



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION IV
1600 EAST LAMAR BOULEVARD
ARLINGTON, TEXAS 76011-4511

May 5, 2022

Mr. Fadi Diya
Senior Vice President
and Chief Nuclear Officer
Ameren Missouri
Callaway Plant
8315 County Road 459
Steedman, MO 65077

SUBJECT: CALLAWAY PLANT – CYBER SECURITY INSPECTION REPORT
05000483/2022401

Dear Mr. Diya:

On March 31, 2022, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Callaway Plant and discussed the results of this inspection with Mr. F. J. Bianco, Senior Director, Nuclear Operations, 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 black ink, appearing to read "Nicholas Taylor".

Signed by Taylor, Nicholas
on 05/03/22

Nicholas H. Taylor, Chief
Engineering Branch 2
Division of Operating Reactor Safety

Docket No. 05000483
License No. NPF-30

Enclosure:
Inspection Report 05000483/2022401

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CALLAWAY PLANT – CYBER SECURITY INSPECTION REPORT 05000483/2022401
 DATED – MAY 5, 2022

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ADAMS ACCESSION NUMBER: ML22117A222

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

Docket Number: 05000483

License Number: NPF-30

Report Number: 05000483/2022401

Enterprise Identifier: I-2022-401-0004

Licensee: Ameren Missouri

Facility: Callaway Plant

Location: Steedman, MO

Inspection Dates: March 28, 2022, to March 31, 2022

Inspectors: S. Graves, Senior Reactor Inspector, Lead
S. Opara, Allegation Specialist
M. Fernandez, Cyber Security Specialist
A. Konkal, Contractor - Cyber Security
F. Priester, Contractor - Cyber Security

Approved By: Nicholas H. Taylor, Chief
Engineering Branch 2
Division of Operating Reactor Safety

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting a cyber security inspection at Callaway 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

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) 2201, "Security Inspection Program for Commercial Nuclear Power Reactors." 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.

SAFEGUARDS

71130.10 - Cybersecurity

The inspectors reviewed implementation of the Callaway Cyber Security Plan and focused on evaluating changes to the program, critical systems, and Critical Digital Assets (CDAs).

Cybersecurity (1 Sample)

(1) The following IP sections were completed and constitute completion of 1 sample:

- 03.01, "Review Ongoing Monitoring and Assessment Activities"
- 03.02, "Verify Defense-in-Depth Protective Strategies"
- 03.03, "Review of Configuration Management Change Control"
- 03.04, "Review of Cyber Security Program"
- 03.05, "Evaluation of Corrective Actions"

The inspection also reviewed the following cyber security program changes, as well as boundary device configurations, portable media and mobile device procedures, portable media and mobile device scanning kiosk operations and incident response implementation procedures.

- thermal pan-tilt-zoom security camera replacement – security
- upgrades to security information and event management servers, network kiosks, addition of plant computer diode, centralize anti-virus updates, and plant process computer workstations - important-to-safety
- addition of dedicated security information and event management workstations - safety/important-to-safety/support system
- security computer/access authorization - security

INSPECTION RESULTS

No findings were identified.

EXIT MEETINGS AND DEBRIEFS

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

- On March 31, 2022, the inspectors presented the cyber security inspection results to Mr. F. J. Bianco, Senior Director, Nuclear Operations, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71130.10	Corrective Action Documents	CR -	201904128, 201905661, 202001842, 202004225, 202004652, 202005670, 202105183, 202105572, 202106145, 202106213, 202106265, 202106517, 202107043, 202201664	
71130.10	Corrective Action Documents Resulting from Inspection	CR -	202201799, 202201818, 202201842, 202201844, 202201845, 202201846, 202201860, 202201862, 202201864	
71130.10	Drawings	8600-X-90398	SAS Block Diagram Video	5
		8600-X-90454	CAS Block Diagram Video	13
		8600-X-90455	IRIScan Interconnection Diagram	7
		8600-X-90456	Security Computer System Interconnection Drawing	4
		J-113G-00010	MUX Block Diagram	8
		J-113G-00515	Centralized Logging System Functional Block Diagram	6
		J-113G-00516	Network Intrusion Detection System Functional Block Diagram	4
		J-2021-00041 S001	PCS Replacement Functional Block Diagram	7
71130.10	Engineering Changes	Design Equivalent Change Package MP 19-0009	PELCO SARIX ESTI350-2N, Thermal PTZ Camera Replacement	2
		Design Equivalent Change Package MP 19-0084	2018 Operating Experience Changes for Cyber Security Program	5
		Design Equivalent Change Package MP 21-0018	Addition of SPLUNK workstation in Security Computer System	0
71130.10	Miscellaneous		Presentation - Callaway Cyber Security	03/28/2022
			Callaway CSAT Team Training	3
			Tech Specialist Qualmaster Requirements	03/29/2022
			Thermal Camera Configuration Baseline	
			Cyber Security Drills - Drill Packages (2019, 2020, 2021)	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			AXIS Q1942-E PT Mount Thermal Network Camera User Manual	
		CA3188	Event/Incident Summary and Incident Response Plan	03/24/2022
		CA4651 - Critical Digital Asset (CDA) Modification Mitigation Plan	SK- Security Computer Modification Package: MP 21-0018	07/12/2021
		CA4651 - CDA Modification Mitigation Plan	Network Intrusion Detection System and Centralized Logging System MP 19-0084	08/09/2019
		SKNH0012	Switch Configuration File	11/17/2021
		SKNH0013	Switch Configuration File	11/17/2021
		SKXX0003	Firewall Configuration File	10/21/2021
		SKXX0004	Firewall Configuration File	10/21/2021
		SKXX0010	Firewall Configuration File	10/21/2021
		SKXY0003	Splunk Server Services	11/22/2021
		SKXY0005	Splunk L2 Sever Services	11/17/2021
		T.68.2943.S	Cyber Security Incident Response Team Training	08/31/2017
71130.10	Procedures	APA-ZZ-00907	Personnel Processing Requirements for Unescorted Access to The Callaway Energy Center and Maintenance of Associated Personnel Data	30
		APA-ZZ-01104	Access Authorization Program for Callaway Energy Center	49
		APA-ZZ-01108	Cyber Security Program	9
		APA-ZZ-01108 ADDENDUM A	CDA-Related Removable Media and Removable / Portable Device Management	11
		DTI-CS-002	Virus Scanning Station (Kiosk) DTI	5
		DTI-CS-003	CDA Laptop Hardening DTI	7
		DTI-CS-014	Vulnerability Scan and Assessment DTI	7
		DTI-CS-018	Non-Engineering Configuration Control CDA Change Process	1
		EDP-SK-DR012	Network Intrusion Detection System and Centralized Logging System Disaster Recovery	2
		EDP-SK-DR014	Security Computer Log Forwarder Recovery Plan	2

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		EDP-ZZ-01108	Cyber Security Program Implementation	11
		EDP-ZZ-01108	Cyber Security Program Implementation	12
		EDP-ZZ-01108 ADDENDUM 1	Digital Assessment Process	14
		EDP-ZZ-01108 ADDENDUM 2	Security Control Implementation Strategy	9
		EDP-ZZ-01108 ADDENDUM 3	Callaway Ongoing Monitoring for Critical Digital Assets	10
		EDP-ZZ-01108 ADDENDUM 4	Cyber Security Threat and Vulnerability Notification Assessment Process	4
		EDP-ZZ-01108 ADDENDUM 5	Callaway Cyber Security Incident Response Procedure	5
		EDP-ZZ-01108 ADDENDUM 6	Cyber Security Contingency and Disaster Recovery Plans	2
		EDP-ZZ-01108 ADDENDUM 8	Centralized Cyber Security Monitoring System	4
		EDP-ZZ-01108 ADDENDUM 9	Threat Detection Software Configuration and Update	1
		EDP-ZZ-01108 APPENDIX A	Cyber Security Defensive Strategy	6
		EDP-ZZ-04056	Development And Configuration Management of Digital Plant Systems	18
		SDP-PI-CYBER	Cyber Security	9
71130.10	Self-Assessments		Cyber Security Effectiveness Review	12/14/2021
			Cyber Security Effectiveness Review	02/01/2022
			MAPPING – SK – Thermal PTZ Cameras	
			MAPPING – SK – Thermal Camera Decoders	
			SK - Security Computer Heavy Forwarder Control Mapping MP21-0018	
	SSA-202104890-001	Cyber Security Self-Assessment	11/29/2021	
71130.10	Work Orders		SKHVF0001 (Splunk Heavy Forwarder) hardening checklist	01/19/2022
		20511855/550	Perform Ongoing Monitoring Plant Computer System Critical Devices Inside Diode	11/14/2020

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		20512939/500	Network Intrusion Detection and Centralized Logging Level 4 Ongoing Monitoring	12/11/2020
		20512940/500	Network Intrusion Detection and Centralized Logging Level 2P Ongoing Monitoring	12/11/2020
		21502460/550	Cyber Security Monitoring for Security Computer -SK	03/04/2021
		21505642/500	Perform Cyber Security Effectiveness Program Review Per EDP-ZZ-01108	08/08/2021
		CYB00000613	CDA Modification Mitigation Plan – SK – Security Computer	0
		MP 19-0009	Thermal Camera and Thermal Decoder Vulnerability Assessment	02/15/2022
		PM21503727/500	Perform Cyber Security Monitoring for Thermal Cameras	04/09/2021
		PM21505642/500	Perform Cyber Security Effectiveness Program Review per EDP-ZZ-01108	06/08/2021