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

August 21, 2024

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 05000285/2024-002

Dear Troy Via:

This letter refers to the U.S. Nuclear Regulatory Commission (NRC) decommissioning inspection conducted August 5-8, 2024, at the Fort Calhoun Station near Blair, Nebraska. The NRC inspectors discussed the results of the decommissioning inspection with members of your staff at the conclusion of the onsite inspection. The inspection results are documented in the enclosure to this letter.

The NRC 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 decommissioning performance, occupational radiation exposures, and remediation surveying. No violations were identified, and no response to this letter is required.

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 Christian Dennes at 301-415-3741 or the undersigned at 817-200-1249.

Sincerely,

Signed by Warnick, Gregory
on 08/21/24

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 050-00285/2024-002

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U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.	050-00285
License No.	DPR-40
Report No.	050-00285/2024-002
Licensee:	Omaha Public Power District
Facility:	Fort Calhoun Station
Location:	9610 Power Lane Blair, Nebraska
Dates:	August 5-8, 2024
Inspectors:	Christian R. Dennes, Health Physicist Decommissioning, ISFSI, and Operating Reactor Branch Division of Radiological Safety and Security
	Robert J. Evans, PhD, Senior Health Physicist Decommissioning, ISFSI, and Operating Reactor 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 050-00285/2024-002

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

- The inspectors attended a daily site status meeting, in part, to ensure that the licensee and its decommissioning contractor continued to plan and implement decommissioning in a controlled manner. The inspectors observed decommissioning work in progress and concluded that the work was being conducted with an emphasis on industrial and radiological safety. Critical positions in the organizational structure were staffed. The licensee continued to identify problems and implement its corrective action program in accordance with quality assurance program requirements. (Section 1.2)

Occupational Radiation Exposure

- The licensee is ensuring adequate airborne and contamination controls, protection of worker health, and safety from exposure to radiation or radioactive material. (Section 2.2)

Inspection of Remedial and Final Surveys

- The remedial action support survey program was being implemented in accordance with procedural requirements. The licensee implemented isolation and control measures after completion of a final status survey as required by the License Termination Plan and site procedure. During the inspection, a confirmatory survey was being conducted by a contractor for the NRC. These survey results will be presented to the licensee under separate correspondence. The licensee continued to identify problems and implement corrective actions for problems identified in this program area. (Section 3.2)

Material Control and Accounting at Decommissioning Nuclear Power Reactors

- The licensee continued to implement a material control and accounting program as required by regulations. The program included the required procedures, records, and inventory control. (Section 4.2)

Report Details

Summary of Site Status

Fort Calhoun Station permanently ceased power operations in 2016. In accordance with Title 10 to the *Code of Federal Regulations* (10 CFR) 50.82(a)(4), the licensee submitted a Post-Shutdown Decommissioning Activities Report (PSDAR) to the NRC in March 2017 (Agencywide Documents Access and Management System [ADAMS] Accession Number ML17089A759). The PSDAR was revised in December 2019 (ML19351E355) and July 2022 (ML21271A605). The PSDAR contains a description of the planned decommissioning activities along with a schedule for their accomplishment.

10 CFR 50.82(a)(9) specifies that an application for license termination must be accompanied or preceded by the License Termination Plan (LTP). The licensee submitted its proposed LTP to the NRC in August 2021. The NRC conducted an acceptance review and submitted two requests for additional information to the licensee. The licensee submitted a revised LTP to the NRC in December 2023 (ML23346A152). The NRC approved the LTP by license amendment in January 2024 (ML24019A167). The LTP includes the NRC-approved final status survey program.

Since the previous inspection, the licensee shipped steam generator A and the pressurizer for offsite disposal. Steam generator B was removed from containment and placed in the mausoleum building for segmentation. The reactor coolant pumps were removed from containment, and the pumps were being prepared for offsite shipment for disposal.

During the inspection, the licensee continued to decommission the interior of containment. The wastes were being moved to the waste processing structure for preparation for shipment to a disposal site. The licensee continued to dewater the sanitary lagoon for removal and remediation of the sediments and liner. In addition, the licensee continued to conduct radiological assessments and remedial action support surveys at several locations around the site.

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

1.1 Inspection Scope

The inspectors observed site activities, reviewed records, and interviewed site personnel to:

- Evaluate the status of decommissioning and verify whether the licensee was conducting decommissioning and maintenance activities in accordance with regulatory and license requirements.
- Maintain awareness of work activities to assess licensee control and conduct of decommissioning.
- Evaluate select licensee decommissioning staffing, personnel qualifications, and training requirements, including that of the contracted workforce, to ensure that license requirements were met, as applicable to the current decommissioning status.

1.2 Observations and Findings

a. Status of Decommissioning

The inspectors attended a daily site status meeting to ensure that the licensee and its decommissioning contractor continued to plan and implement decommissioning in a controlled manner. The inspectors noted that the review, assessment, and scheduling of facility decommissioning, as well as problem identification were being adequately managed. The inspectors discussed with licensee staff the status of decommissioning and noted the activities were on schedule commensurate with challenges encountered.

The inspectors conducted independent radiological assessments during site tours using a hand-held survey meter, a RadEye G gamma survey meter (serial number 30901, calibration due date 1/19/25). The inspectors confirmed that posted signs and survey results were consistent with regulatory requirements.

b. Decommissioning Operations

The inspectors conducted site tours, in part, to observe decommissioning activities in progress. The inspectors observed decommissioning in progress inside containment, at the mausoleum, and at the waste processing structure. Inside containment, heavy equipment was demolishing the internal area. Equipment was being removed from containment and was being staged outside of containment for future shipment. The inspectors reviewed work package DWP No. 2023-006, “Containment Demolition,” and noted that the work package provided basic instructions for the work in progress. Supporting documents included the radiation work, hot work, and transient combustible permits.

At the time of the inspection, the remaining concrete, support steel, and system components in containment were being demolished and removed in a top-down approach. The debris was being transported to the nearby waste processing structure for downsizing, packaging, loading, and transport for disposal. The inspectors toured the mausoleum, the location where steam generator B was being segmented for future shipment.

The inspectors noted good health physics controls in all three areas including use of portable air samplers to monitor employee exposures to airborne radioactive material. Industrial samplers were also observed in operation. Ventilation systems were in service to control airflow within the structures. In summary, the decommissioning work was being conducted with an emphasis on industrial and radiological safety.

c. Decommissioning Staffing and Training

The inspectors reviewed the organizational chart and confirmed that all critical positions had been filled. The licensee’s training program was not specifically reviewed during this inspection.

d. Problem Identification and Resolution

Section 16 of the Quality Assurance Topical Report, revision 18, requires the licensee to implement a corrective action program. The inspectors reviewed the most recent list of

corrective action condition reports issued since the last inspection as well as the list of condition reports of significance issued since 2023. The four condition reports of significance generally involve the radiation protection program. The licensee developed corrective actions for each of these identified problems.

As discussed in Section 3.2.d below, the inspectors conducted a detailed review of condition reports involving final status surveys and remedial action support surveys. In summary, the licensee continued to identify problems and implement its corrective action program in accordance with quality assurance program requirements.

1.3 Conclusion

The inspectors attended a daily site status meeting, in part, to ensure that the licensee and its decommissioning contractor continued to plan and implement decommissioning in a controlled manner. The inspectors observed decommissioning work in progress and concluded that the work was being conducted with an emphasis on industrial and radiological safety. Critical positions in the organizational structure were staffed. The licensee continued to identify problems and implement its corrective action program in accordance with quality assurance program requirements.

2 Occupational Radiation Exposure at Permanently Shutdown Reactors (Inspection Procedure 83750)

2.1 Inspection Scope

The inspectors gathered sufficient information to determine whether licensee performance met the following objectives:

- To ensure adequate protection of worker health and safety from exposure to radiation or radioactive material at permanently shutdown reactors.
- To evaluate whether the licensee adequately identifies problems and implements appropriate and timely corrective actions related to occupational radiation safety.

2.2 Observations and Findings

a. Airborne and Contamination Controls

The Inspectors reviewed work activities, observe the work activities, and assessed the adequacy of the licensee's air monitor program, practices, and dose assessments based on air sampling and derived air concentration-hour monitoring. The inspectors reviewed airborne radioactivity calculation sheets and lapel sample records from the laboratory to verify that the procedures and regulatory requirements were being met. The Inspectors determine that the program and practices were being accomplished adequately.

The inspectors conducted a walk down inside and outside of containment, and of the mausoleum and waste processing station to observe air monitors in service to determine whether they were appropriately positioned relative to the radiation source(s) or area(s) they were intended to monitor. The inspectors conducted a tour of temporary ventilation systems to verify that they were correctly configured to mitigate the potential for airborne radioactivity in the specified areas. The inspectors determined that the air monitors and

ventilation systems were adequately positioned and maintained, in accordance with procedures and regulations.

b. Problem Identification and Resolution

The inspectors observed and reviewed that the licensee was identifying problems related to radioactive waste storage, processing, and transportation activities at an appropriate threshold and entering them into the corrective action program. The inspectors reviewed procedure FCSD-RP-350 “Information Use Personnel Contamination Monitoring, Decontamination and Reporting,” revision 7, to evaluate the procedures used to assess, investigate, and document personnel radioactive contamination events. The inspectors determined that the licensee was adequately identifying inadequacies and entering them into their corrective action program according to procedures and regulatory requirements.

2.3 Conclusion

The licensee was ensuring adequate airborne and contamination controls, protection of worker health and safety from exposure to radiation or radioactive material. No significant findings were noted.

3 Inspection of Remedial and Final Surveys at Permanently Shutdown Reactors (IP 83801)

3.1 Inspection Scope

The objectives of this portion of the inspection were to:

- Verify that the site has been decontaminated to acceptable residual radioactivity levels in accordance with LTP requirements for unrestricted use.
- Verify that the licensee’s implementing procedures, radiological measurements, decommissioning surveys, and documentation of decommissioning surveys comply with the NRC-approved LTP.
- To conduct sufficient confirmatory or verification surveys so that NRC can verify and conclude that the licensee’s decommissioning activities and survey program have been implemented in a manner that provides confidence in the results that the site does not pose an undue risk to public health and safety.

3.2 Observations and Findings

a. Remediation Activities and Final Status Surveys (FSS)

The inspectors reviewed the licensee’s implementation of its remedial action support survey (RASS) program. The program requirements were documented in procedure FCSD-RA-LT-306, “Radiological Assessments and Remedial Action Support Surveys,” revision 4. There were no FSSs in progress during the onsite inspection, therefore, the FSS program was not reviewed in detail.

At the time of the inspection, RASS surveys were in progress in several land areas. A RASS survey was conducted, in part, to verify if a survey unit was ready for the FSS. The inspectors observed RASS surveys in progress and interviewed site staff. The

inspectors noted that the observed areas (survey units 9010 and 9011) had boundary and radiological cleanliness controls in place. These two survey units were located just to the north of containment. The inspectors confirmed that the survey meters were proper for the surveys, and the surveyors were conducting the survey in accordance with procedural requirements.

The inspectors observed that the RASS surveyors used action levels that were conservatively calculated. Several small areas were identified by the surveyors to exceed this conservative action level, and the licensee implemented measures to remediate these areas when identified. Based on soil sample results, very low concentrations of cesium-137 or naturally occurring radioactive material were identified in survey units 9010 and 9011.

Finally, the inspectors reviewed the survey design packages for both survey units, and the information provided in the packages agreed with procedural requirements. In summary, the RASS survey program was being implemented in accordance with procedural requirements.

b. FSS Isolation and Control Measures

Section 5.2.3 of the LTP requires the licensee to implement isolation and control measures as part of the FSS process. Isolation and control methods are established in survey units to ensure that radioactive material is not reintroduced into the area from ongoing decommissioning activities and to maintain the as-left radiological and physical conditions of the surveyed area. The LTP requires, in part, area surveillances following completion of the FSS in that area, and that documented routine surveillances will be performed on a semi-annual basis.

The inspectors reviewed the licensee's program for isolation and control. Details about the program were provided in procedure FCSD-RA-LT-303, "Final Status Survey Isolation and Control Measures," revision 1. The procedure included instructions for both isolation and control measures and surveillance requirements. Isolation and control included both administrative and physical controls. Surveillances included field inspections, self-assessments, document reviews, survey unit inspections, and if necessary, radiological surveys. The inspectors noted that the licensee had established an isolation and control and surveillance programs in accordance with LTP and procedure requirements.

The inspectors reviewed the licensee's program to ensure that surveillances were being conducted as required by site procedure and the LTP. The licensee-maintained records to demonstrate that survey units under isolation and control were being surveilled at the proper interval. The surveillances were being documented on the "FSS I&C Surveillance Summary" form, and the surveillances were being tracked on a spreadsheet.

The inspectors conducted site tours, in part, to observe the isolation and control measures in place at the site. The areas that were toured were noted to be administratively controlled with access entry logs. Also, the areas were posted and roped off to help prevent accidental entries into the areas. In summary, the licensee had implemented isolation and control measures as required by the LTP and the site procedure.

c. Verification and Confirmatory Surveys

The NRC contracted with Oak Ridge Associated University (ORAU) to develop and perform a comprehensive independent confirmatory survey such that the NRC can effectively assess the adequacy of the licensee's FSS results. The ORAU staff conducted surveys of outdoor areas around the facility and limited surveys within the stressing gallery. These survey results will be presented to the licensee under separate correspondence.

d. Problem Identification and Resolution

The inspectors reviewed select condition reports identified in the FSS and RASS survey programs, to ensure that problems being identified in the field are entered into the licensee's corrective action program. The documented problems included identification of elevated pockets of radioactivity during performance of surveys. In summary, the licensee continued to identify problems and implement corrective actions for these problems.

3.3 Conclusions

The RASS survey program was being implemented in accordance with procedural requirements. The licensee implemented isolation and control measures after completion of a FSS as required by the LTP and site procedure. A confirmatory survey was being conducted by a contractor for the NRC. These survey results will be presented to the licensee under separate correspondence. The licensee continued to identify problems and implement corrective actions for problems identified in this program area.

4 Material Control and Accounting at Decommissioning Nuclear Power Reactors (IP 85103)

4.1 Inspection Scope

The inspectors reviewed records and interviewed licensee staff to:

- Verify that the licensee has implemented and is maintaining an adequate and effective program to control and account for the special nuclear material (SNM) in its possession; and
- Ensure that the licensee can detect loss, theft, or diversion of SNM in a timely manner.

4.2 Observations and Findings

10 CFR Part 74 provides the requirements for control and accounting of SNM at fixed sites and for documenting the transfers of SNM. The material control and accounting (MC&A) program at decommissioning power reactors have three components: records, procedures, and inventory. The inspectors reviewed the licensee's implementation of its MC&A program and associated records, and the inspectors interviewed the program administrator. The inspectors compared the program in place at the time of the inspection to the requirements provided in 10 CFR Part 74. The inspectors reviewed the records for the last three calendar years.

The regulatory requirements for material status reports and nuclear material transaction reports are provided in 10 CFR 74.13 and 74.15, respectively. These requirements include instructions for submittal of material balance reports (NRC Form 742) and transfer and receipt reports (NRC Form 741), as needed. The inspectors confirmed that the material balance reports were submitted to the NRC's Nuclear Materials Management and Safeguards System (NMMSS) in the last three years, following the instructions provided in 10 CFR 74.13(a). These submittals included the physical inventory listing report (NRC Form 742C). All reports were submitted to the NRC in a timely manner.

The licensee made one transfer in the last three years, the transfer of plutonium-beryllium calibration source in November 2023. The licensee submitted NRC Form 741 to NMMSS as required by 10 CFR 74.15.

10 CFR 74.19 provides the recordkeeping requirements. These requirements include instructions for written MC&A procedures. The licensee had developed procedures for overall MC&A program instructions, inventory requirements, move/relocation sheets, and shipment of SNM. This regulation also requires the licensee to conduct annual inventories of SNM in its possession. The inspectors confirmed that the licensee conducted annual inventories in the last three years, and the licensee-maintained records of these inventories. The annual inventory included additional SNM that did not meet the 10 CFR Part 74 reporting requirement (1 gram or more of SNM).

The inspectors asked the program administrator about the receipt records for the reactor fuel, records required by 10 CFR 74.19(a)(1). The program administrator stated that the fuel receipt records were being stored in the licensee's records management program.

Finally, the inspectors reviewed the licensee's corrective action program for problems identified in this program area. No problems were recently identified in this program area.

4.3 Conclusions

The licensee continued to implement an MC&A program as required by regulations. The program included the required procedures, records, and inventory control.

5 Exit Meeting Summary

The inspectors presented the final inspection results to the Regulatory Assurance & Emergency Planning Manager, and other members of the licensee's staff, at the conclusion of the onsite inspection. The inspectors asked if there were any materials examined were proprietary. No proprietary information was removed from the site. The inspectors indicated that ORAU staff were on site that week conducting confirmatory surveys, and that no elevated areas of radioactivity were detected in the specific areas that were surveyed.

SUPPLEMENTAL INSPECTION INFORMATION

KEY POINTS OF CONTACT

Licensee and Contractor Personnel

A. Barker, Regulatory Assurance & Emergency Planning Manager
K. Daughenbaugh, ISFSI Shift Supervisor
T. Uehling, Senior Director Decommissioning
R. Hugenroth, Manager Nuclear Oversight
A. Hansen, Principal Regulatory Specialist
C. Heimes, Manager ISFSI Site Security
A. Kodra, License Termination Plan/Final Status Survey Project Manager, Energy*Solutions*
J. Layton, Supervisor Outage Planning & Scheduling
T. Maine, Plant Manager
B. Bishop, Energy Solutions LTP/FSS Manager
E. Palzar, Energy Solutions LTP/FSS Program Manager
J. Nowak, Project Director, Energy*Solutions*
B. Pearson, Supervisor Radiation Protection

INSPECTION PROCEDURES USED

IP 71801	Decommissioning Performance and Status Review at Permanently Shutdown Reactors
IP 83750	Occupational Radiation Exposure at Permanently Shutdown Reactors
IP 83801	Inspection of Remedial and Final Surveys at Permanently Shutdown Reactors
IP 85103	Materials Control and Accounting

LIST OF ACRONYMS

ADAMS	Agencywide Documents Access and Management System
CFR	*Code of Federal Regulations*
FSS	Final Status Survey
IP	Inspection Procedure
LTP	License Termination Plan
MC&A	material control & accounting
ORAU	Oak Ridge Associated Universities
NMMSS	Nuclear Materials Management and Safeguards System
NRC	Nuclear Regulatory Commission
PSDAR	Post Shutdown Decommissioning Activities Report
RASS	Remedial Action Support Survey
SNM	special nuclear material