UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 EAST LAMAR BOULEVARD
ARLINGTON, TEXAS 76011-4511

July 05, 2023

Troy Via, Chief Operations Officer
and Vice President Utility Operations
Omaha Public Power District
Fort Calhoun Station
Mail Stop FC-2-4
9610 Power Lane
Blair, NE 68008

SUBJECT: FORT CALHOUN STATION – NRC INSPECTION REPORT 05000285/2023-003

Dear Troy Via:

This letter refers to the U.S. Nuclear Regulatory Commission (NRC) decommissioning inspection conducted June 12-15, 2023, at the Fort Calhoun Station near Blair, Nebraska. The NRC inspectors discussed the results of the decommissioning inspection with members of your staff during the final exit meeting on June 15, 2023. The inspection results are documented in the enclosure to this letter.

The inspection examined activities conducted under your license as they relate to public health and safety, the common defense and security, and compliance with the Commission's rules and regulations, and with the conditions of your license. Within these areas, the inspection consisted of selected examination of procedures and representative records, observation of activities, and interviews with personnel. Specifically, the inspectors reviewed your decommissioning performance, solid radioactive waste management and transportation of radioactive materials, and the implementation of the fire protection program.

Based on the results of this inspection, the NRC has determined that one Severity Level IV violation of NRC requirements occurred. The violation related to the licensee's failure to implement the Fire Protection Program as required by 10 CFR 50.48(f)(1), regarding fire watches. Since the licensee placed the deficiency into its corrective action program, the safety significance of the issue was determined to be low, and because the violation was non-repetitive and not willful, then this violation is being treated as a Non-Cited Violation (NCV), consistent with Section 2.3.2.a of the NRC Enforcement Policy. The current NRC Enforcement Policy is included on the NRC's Web site at (https://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html). This NCV is described in the subject inspection report.

You are not required to respond to this letter unless the description herein does not accurately reflect your corrective actions or your position. However, if you contest the violation or significance of the NCV, 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: (1) the Regional

Administrator, Region IV, and (2) the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter, its enclosure, and your response, if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Website at http://www.nrc.gov/reading-rm/adams.html. To the extent possible, your response, if you choose to provide one, should not include any personal privacy or proprietary information so that it can be made available to the public without redaction.

If you have any questions regarding this inspection report, please contact Stephanie Anderson at 817-200-1213, or the undersigned at 817-200-1249.

Sincerely,

Signed by Warnick, Gregory
on 07/05/23

Gregory G. Warnick, Chief
Decommissioning, ISFSI, and Operating
Reactor Branch
Division of Radiological Safety and Security

Docket No. 050-00285
License No. DPR-40

Enclosure:
Inspection Report 050-00285/2023-003

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ADAMS ACCESION NUMBER: **ML23177A119**

X☐ SUNSI Review ADAMS: ☐ Non-Publicly Available **X**☐ Non-Sensitive Keyword:

BySGA **X**☐ Yes ☐ No **X**☐ Publicly Available ☐ Sensitive

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U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.:	050-00285
License No.:	DPR-40
Report No.:	050-00285/2023-003
Licensee:	Omaha Public Power District
Facility:	Fort Calhoun Station
Location:	9610 Power Lane Blair, Nebraska
Dates:	June 12-15, 2023
Inspectors:	Stephanie G. Anderson, Senior Health Physicist Decommissioning, ISFSI, and Operating Reactor Branch Division of Radiological Safety and Security
	M. Troy Johnson, Health Physicist Decommissioning, ISFSI, and Operating Reactor Branch Division of Radiological Safety and Security
Accompanied By:	Daniel J. Fiedorek, General Engineer NRAN Materials Inspection Branch Division of Radiological Safety and Security
Approved By:	Gregory G. Warnick, Chief Decommissioning, ISFSI, and Operating Reactor Branch Division of Radiological Safety and Security

Enclosure

EXECUTIVE SUMMARY

Fort Calhoun Station
NRC Inspection Report 050-00285/2023-003

This U.S. Nuclear Regulatory Commission (NRC) inspection was a routine, announced inspection of decommissioning activities being conducted at the Fort Calhoun Station. In summary, the inspectors concluded that the licensee was conducting activities in accordance with site procedures, license requirements, and applicable NRC regulations.

Decommissioning Performance and Status Review at Permanently Shutdown Reactors

- The licensee was conducting decommissioning activities in accordance with license and regulatory requirements. Licensee management was maintaining appropriate oversight of decommissioning activities, with a focus on safety. Staffing levels were commensurate with the current facility activities. (Section 1.2)

Fire Protection Program at Permanently Shutdown Reactors

- The NRC determined one Severity Level IV NCV of 10 CFR 50.48(f)(1), based on the licensee's failure to perform fire watches and document completed fire watches as required by site procedures. (Section 2.2)

Solid Radioactive Waste Management and Transportation of Radioactive Materials

- The licensee's contractor conducted waste management and transportation activities in accordance with the waste management plan, and site procedures. (Section 3.2)

Report Details

Summary of Plant Status

On June 24, 2016, Omaha Public Power District, the licensee, formally notified the NRC of its intent to permanently cease operations at Fort Calhoun Station (FCS) (Agencywide Documents Access and Management System [ADAMS] Accession No. ML16176A213). The licensee permanently ceased power operations on October 14, 2016, and certified pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.82(a)(1)(ii) that as of November 13, 2016, all fuel had been permanently removed from the FCS reactor vessel and placed into the spent fuel pool (ML16319A254).

The licensee submitted its Post-Shutdown Decommissioning Activities Report (PSDAR) to the NRC on March 20, 2017 (ML17089A759). The PSDAR described the licensee's proposed decommissioning activities and schedule. At that time, the licensee selected the SAFSTOR decommissioning option. SAFSTOR is a method of decommissioning in which a nuclear facility is placed and maintained in a condition that allows the facility to be safely stored and subsequently decontaminated (deferred decontamination) to levels that permit release for unrestricted use.

In April 2019, the licensee changed its decommissioning approach from SAFSTOR to DECON. DECON is a method of decommissioning in which structures, systems, and components that contain radioactive contamination are removed from the site and safely disposed at a commercially operated low-level waste disposal facility or decontaminated to a level that permits the site to be released for unrestricted use shortly after it ceases operation. By letter dated December 16, 2019, FCS submitted an updated PSDAR to reflect the change from SAFSTOR to DECON (ML19351E355).

On May 13, 2020, FCS removed the last canister of fuel and all special nuclear material from the spent fuel pool (ML20139A138). Accordingly, FCS entered the Independent Spent Fuel Storage Installation (ISFSI)-only Technical Specifications and Emergency Plan on May 18, 2020, and ISFSI-only Security Plan on June 24, 2020.

Title 10 CFR 50.82(a)(9) specifies that an application for license termination must be accompanied or preceded by a license termination plan (LTP). On August 3, 2021, FCS submitted its LTP to the NRC (ML21271A178). The NRC accepted the LTP for a detailed technical review on February 10, 2022 (ML22038A675). On July 13, 2022, the NRC held a public meeting at Blair Public Library & Technology Center and discussed the NRC's process and timeline for reviewing the LTP.

Since the previous inspection in April 2023, the licensee and contractors have continued with active decommissioning, including conducting final status surveys. The segmentation of the reactor vessel had not been started due to issues lifting the reactor vessel into the upper cavity. The lower cavity cleanup activities were on pause due to the preparations for the reactor vessel segmentation. In addition, the licensee continued to ship radioactive waste to licensed disposal sites. Demolition of the administrative building was ongoing.

1 Decommissioning Performance and Status Review at Permanently Shutdown Reactors (IP 71801)

1.1 Inspection Scope

The inspectors conducted interviews, attended licensee meetings, reviewed procedures, and conducted site tours to: (1) evaluate the status of decommissioning and verify whether the licensee is conducting decommissioning activities in accordance with regulatory and license requirements; (2) maintain awareness of work activities to assess licensee control and conduct of decommissioning; and (3) evaluate the licensee's decommissioning staffing, including that of the contracted workforce, to ensure that license requirements are met, as applicable to the current decommissioning status.

1.2 Observations and Findings

Title 10 CFR 50.71(e)(4), requires, in part, that the updated PSDAR be submitted to the NRC every 24 months. The licensee submitted their updated PSDAR on March 10, 2022, for NRC staff review (ML22081A040, ML22081A041, ML22081A042, ML22081A043, and ML22081A044). Section 2.0 of the updated PSDAR provides a general description of the planned decommissioning activities. The PSDAR states that decommissioning activities will be performed in accordance with written, reviewed, and approved site procedures. The inspectors reviewed selected decommissioning activities in progress, interviewed staff responsible for the work, and reviewed selected procedures and other related documents to ensure that decommissioning activities were being conducted as described in the PSDAR.

The inspectors attended routine licensee decommissioning status meetings during the inspection. The inspectors attended the management performance challenge meeting in which the individual program area leads provided details on the status of their respective activities. The inspectors concluded that licensee management was maintaining appropriate oversight of decommissioning activities, with a focus on safety.

The inspectors toured the facility, including containment, the containment waste structure (CWS), deconstruction areas, and the waste processing structure (WPS) and observed general work in progress while evaluating the material condition inside containment. The licensee was currently working through technical issues lifting the reactor vessel out of its position into the upper cavity. Housekeeping was adequate in containment, and the radiological controls were consistent with regulatory requirements.

During the previous NRC inspection, the licensee had notified the inspectors of a piece of metal that had exceeded 2000 Roentgen per hour while collecting chips at the bottom of the reactor vessel. Multiple chips were found in the bottom the reactor vessel in preparations for the reactor vessel segmentation activities. The identification of these pieces of debris for evaluation was captured in condition report CR-2023-0065. At the time of the inspection these chips were being characterized by Waste Management Group to determine waste classification. The inspectors interviewed several members of the licensee staff on the cause of this debris found and the classification of the waste found, which had not been completed at the time of this inspection.

Prior to this inspection on site, the licensee notified the regional inspectors and headquarters' project manager of elevated activity in 14 areas in the deconstruction area while final status survey technicians were performing walkover surveys in the Class 1 deconstruction area non-radiological controlled area. The discovery of elevated activities and action taken by the licensee were captured in CR-2023-0073. The licensee put additional controls in place to have individuals frisk hands and feet prior to leaving the area, performed remediation activities on the spots identified, and sent 11 samples to GEL labs to perform a hard to detect analysis. The results are due back to the licensee no later than the week of July 10, 2023. The main radionuclide of concern that was identified was Co-60. The inspectors performed an informational gamma survey of the deconstruction area. The survey was performed utilizing a grid pattern originating from a random starting location using a Thermo Fisher Scientific Radeye SX with a SPA3 probe (Serial No. 52223-19205 calibrated on December 19, 2022). Background taken on the road outside of the deconstruction area was approximately 8.5K counts per minute (cpm). Gamma radiation readings measured in the deconstruction area ranged approximately from 5K cpm to 15K cpm with no significant readings noted.

Lastly, the inspectors met with senior management and discussed the site activities, schedule for site license termination, and evaluated staff levels for the licensee and onsite contractors. The licensee's current critical path includes segmentation of the reactor vessel and then removal of large components from inside containment. Onsite staffing has not had any major changes, and the licensee has no current plans to make any significant staffing changes. The inspectors determined that onsite staffing was consistent with the current work in progress.

1.3 Conclusion

The licensee was conducting decommissioning activities in accordance with license and regulatory requirements. Licensee management was maintaining appropriate oversight of decommissioning activities, with a focus on safety. Staffing levels were commensurate with the current facility activities.

2 Fire Protection Program at Permanently Shutdown Reactors (IP 64704)

2.1 Inspection Scope

The inspectors reviewed documents, interviewed plant personnel, and performed plant tours to: (1) assess whether the licensee has an effective decommissioning fire protection program that is maintained and implemented to address the potential for fires that could result in the release or spread of radioactive materials; (2) verify in the absence of spent fuel in the spent fuel storage pool, the decommissioning fire protection program ensures adequate protection from the fire-induced release of radioactive material from contaminated plant areas and combustible waste products; and (3) assess field conditions and the storage of combustible materials.

2.2 Observations and Findings

Title 10 CFR 50.48(f) states, in part, that the licensee shall maintain a fire protection program to address the potential for fires that could cause the release or spread of

radioactive materials or result in a radiological hazard. The inspectors reviewed the licensee's fire protection program for compliance with regulatory and license requirements. The inspectors reviewed the fire protection program as defined by procedure CC-FC-211, "Fire Protection Program," revision 13.

Regulatory Guide 1.191, "Fire Protection Program for Nuclear Power Plants During Decommissioning and Permanent Shutdown," describes the methods acceptable to the NRC for complying with the NRC's regulations for fire protection programs for licensees in decommissioning. This regulatory guide is referenced in the licensee's implementing procedures, and the inspectors compared the licensee's fire protection program to the guidance provided in the regulatory guide.

The licensee's fire protection program records included a fire hazards analysis. This document provided an analysis of the various plant areas and the fire protection requirements for those areas. The licensee also developed a detailed decommissioning fire plan document, as detailed by procedure FCSD-FP-100, "Decommissioning Fire Plan," revision 9, that described onsite fire response staffing, onsite fire response organization responsibilities, pre-fire plans for the ISFSI Operating Facility and ISFSI Area, and fire report preparation after reportable fires.

According to 10 CFR 50.48(f), the objectives of the fire protection program are to: (1) reasonably prevent fires that could result in a radiological hazard from occurring; (2) rapidly detect, control, and extinguish those fires that do occur; and (3) ensure that the risk of fire-induced radiological hazards to the public, environment and plant personnel is minimized. The inspectors compared the licensee's fire protection program against the objectives provided in the regulations.

To prevent fires from occurring, the licensee established and implemented administrative procedures for fire prevention for hot work, control of temporary heat sources, control of transient combustible material, and impairments and compensatory measures. The inspectors conducted site tours to confirm that the procedure controls were being implemented. In particular, the inspectors toured the fire areas in the containment building and the waste processing facility (WPS). The inspectors concluded that the licensee was not effectively controlling the fire protection impairment controls in accordance with procedure requirements.

The NRC inspectors evaluated the licensee's implementation of procedures and determined that the licensee's failure to implement the fire protection system impairment control procedure was a violation of 10 CFR 50.48(f)(1), which requires, in part, that licensees maintain a fire protection program to address the potential for fires that could causes the release or spread of radioactive materials, including reasonable preventing these fires. Procedure OP-FC-201-007, "Fire Protection System Impairment Control," revision 9, appendix A requires a 6-hour fire watch shall be performed in any area of the decommissioning area without fire detection. Additionally, step 4.6.2, requires the individual assigned for fire watch duty shall record the actual time and date, their name, security badge number, and each time the fire watch inspection is performed.

Contrary to the above, from December 7, 2022 – May 10, 2023, the licensee failed to perform and/or record all fire watch inspections in areas of the decommissioning area without fire detection. Specifically, 16 fire watches that were completed were not recorded on attachment 2, fire watch inspection log as required. Also, on December 7, 2022, the fire watch at time 0100 was not performed inside containment and on May 10, 2023, the fire watches at times 0700 and 1300 were not performed.

This violation was evaluated to be a Severity Level IV violation using Section 6.3.d.3 of the NRC Enforcement Policy, dated January 13, 2023, regarding the failure to implement procedures, which has a low safety significance.

Upon identification, the licensee entered the issues into its corrective action program as Condition Report # CR-2023-00088. The licensee took the following immediate actions: (1) initiated a department human performance standdown; (2) set management expectations to complete targeted observations of the containment access control process and shift paperwork adequacy; and (3) evaluating updates to the Firewatch form to make it user friendly and support oversight reviews.

Since the licensee placed the deficiency into its corrective action program, the safety significance of the issue was determined to be low, and because the violation was not willful or repetitive; this violation was treated as a non-cited violation (NCV), consistent with section 2.3.2.a of the NRC Enforcement Policy (NCV 05000285/2023003-01, Failure to implement the fire protection system impairment control procedure).

The inspectors also reviewed the fire brigade staffing requirements, training records, and the memorandums of understanding with the offsite fire brigades. All staff training requirements were completed satisfactorily.

2.3 Conclusion

The NRC determined one Severity Level IV NCV of 10 CFR 50.48(f)(1), based on the licensee's failure to perform fire watches and document completed fire watches as required by site procedures.

3 Solid Radioactive Waste Management and Transportation of Radioactive Materials (IP 86750)

3.1 Inspection Scope

The purpose of this portion of the inspection was to verify the effectiveness of the licensee's programs for processing, handling, storage, and transportation of radioactive material.

3.2 Observations and Findings

Inspectors observed select activities in progress, reviewed relevant procedures, and examined shipping packages to determine, in part, if the contractor was effectively managing waste management and transportation programs.

The licensee uses Energy*Solutions* as its contractor to handle and ship radioactive waste as governed by procedure FCSD-RW-PG-100, “Waste Management Program,” revision 0. At the time of the inspection, rail cars were being loaded and prepared for transport off site. Additionally, rainwater from the auxiliary building basement sump was being processed.

Procedure FCSD-RP-505, “Decommissioning Outdoor Radioactive Material Storage,” revision 0 controls the storage of radioactive materials outside of the containment structure. The inspectors walked the radioactive material storage location at the Waste Processing Structure and verified radioactive materials are appropriately controlled, labelled, and posted. This included evaluation of the material condition of containers such as evidence of swelling, leakage, or deformation as applicable. All materials were noted as being controlled and stored in accordance with site procedures.

Brokering of radioactive materials is performed by procedure ES-BR-PR-001, “Operating Procedure for Brokering of Hazardous Materials,” revision 14. The inspectors reviewed two randomly selected radioactive waste shipping packages for rail cars that were scheduled to ship in the immediate future. The inspectors verified each shipment was appropriately characterized, classified, and prepared. Additionally, the inspectors independently verified shipment marking, labeling, and placarding to ensure it was consistent with the information in the shipping documentation.

The licensee used procedure FCSD-RP-300, “Radiological Survey Program,” revision 2 to perform radiation surveys of rail cars being prepared for shipment. The inspectors observed radiation surveys in progress and reviewed the documentation of three randomly selected radiation surveys from rail cars that were ready to be shipped off site. The observed in progress survey and survey documentation were performed in accordance with site procedure.

At the time of the inspection, rainwater was being processed from the auxiliary building sump. Liquid processing is covered by several procedures based upon the operation in progress at the time. Specifically, CS-OP-PR-008, “Setup and Operation Of Energy*Solutions* Self-Engaging Dewatering System Fillhead,” revision 5 and CS-OP-PR-010, “Bead Resin/Activated Carbon Dewatering Procedure For Energy*Solutions* 14-215 Or Smaller Liners, Utilizing Energy*Solutions* Self-Engaging Dewatering System (S.E.D.S.),” revision 4 were in use at the time. The inspectors walked down the Self-Engaging Dewatering System and associated piping and hoses. The processing was noted as being conducted in accordance with the applicable procedures.

Training and qualifications for personnel who handle radioactive waste shipping preparations are trained under procedure FCSD-RW-PR-315, “Training and Qualification of Waste Management Personnel,” revision 2. Brokering of radioactive waste is specifically trained and qualified under procedure ES-BR-PR-003, “Training and certification of Hazardous Materials Brokers,” revision 5. The inspectors reviewed the training program for select Energy*Solutions* transportation broker staff. The inspectors noted that training was adequate, up to date, and implemented in accordance with site procedures.

The licensee controls the reactor containment area as a 10 CFR Part 37 controlled area using procedure FCSI-SY-208, “Fort Calhoun Station Part 37 Security Plan for the Protection of Category 1 and Category 2 Quantities of Radioactive Material,” revision 4. Specifically, section 5 describes FCS procedures that implement 10 CFR Part 37 controls for this or any other area requiring enhanced security. The inspectors observed the security guard perform their duties at the reactor containment access control and questioned the guard to assess, in part, their procedural knowledge required to permit unescorted access. The guard displayed an adequate level of knowledge and performed their duties in compliance with procedures and regulations.

Source leak tests and inventories are documented (with attached supporting documentation) on form FCSD-RP-800-F-1, “Source Leak Test and Inventory,” revision 0. The licensee maintains its sealed source inventory using SOURCETRAX accountability software. The inspectors reviewed the most recent source inventory and leak check data of select sources in the Security Access Facility performed on May 1, 2023. No findings of significance were noted.

The corrective action program appears to be effective with condition reports being written to address problems as they occur with corresponding corrective actions developed and implemented with a focus on preventing reoccurrence.

3.3 Conclusion

The licensee’s contractor conducted waste management and transportation activities in accordance with the waste management plan, and site procedures.

4 Exit Meeting Summary

On June 15, 2023, the inspectors presented the final inspection results to members of your staff. All proprietary information was returned to licensee representatives.

SUPPLEMENTAL INSPECTION INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

T. Uehling, Senior Director, FCS Decommissioning
T. Maine, Plant Manager, Decommissioning
J. Nowak, Project Manager, Decommissioning
A. Barker, Regulatory Assurance & Emergency Planning Manager
A. Hanson, Principle Regulatory Specialist
K. Daughenbaugh, ISFSI Shift Supervisor
D. Whisler, Manager Radiation Protection & Chemistry

INSPECTION PROCEDURES USED

IP 71801	Decommissioning Performance and Status Review at Permanently Shutdown Reactors
IP 64704	Fire Protection Program at Permanently Shutdown Reactors
IP 86750	Solid Radioactive Waste Management and Transportation of Radioactive Materials

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened/Closed

05000285/2023003-01	NCV	Failure to implement the fire protection system impairment control procedure

Discussed

None

LIST OF ACRONYMS

10 CFR	Title 10 of the *Code of Federal Regulations*
ADAMS	Agencywide Documents Access and Management System
CPM	counts per minute
CWS	Containment Waste Structure
FCS	Fort Calhoun Station
IP	Inspection Procedure
ISFSI	Independent Spent Fuel Storage Installation
LTP	License Termination Plan
NCV	Non-cited Violation
NRC	U.S. Nuclear Regulatory Commission
PSDAR	Post-Shutdown Decommissioning Activities Report
WPS	Waste Processing Structure