPR-25

Report Numbers: 05000237/2022011 and 05000249/2022011

Enterprise Identifier: I-2022-011-0037

Licensee: Constellation Energy Generation, LLC

Facility: Dresden Nuclear Power Station, Units 2 and 3

Location: Morris, IL

Inspection Dates: March 14, 2022 to April 01, 2022

Inspectors: J. Benjamin, Senior Reactor Inspector
B. Jose, Senior Reactor Inspector
A. Shaikh, Senior Reactor Inspector

Approved By: Karla K. Stodter, Chief
Engineering Branch 2
Division of Reactor Safety

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting a design basis assurance inspection (programs) inspection at Dresden Nuclear Power Station, Units 2 and 3, 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

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.

REACTOR SAFETY

71111.21N.02 - Design-Basis Capability of Power-Operated Valves Under 10 CFR 50.55a Requirements

POV Review (IP Section 03) (11 Samples)

The inspectors reviewed the valves listed below to determine the following:

- a. Whether the sampled power-operated valves (POVs) are being tested and maintained in accordance with NRC regulations along with the licensee's commitments and/or licensing bases.
- b. Whether the sampled POVs are capable of performing their design-basis functions.
- c. Whether testing of the sampled POVs is adequate to demonstrate the capability of the POVs to perform their safety functions under design-basis conditions.
- d. Material condition of the valve including a review of maintenance activities and a walkdown of the valve (if accessible).

- (1) Air Operated Valve (AOV) 3-1601-60: Unit 3 Torus Vent Valve
- (2) Squib 3-1106 A: Unit 3 Standby Liquid Control System Squib Valve
- (3) Motor Operated Valve (MOV) 3-1501-10: Unit 3 High Pressure Coolant Injection (HPCI) System Test Return to Condensate Storage Tank
- (4) MOV 2-1501-38A: Unit 2 Low Pressure Coolant Injection Test Injection Isolation Valve
- (5) MOV 2-2301-3: Unit 2 HPCI Turbine Steam Supply Valve
- (6) AOV 2-1599-61: Unit 2 Torus to Hotwell Containment Isolation Valve
- (7) MOV 2-1201-1: Unit 2 Reactor Water Clean-Up System Inlet Isolation Valve
- (8) Main Steam Isolation Valve 2-0302-1D: Unit 2 Inboard Main Steam Isolation Valve
- (9) MOV 2-1301-3: Unit 2 Isolation Condenser Isolation Valve
- (10) AOV 2-0302-158B: Unit 2 Scram Discharge Volume Drain Valve
- (11) AOV-3 1601-23: Unit 3 Drywell Vent Valve

INSPECTION RESULTS

No findings were identified.

EXIT MEETINGS AND DEBRIEFS

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

- On April 1, 2022, the inspectors presented the design basis assurance inspection (programs) inspection results to Mr. P. Boyle, Site Vice President, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.21N.02	Calculations	2-1301-3	Midacalc Results DRE-2-1301-3	9
		2-1501-38A	MIDACALC Results MOV 2-1501-38A	3
		AOV-MEDP-DRE-02-001	Inboard Main Steam Isolation Valve	0
		DRE 02-0038	MOV Alternating Current (AC) Motor Terminal Voltage Calculation	1
		DRE 03-0015	HPCI MOV Design Basis Document and Differential Pressure Calculation	0A
		DRE 03-0100	Reactor Water Cleanup System Combined DBD and DP Calculation	000
		DRE 16-0040	Seismic Qualification of AVCO Air Pilot Valves	1
		DRE-15-0046	Hardened Containment Vent System (HCVS) Vent Line Sizing, Unit 3	0
		DRE-3-2301-10	MIDACALC Results, DC MOV Generic Letter (GL) 96-05 Globe Valve 3-2301-10	7
		DRE00-0061	Main Steam Isolation Valves Capability Margin Calculation	0A
		DRE01-0066	Dresden Units 2 and 3 Standby Liquid Control (SLC) Discharge Piping Pressure Drop	2
		DRE03-0013	LPCI Differential Pressure (DP) Calculation	0
		DRE98-0031	Unit 2 Reactor Building Motor Control Centers (MCCs), Thermal Overload (TOL) Heater Sizing	4
		Pratt Order # DD-664 (Pratty Original Order # N-3410-2)	18" 2FII Dimensional Data for Commonwealth Edison Dresden Plant PO 00013597	07/18/2000
	Corrective Action Documents	AR 03988159	2-2301-3 Unit 2 HPCI Turbine Steam Supply MOV Did Not Open	03/22/2017
		AR 03991760	2-2301-3 Weak Link Calculation Revision Required for Disc and Stem	03/30/2017
		AR 04074741	2-2301-3 Failed to Close During DIS 2300-05	11/14/2017
		AR 04191433	3-1601-60 Failed Pressure Decay Test in DOS1600-28	11/04/2018
		AR 04193082	3-1601-60-SV, Unit 3 Instrument Air Supply Solenoid	11/08/2018

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Valve Leak	
	Drawings	12E-2441	Schematic Diagram Low Pressure Coolant Injection (LPCI) / Containment Cooling System MOVs 2- 1501-18A, 18B, 38A and 38B	AG
		12E-3512	Schematic Diagram, Primary Containment Isolation System (PCIS) Drywell and Torus Vent and Purge Isolation Control	X
		12E-3512A	Schematic Diagram Atmospheric Control Inboard and Outboard Valves	E
		12E-3529	Schematic Diagram HPCI Steam Main Pumps and Condensate Valves	AL
		52553-2	1 " Gate Valve Actuator Operated	09/15/2006
		706-4069-007	Assembly (MT1) 3A Line 8.00 Bore (G) 1.38 Rod Dia. NC	12/20/2011
		B-397	Checkered Steel Floor Plate Details	06/30/1967
		CBO7805	Sub-Assembly of Anti-Rotation Pilot Valve for List 653 MSIV Assembly	01/06/2017
		H-29529	900 LB 18-8 MO Stainless Steel Gate Valves Sheet 1	A
		M-12	Diagram of Main Steam Piping	F
		M-28	Diagram of Isolation Condenser Piping	LR
		M-34 Sheet 1	Diagram of Control Rod Drive Hydraulic Piping	AN
		M-34 Sheet 2	Diagram of Control Rod Drive Hydraulic Piping	Z
		M-356	Diagram of Pressure Suppression Piping	CZ
		M-356	Diagram of Pressure Suppression Piping	CZ
		M-374	Diagram of High Pressure Coolant Injection (HPCI) Piping	CY
	Engineering Changes	401069	Hardened Containment Vent System Modification as Required by NRC Order EA-13-109	54
	Engineering Evaluations	IST-DRE-BDOC-V-18	Inservice Test (IST) Basis Document, Valve 2-1501-38A	03/01/2019
		IST-DRE-BDOC-V-21	IST Basis Document for Valve 3-1601-60	0
		IST-DRE-BDOC-V-31	IST Basis Document Valve 3-1106A	03/01/2019
	Miscellaneous	MPR-2524-A	Joint Owners Group Programs Summary Report	1
		OTC-371	Vendor Thrust Analysis, Required and Maximum for	0

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Procedures		Valves 1501-38A and B	
		DOP 1100-02	Injection of SLC	19
		DOP 1300-01	Standby Operation of the Isolation Condenser	56
		DOP 1300-02	Automatic Operation of the Isolation Condenser	28
		DOP 1300-03	Manual Operation of the Isolation Condenser	39
		DOP 1600-01	Normal Pressure Control of the Drywell or Torus	24
		DOP 1600-03	Unit 2 Quarterly Valve Timing	56
		DOS 0040-07	Verification of Remote Position Indication for Valves	49
		DOS 0040-07	Verification of Remote Position Indication for Valves	49
		DOS 0250-02	Full Closure Timing and Exercising of Main Steam Isolation Valves	39
		DOS 1100-03	SLC Injection Test	48
		DOS 12600-18	Cold Shutdown Valve Testing	51
		DOS 1600-03	Unit 2 Quarterly Valve Timing	56
		DOS 1600-18	Main Steam Isolation Valve-Safe Closure Test	24
		DOS 2300-01	HPCI Valve Operability and Timing	57
		DOS 7000-01	Local Leak Rate Testing of Main Steam Isolation Valves	10
		DOS-1600-28	Air Operated Valve Fail Safe and Accumulator Integrity Test	49
		DOS-2300-01	High Pressure Coolant Injection Valve Operability and Timing	57
		ER-AA-116	Motor Operated Valve Program	8
		ER-AA-302	Motor Operated Valve Program Engineering Procedure	8
		ER-AA-302-1001	MOV Rising Stem Motor Operated Valve Thrust and Torque Sizing and Setup	12
		ER-AA-302-1009	Final Joint Owners Group MOV Periodic Verification Program Implementation	3
		ER-AA-410	Air Operated Valve Program Implementing Procedure	6
		ER-AA-410-1000	Air Operated Valve Categorization	4
		ER-AA-410-1002	Air Operated Valve Testing Requirements	4
		MA-AA-743-310	Diagnostic Testing and Evaluation of Air Operated Valves	8
	Work Orders	00339085	Dresden 2, 10 Year MOV Diagnostic and Limitorque Surveillance 2-1501-38A	01/06/2011

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		00597794	4th Refuel Replace Actuator on Valve 3-1601-60	09/06/2006
		00692782	10 Year Preventive Maintenance (PM) Lube/Inspection Limatorque Valve Actuator 3-2301-10	06/16/2016
		00743475	12 Year Standby Liquid Squib Valve A, Replace Connector	12/12/2007
		00769761	10 Year Motor Operated Valve (MOV) Diagnostic and Limatorque Surveillance 3-2301-10	03/18/2018
		00976072	Dresden 3, 48 Month Standby Liquid Control System Manually Initiate to Inject Demineralized Water	11/17/2010
		01312947	In-Body Seat Found Damaged During Inspection	10/29/2015
		01422808	4 Year Valve Lube Stem Threads Only 3-2301-10	03/20/2016
		01803711	Technical Specifications Local Leak Rate Test Valve 3-1601-60	12/09/2016
		04710348	Reactor Water Cleanup System MOV Operability and IST Timing	11/15/2019
		04849925	3-1601-60 Failed Pressure Decay Test in DOS 1600-28	11/16/2018
		04877777	24 Month Air Operated Valve(AOV) Accumulator Integrity Test 3-1601-60	11/02/2020
		04981359	Cold Shutdown Valve Testing Surveillance	05/13/2021
		05131603	TS Unit 3 Quarterly Valve Stroke Timing 1601-60	06/04/2021
		05135479	AOV 1599-61 QTR TS Valve Timing (IST)	06/12/2021
		05161497	AOV 1599-61 QTR TS Valve Timing (IST)	09/24/2021