



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
REGION IV  
1600 E. LAMAR BLVD.  
ARLINGTON, TX 76011-4511

August 4, 2017

Ms. Mary J. Fisher  
Senior Director for Decommissioning  
Omaha Public Power District  
Fort Calhoun Station  
9610 Power Lane, Mail Stop FC-2-4  
Blair, NE 68008

SUBJECT: FORT CALHOUN STATION – NRC INSPECTION REPORT 05000285/2017-009

Dear Ms. Fisher:

This letter refers to the U.S. Nuclear Regulatory Commission (NRC) inspection conducted on June 12-16, 2017, at the Fort Calhoun Station located in Blair, Nebraska. The NRC inspectors discussed the results of this inspection with you and other members of your staff during a preliminary exit meeting conducted on June 16, 2017. The inspectors performed additional in-office review on a 10 CFR 50.59 screening for engineering change (EC 69019) and a 10 CFR 50.54(a)(3) change to the Quality Assurance Topical Report, Revision 7. The inspectors conducted a final exit meeting on August 3, 2017, with Mr. B. Blome and other members of your staff. The inspection results are documented in the enclosure to this inspection report.

The NRC inspection examined activities conducted under your license as they relate to public health and safety, the common defense and security, and to confirm 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, observations of activities, and interviews with personnel. Specifically, the inspectors reviewed your planned decommissioning activities to support SAFSTOR conditions at the facility, controls for spent fuel safety, and effectiveness of the corrective action program, implementation of your safety review and design change program, and your implementation of the maintenance rule program under decommissioning. 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). ADAMS is accessible from the NRC's Website at <http://www.nrc.gov/reading-rm/adams.html>.

To the extent possible, your response 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 Rachel Browder at 817-200-1452, or the undersigned at 817-200-1191.

Sincerely,

*/RA/*

Ray L. Kellar, P.E., Chief  
Fuel Cycle and Decommissioning Branch  
Division of Nuclear Materials Safety

Docket No. 50-285  
License No. DPR-40

Enclosure:  
Inspection Report 05000285/2017-009;  
w/Attachment: Supplemental Information

**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION IV**

Docket No. 05000285

License No. DPR-40

Report No. 05000285/2017-009

Licensee: Omaha Public Power District

Facility: Fort Calhoun Station

Location: 9610 Power Lane  
Blair, Nebraska

Dates: June 12-16, 2017

Inspectors: Rachel S. Browder, C.H.P., Senior Health Physicist  
Fuel Cycle and Decommissioning Branch  
Division of Nuclear Materials Safety

Eric J. Simpson, C.H.P., Health Physicist  
Fuel Cycle and Decommissioning Branch  
Division of Nuclear Materials Safety

Approved By: Ray L. Kellar, P.E., Chief  
Fuel Cycle and Decommissioning Branch  
Division of Nuclear Materials Safety

Enclosure

## EXECUTIVE SUMMARY

Fort Calhoun Station  
NRC Inspection Report 05000285/2017-009

This U.S. Nuclear Regulatory Commission (NRC) inspection was a routine, announced inspection of decommissioning activities being conducted at the Fort Calhoun Station (FCS) under Inspection Report 05000285/2017-009. In summary, the licensee was conducting these activities in accordance with site procedures, license requirements, and applicable NRC regulations.

### Decommissioning Performance

- The licensee had benchmarked decommissioning activities in preparation of the SAFSTOR strategy with other decommissioned facilities. The license was using a methodical approach to identify and safely prepare the facility for SAFSTOR in accordance with its procedures and the Post-Shutdown Decommissioning Activities Report (PSDAR). (Section 1.2)

### Spent Fuel Pool Safety

- The Fort Calhoun, Unit 1 spent fuel pool was being maintained in accordance with technical specifications (TS) and procedural requirements. The licensee was safely storing the spent fuel assemblies contained in the spent fuel pool. (Section 2.2)

### Self-Assessment, Auditing, and Corrective Actions

- The licensee was implementing its corrective action program in accordance with the appropriate regulatory requirements as prescribed by the Quality Assurance Topical Report (QATR). Responsible personnel were knowledgeable of the program and the status of the condition reports (CR) and established measures to monitor the completion of the assigned actions.
- The licensee's auditing and decommissioning safety review programs were being conducted and maintained in accordance with the appropriate regulatory requirements as prescribed by the QATR. The licensee had established audit, reviews, and oversight programs to ensure that activities were being conducted in accordance with the applicable regulatory function in a timely, independent, and appropriate manner. (Section 3.2)

### Safety Reviews, Design Changes, and Modifications

- The licensee's safety review processes, procedures, and training programs were being conducted and maintained in accordance with the appropriate regulatory requirements as prescribed by the QATR. The licensee had established 10 CFR 50.59 program to ensure that activities were being conducted in accordance with the applicable regulatory requirements, license conditions, and QATR procedures. The licensee's management, safety review, and other oversight committees were being conducted and maintained in accordance with appropriate regulatory requirements as prescribed by the QATR. (Section 4.2)

### Organization and Management

- The licensee maintained an overall organizational structure to support decommissioning activities. The licensee continued to implement an employee concerns program in which individuals could raise concerns without fear of retaliation. (Section 5.2)

### Maintenance Rule

- The licensee appropriately implemented the maintenance rule to ensure compliance with the requirements of 10 CFR 50.65 for structures, systems, and components associated with the storage, control, and maintenance of spent fuel. (Section 6.2)

## Report Details

### Summary of Plant Status

On June 24, 2016, Omaha Public Power District (OPPD), the licensee formally notified the NRC by letter of its intent to permanently cease operations of Fort Calhoun Station (FCS), (ADAMS Accession ML16176A213). By letter dated November 13, 2016, OPPD notified the NRC that it had permanently ceased power operations at FCS on October 24, 2016 and certified pursuant to 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 FCS spent fuel pool (ADAMS Accession ML16319A254). On December 28, 2016, the NRC informed the licensee that it was no longer under Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program," IMC 0608, "Performance Indicator Program," and IMC 2515, "Light-Water Reactor Inspection Program" when conducting oversight activities and assessing site performance. The licensee was informed that the NRC's oversight of licensed activities under decommissioning would be conducted under the provisions in IMC 2561, "Decommissioning Power Reactor Inspection Program."

The licensee submitted its Post-Shutdown Decommissioning Activities Report (PSDAR) on March 30, 2017, (ADAMS Accession ML17089A759). The PSDAR is not a licensing action and therefore is not approved by the NRC; however, the NRC reviews the report. On April 14, 2017, the NRC issued the public meeting notice for the PSDAR meeting (ADAMS Accession ML17117A557), which was held on May 31, 2017. The transcript of the public meeting is available on the NRC's Website at <http://www.nrc.gov/reading-rm/adams.html>, under ADAMS Accession No. ML17160A394.

The licensee selected the SAFSTOR decommissioning option, as described in the PSDAR. The licensee plans to continue in SAFSTOR until the spent fuel is transferred to the U.S. Department of Energy in 2058, at which time decommissioning activities will commence. The deferred decontamination and dismantling activities are scheduled to be conducted between 2059 through 2066, to support the termination of the operating license within the required 60-year time period.

On April 12, 2017, Region IV closed the Confirmatory Action Letter regarding the resolution of design issues that had been documented during the Inspection Manual Chapter 0350 operation period, based on FCS's commitment to either: 1) complete the design and licensing basis reconstitution for spent fuel pool/cooling and supporting structures, systems, and components, or 2) submit a license amendment request for an independent spent fuel cooling system (ADAMS Accession No. ML17102B737). The licensee committed to complete these actions by December 29, 2017.

## **1 Decommissioning Performance (71801)**

### **1.1 Inspection Scope**

The inspectors evaluated whether the licensee and its contracted workforce were conducting decommissioning activities in accordance with the license and regulatory requirements.

### **1.2 Observations and Findings**

The licensee submitted its PSDAR on March 30, 2017 (ADAMS Accession ML17089A759). The report was submitted under 10 CFR 50.82(a)(4)(i), which requires the licensee to submit the report prior to, or within 2 years following permanent cessation of operations, which was November 13, 2016. The licensee's PSDAR described the decommissioning activities and schedule to support SAFSTOR strategy for the facility, which is one of the options allowed by the NRC for decommissioning. The NRC subsequently held a public meeting in Omaha, Nebraska on May 31, 2017, to discuss and accept comments regarding the FCS PSDAR.

The licensee implemented benchmarking with other decommissioned reactor facilities, including Vermont Yankee and Kewaunee. The licensee formed a transition team and established a methodology to identify the initial activities to prepare the facility for the SAFSTOR strategy. These initial activities focused on pre-abandonment of systems no longer necessary. Pre-abandonment in this context entails activities such as, draining of water or disconnecting electricity from systems that did not affect spent fuel safety. These actions are preliminary to abandonment-in-place, which requires approved engineering change documentation or NRC approval. The inspectors reviewed the licensee's work activities, which included removal of systems from service that were no longer required to maintain the integrity of the reactor coolant pressure boundary, shutdown the reactor, and maintain the reactor in a shutdown condition.

At the time of the inspection, there had been no changes to the electrical systems that supported spent fuel safety. The licensee maintained a 161 kiloVolt (kV) offsite power source, which provided power to four 4160 Volt buses that provided electrical power to the raw water, component cooling water and spent fuel pool cooling systems. In addition, two emergency diesel generators remained available as backup electrical power to support spent fuel pool safety.

The licensee had initiated activities to reduce the electrical foot print of the station by reducing the lights in the facility. Items in the electrical system that had been pre-abandoned included nuclear instrumentation, reactor protection system, reactor regulating system, diverse scram system and control rod drive, all of which are not required to support spent fuel pool cooling.

The mechanical systems which supported spent fuel pool safety had not undergone any changes. These systems included raw water (ultimate heat sink), component cooling water, spent fuel pool cooling, instrument air and turbine plant cooling water. All major secondary systems had been drained, as well as primary systems not required for SAFSTOR and spent fuel safety. Pre-abandonment activities had been completed for the majority of the secondary plant systems as well as those systems that supported safety injection and chemical and volume control. The circulating water system was

drained in the turbine building and intake, to the point that the system could be drained. In addition, to enhance the reliability of the component cooling water and instrument air systems, the loads that were not required to support spent fuel pool cooling had been isolated. At the time of the inspection, no changes had been made to the fire protection systems, ventilation and heating systems.

The licensee had also established a hot spot reduction team. The licensee had reduced contaminated areas in the facility by approximately 1,800 square feet (ft<sup>2</sup>). The licensee was making preparations to flush the safety injection system in order to remove several hot spots located in pipe bends of the system, which served as an additional measure to reduce the radiological footprint. The licensee had evaluated the radiological conditions of the facility and identified areas that were necessary to support SAFSTOR preparations and spent fuel safety. Based on this assessment, the licensee locked several areas in order to maintain control over those areas that were not routinely traversed and to reduce the frequency of surveys in the radiologically controlled areas.

The licensee was in the process of converting its Exelon procedures to FCS decommissioning procedures, with the goal of completing the procedure transition by the end of 2017.

### 1.3 Conclusion

The licensee had benchmarked decommissioning activities in preparation of the SAFSTOR strategy with other decommissioned facilities. The licensee was using a methodical approach to identify and safely prepare the facility for SAFSTOR in accordance with its procedures and the PSDAR.

## 2 **Spent Fuel Pool Safety (60801)**

### 2.1 Inspection Scope

The inspectors conducted a review of the spent fuel pool (SFP) safety for the Fort Calhoun Station, Unit 1 reactor. Specifically, the inspectors reviewed records of SFP water level monitoring, water chemistry logs, other routine surveillances, and condition reports. In addition, the inspectors performed walk-downs of the SFP support systems and associated piping, including the SFP to component cooling water heat exchanger. These inspections were performed to ensure that the licensee was maintaining its spent fuel pool in accordance with technical specifications and other procedural requirements.

### 2.2 Observations and Findings

At the time of the inspection, the FCS reactor had 944 spent fuel assemblies stored in its SFP. Westinghouse had been contracted by the licensee to perform fuel assembly inspections and were actively visually assessing fuel assemblies during the time of the NRC inspection. The licensee had identified 528 spent fuel assemblies out of the 944 total to be visually inspected. The remaining 416 assemblies were scheduled to be both visually inspected and sipped. Fuel sipping is a process that helps to determine whether a fuel assembly has any pin-hole leaks or fissures by drawing a vacuum on the fuel assembly and using a radiation detector to determine whether measurable radioactive gases are drawn out. The fuel assemblies that were selected for sipping were those identified by the licensee from reactor cores with evidence of fuel damage. The fuel

inspections were being performed in order to characterize the status of each fuel assembly for future dry storage. At some point it is planned that all of the fuel currently stored and cooled in the FCS SFP will be moved to an independent spent fuel storage installation (ISFSI) for passive cooling, when appropriate. The NRC inspectors observed the fuel assembly visual inspection process for a few assemblies during their inspection of the conditions of SFP and supporting systems.

Water clarity in the SFP was good, radiation postings and boundaries, and foreign material exclusion boundaries were appropriately, clearly, and conservatively posted. The SFP support systems were operational at the time of the NRC inspection. There were not any overtly discernable leaks in any conduits or pipes, although condition reports indicated leakage had been a problem in some piping, as well as from the SFP to the SFP liner and drain lines. The leakage rate was approximately 2 to 5 quarts per day (total for both SFP and fuel transfer canal). All leakage was contained and had not impacted the external environment. The SFP leakage was originally planned for repair during reactor refueling outage 29; however, since entering decommissioning, the licensee has continued to actively monitor, track, and trend the leakage from the SFP. The licensee was planning to have a contractor locate and evaluate the source of the SFP and transfer canal leaks.

Technical Specifications Section 3.2, Table 3.5, Item 20 requires the SFP water level be maintained greater than or equal to 23 feet over the top of the irradiated fuel assemblies stored in the SFP. NRC inspectors reviewed several operational logs of SFP level and the level stayed relatively steady at 41 feet, which is roughly 28 feet above the top of irradiated fuel, for the monitoring periods reviewed.

NRC inspectors also reviewed the SFP boron concentration logs. The licensee's most stringent Technical Specification requirement for boron concentrations was provided in Technical Specification 2.8.3(6) as  $\geq 800$  parts per million (ppm), boron in water concentration during cask loading operations. In addition, the licensee had an administrative limit of greater than 2,160 ppm, boron in water. The NRC reviewed several months of SFP boron concentration surveillances and determined that the level remained above 2,200 ppm; therefore, the licensee was operating within its administrative limits and met its license requirements.

SFP temperatures are procedurally required to be maintained between 45 and 100 degrees Fahrenheit ( $^{\circ}\text{F}$ ). The temperatures were tracked in the control room, where alarm panel annunciators were set to alert operators if SFP temperatures exceeded  $120^{\circ}\text{F}$  or descended to  $50^{\circ}\text{F}$ . NRC inspectors reviewed the SFP temperature trends and observed that the temperatures remained relatively stable at around  $86^{\circ}\text{F}$ .

Gamma dose rates in the vicinity of the SFP were low, as indicated by the licensee's area radiation monitor which indicated 0.063 milliRoentgen per hour (mR/hr) in close proximity to the SFP. The NRC inspectors verified those levels using a Ludlum Model 2401-S survey meter (NRC #079765, calibration due on August 1, 2017). In the areas toured, the licensee had implemented radiation protection controls, including postings and labeling that were in compliance with regulatory and procedure requirements. The inspectors also observed the status of boundaries, postings, and labeling to ensure compliance with regulatory and procedural requirements.

### 2.3 Conclusion

The licensee's spent fuel pool was being maintained in accordance with technical specifications and procedural requirements. The licensee was safely storing the spent fuel assemblies contained in the spent fuel pool.

## **3 Self-Assessment, Auditing, and Corrective Actions at Permanently Shutdown Reactors (40801)**

### 3.1 Inspection Scope

The inspectors evaluated the effectiveness of licensee controls in identifying, resolving and preventing issues that degraded safety or the quality of decommissioning. These controls included audits, corrective actions, and root and apparent cause evaluations. The inspectors reviewed a sample of audit reports to evaluate compliance with the licensee's program and technical requirements. In addition, the inspectors reviewed the disposition of corrective actions to resolve deficiencies identified by audit findings for adequacy and timeliness.

### 3.2 Observations and Findings

#### a. Corrective Action Program

The Updated Safety Analysis Report (USAR) Appendix A, stated, in part, that the quality assurance program for operation of the FCS was described in the Quality Assurance Topical Report (QATR) NO-FC-10, Revision 7. The licensee's QATR, Revision 7, established the necessary measures for the licensee to control items, including services, that do not conform to specified requirements to prevent inadvertent installation or use, as well as promptly identify, control, document, classify, and correct conditions adverse to quality. Non-conformances were evaluated for impact on the operability of important-to-safety structures, systems, and components to ensure that the final condition did not adversely affect safety, operations, or maintenance of the items or services.

The QATR addressed the responsibility of qualified personnel in performing the evaluation and in determining appropriate corrective actions to preclude recurrence, and to report the results to station management. The QATR also required contractors and vendors to follow-up on corrective actions commitments within their quality programs. Reports of conditions adverse to quality were analyzed, documented, and reported in accordance with applicable procedures.

The licensee's corrective action program was contained in Procedures PI-AA-120, "Issue Identification and Screening Process," Revision 5 and PI-AA-125, "Corrective Action Program (CAP) Procedure," Revision 4. The procedures established provisions to ensure that the program provided: 1) adequate documentation and description of conditions adverse to quality and significant conditions adverse to quality; 2) appropriate analysis of the cause of these conditions and the corrective actions taken to prevent recurrence; 3) direction for review, approval, and documentation of the issue; 4) guidance for determining the significance level of the issue; 5) follow-up actions taken to verify timely and effective implementation of the corrective actions; and 6) review and periodic analysis of the corrective actions. In addition, the procedures provided guidance on the expected threshold level for initiating a condition report.

The inspectors observed two Station Ownership Committee (SOC) meetings, in which the station management reviewed the condition reports (CRs) from the previous day(s). The inspectors reviewed the membership of the SOC and determined that membership met the requirements provided in Procedure PI-AA-120, "Issue Identification and Screening Process" and a quorum was met for each meeting observed. The committee verified the significance level and any immediate actions taken for each issue documented in the condition report, as well as any impact on Operations or Technical Specifications requirements, and made assignments to evaluate and disposition each issue and provide adequate documentation of any evaluation. During the meeting, the respective CR was updated with the tasks and assignments in the computer tracking system, in preparation for review by the Management Review Committee (MRC). The inspectors observed openness and rapport within the SOC, with a goal to correctly categorize the issues under either the corrective action program (CAP) or non-CAP (NCAP) program, assign the appropriate significance level. In addition, the members ensured the CR contained sufficient detail for the issue being addressed. There was good discussion on the appropriate work group assignments and actions for each issue.

The inspectors also observed two MRC meetings during the inspection. The inspectors reviewed the designation of the MRC membership provided in Procedure PI-AA-125, and determined that the membership was met and also that a quorum was met for the meetings observed. The MRC meeting conducted on June 13, 2017, discussed CR 2017-01540, in which the weekly turbine building cooling water sample had been incorrectly analyzed for molybdate, as a result of the licensee using the incorrect chemical formula. During both MRC meetings, the inspectors observed a good, collegial questioning attitude by the committee members. Based on the questions generated, the MRC returned a few CRs to the SOC for additional information. For example, the MRC asked that further details on the extent of condition be included in the work group evaluation report for CR 2017-01540, above, and it was returned to the SOC for assignment and tracking.

The inspectors reviewed approximately 30 CR summaries and 3 entire CR packages, which had been generated during the past year and involved a wide-range of issues. Based on the CRs reviewed, the documentation identified appropriate classification and significance level for each issue identified. Finally, the inspectors had several conversations with licensee personnel, including design engineers, operations, and quality assurance personnel, and the inspectors concluded that licensee personnel were aware of the corrective action process, recognized when and how to enter into the process, understood the types of disposition that could result from a CR, and were not hesitant in submitting a CR when an issue was identified.

b. Audits and Self-Assessments

The QATR established the necessary measures to implement audits to verify activities that were covered by the QATR were performed in conformance with documented requirements. The audit program was reviewed for effectiveness as part of the overall audit process. The OPPD QATR, Appendix B, provided the periodic interval for internal and external audits. Internal audits were expected to be performed with a frequency commensurate with safety significance and in such a manner as to ensure that an audit of all applicable quality assurance program elements was completed for each functional area within a period of 24-months, except for the Emergency Plan and implementing procedures, which was on a 12-month frequency.

The inspectors reviewed a sample of internal audits to evaluate the implementation of the licensee's audit program and that it followed the criteria in the QATR. Specifically, the inspectors verified that the licensee had prepared and approved plans that identified the audit scope, specified the focus elements, identified the auditors, and applicable criteria before the initiation of the audit activity. In addition, the inspectors verified that any identified findings were captured in the corrective action program, with the appropriate management review and proper documentation. The inspectors reviewed the following audits.

- Maintenance Audit NOSA-FCS-16-01 (AR 35115) dated March 9, 2016
- Engineering Programs Audit NOSA-FCS-16-05 (AR 65117) dated May 11, 2016
- Corrective Action Program Audit NOSA-FCS-17-04 (AR 66644) dated May 9, 2017

The inspectors reviewed a sample of the training and qualification records of the OPPD auditors and lead auditors and confirmed that the individuals had completed all required training and maintained qualification and certification in accordance with the OPPD QATR and licensee's procedures. OPPD Nuclear Oversight reported to OPPD Corporate under Vice President, Energy Production & Marketing, and therefore the inspectors concluded the organization was independent from the decommissioning facility management and isolated from plant scheduling influences.

### 3.3 Conclusions

The licensee was implementing its corrective action program in accordance with the appropriate regulatory requirements as prescribed by the OPPD QATR. Responsible personnel were knowledgeable of the program and the status of the condition reports and established measures to monitor the completion of the assigned actions.

The licensee's auditing and decommissioning safety review programs were being conducted and maintained in accordance with the appropriate regulatory requirements as prescribed by the OPPD QATR. The licensee had established audit, reviews, and oversight programs to ensure that activities were being conducted in accordance with the applicable regulatory function in a timely, independent, and appropriate manner.

## **4 Safety Reviews, Design Changes, and Modifications at Permanently Shutdown Reactors (37801)**

### 4.1 Inspection Scope

The inspectors reviewed the licensee's safety review processes, procedures, and training to verify that the safety review program was effective at contributing to the protection of public health and safety and the environment.

### 4.2 Observations and Findings

The licensee's QATR included design control provisions to control inputs, processes, outputs, changes, interfaces, records, and organizational interfaces of the licensee's design. The design control provisions included requirements for verifying the acceptability of design activities and documents, consistent with its effects on safety for structures, systems, and components that have important-to-safety functions. The inspectors reviewed the licensee's 10 CFR 50.54(a)(3) change to the QATR dated

May 1, 2017, which removed the requirement to comply with ANSI N18.7-1976, and as such removed the function of the Nuclear Safety Review Board as the independent overview body during plant operations, and replaced it with the Decommissioning Oversight Committee, which functions with an independent overview of selected decommissioning activities. The inspectors, in concert with HQs Quality Assurance Vendor Inspection Branch, determined that the bases of the change were applicable to the licensee's facility and did not reduce any commitments to the program.

The regulation under 10 CFR 50.59(c)(1) states in part, that a licensee may make changes in the facility as described in the USAR, make changes in the procedures as described in the USAR, and conduct tests or experiments not described in the USAR without obtaining a license amendment pursuant to 10 CFR 50.90 in certain situations. The inspectors reviewed the licensee's 10 CFR 50.59 safety evaluation program, as implemented by Procedure LS-AA-104, "Exelon 50.59 Review Process," Revision 10 and LS-FC-104-1000, "50.59 Resource Manual," Revision 0. The inspectors compared these procedures with the NRC-endorsed acceptable method for complying with the provisions of 10 CFR 50.59, which is the Nuclear Energy Institute's NEI 96-07, "Guidelines of 10 CFR 50.59 Implementation," Revision 1, dated November 2000. The licensee's "50.59 Resource Manual" was based on, and incorporated in its entirety, the implementation guidance provided in NEI 96-07, Revision 1.

The inspectors observed a Plant Onsite Review Committee (PORC) meeting held on June 13, 2017. The PORC meeting was held to discuss license Amendment Request 17-04, regarding modification of License Condition 3.C. The inspectors observed that the meeting was conducted in accordance with Procedure LS-FC-100, "Plant Operations Review Committee," Revision 0, and noted there was good questioning attitude by the PORC members during the discussion of the proposed license amendment request. The inspectors also determined that the committee members were properly trained and the committee was properly staffed to conduct meetings.

The inspectors reviewed several screenings and evaluations for engineering change packages performed pursuant to 10 CFR 50.59, and verified that the screenings and evaluations were performed in accordance with licensee's procedure and regulatory requirements. The inspectors reviewed the following design change packages, which met regulatory requirements.

- EC 68836, FLEX-Stand Pipe Distribution Connections, Revision 0 (Screening 16-075)
- EC 68982, Decommissioning USAR Updates Ch 1, 2, 3, and 14 (Screening)
- EC 69005, Implementation of Activities Required for Disposition of NFPA 805 LAR Table S-2 Modifications, Revision 0 (Screening 16-083)
- EC 69051, Removal of secondary systems for decommissioning (Evaluation 17-006)
- EC 69019, Fuel Handling Accident Re-analysis for Decommissioning (Screening)

The inspectors reviewed the licensee's training Procedure LS-AA-104-1006, "Exelon 50.59 Training and Qualification," Revision 4, which implemented the training for screeners and evaluators at the facility. The inspectors reviewed the training records for selected screeners and evaluators and determined that they met the qualifications required by the procedure.

#### 4.3 Conclusions

The licensee's safety review processes, procedures, and training programs were being conducted and maintained in accordance with the appropriate regulatory requirements as prescribed by the OPPD QATR. The licensee had established 10 CFR 50.59 program to ensure that activities were being conducted in accordance with the applicable regulatory requirements, license conditions, and QATR procedures. The licensee's management, safety review, and other oversight committees were being conducted and maintained in accordance with appropriate regulatory requirements as prescribed by the OPPD QATR.

### **5 Organization, Management, and Cost Controls (36801)**

#### 5.1 Inspection Scope

The inspectors reviewed the licensee's management organization to ensure it reflected regulatory requirements, and the implementation of an employee concerns program.

#### 5.2 Observations and Findings

The overall organizational structure at FCS was described in Section 5.0 of the USAR, as well as Chapter 1 of the QATR. The inspectors verified that the licensee maintained an overall organizational structure to support decommissioning activities. The licensee continued to manage and implement several oversight and review committees that established and maintained effective oversight of decommissioning activities.

The inspectors attended the licensee's management team Plan of the Day (POD) meetings in which the work week's major and significant risk activities were discussed, as well as the status of other reviews and activities being conducted at the facility. In addition, the inspectors observed the POD meeting, which was focused on the specific work activities for the respective day and week. The inspectors observed attention to detail, knowledge of the activities, and high level of attention to safety being discussed during both meetings.

The plant organization was performing activities in support of the transition to SAFSTOR, performing asbestos abatement when personnel were available, and supporting other plant outages within the OPPD power generation system. Due to the reduction in personnel at the site, schedule of work activities to support the transition to SAFSTOR, and implementing the routine maintenance activities, the inspectors observed that the licensee was closely reviewing the schedules, work activities and hours of work. In addition, the inspectors observed a significant emphasis on safety, which was evidenced during the facility tours, meetings, and briefings. This is especially important as the licensee is transitioning the facility to SAFSTOR, and reducing loads and changing conditions within the facility.

The inspectors reviewed the licensee's employee concerns program, which is provided in Procedure EI-FC-101, and the safety conscious work environment provided in Policy EI-FC-1, Revision 1. These documents addressed the continuing operation of a safety conscious work environment at FCS, in which workers felt free to raise concerns to either the licensee or the NRC without fear of reprisal. The employee concerns procedure established a program for maintaining anonymity, established timeliness goals for processing concerns, and had a provision for feedback to the concerned individual. In addition, the procedure addressed the process for difference of professional opinion. The inspectors reviewed the types of concerns submitted to the program over the past year. The inspectors concluded that the investigator was knowledgeable of the types of concerns raised at the facility and was involved in reaching out to individuals from the different line organizations to ensure concerns were addressed. The inspectors observed that posters and brochures regarding the employee concerns program were prominently displayed across the site.

### 5.3 Conclusions

The licensee maintained an overall organizational structure to support decommissioning activities. The licensee continued to implement an employee concerns program in which individuals could raise concerns without fear of retaliation.

## **6 Maintenance Rule (62706)**

### 6.1 Inspection Scope

The inspectors evaluated the licensee's implementation of its maintenance oversight and maintenance rule programs.

### 6.2 Observations and Findings

The licensee submitted the certifications specified in 10 CFR 50.82(a)(1) to the NRC to support the licensee's permanent cessation of power operations. As such, the regulations under 10 CFR 50.65(a)(1) require in part, that licensees must monitor the performance or condition of all structures, systems, and components (SSCs) associated with storing, controlling, and maintaining spent fuel in a safe condition in a manner sufficient to provide reasonable assurance that such SSCs are capable of performing their intended functions. The licensee was implementing the maintenance rule under 10 CFR 50.65 as required and adequately evaluated the maintenance monitoring during decommissioning. The licensee identified 32 functions and 17 SSCs that were scoped into the FCS maintenance rule program since cessation of power operations.

The licensee had identified those SSCs associated with the storage, control, and maintenance of spent fuel in a safe condition, as well as those SSCs relied upon to remain functional during or following design basis events associated with spent fuel storage, as defined in 10 CFR 50.65. The licensee maintained a maintenance rule functional record for each SSC identified. The NRC inspectors concluded that the licensee had appropriately identified its SSCs under their maintenance rule program and was monitoring them sufficiently.

The regulations under 10 CFR 50.65, requires in part, that the performance and condition monitoring activities and associated goals and preventive maintenance

activities shall be evaluated by the licensee at least every 24 months. The NRC inspectors reviewed the licensee's 10 CFR 50.65(a)(3) Periodic Evaluation report performed for the assessment period April 1, 2014 through April 1, 2016. The assessment report presented a thorough evaluation of the Maintenance Rule program. However, during the previous assessment period FCS was fully operational and the decision had not yet been made to cease power operations. During the last assessment period, there were 71 functions within scope of the Maintenance Rule, representing 28 SSCs. Currently, the licensee was monitoring 32 functions, representing 17 SSCs that were geared towards maintaining spent fuel safety.

The FCS Maintenance Rule Expert Panel had met five times since the beginning of the calendar year. The panel met on January 11<sup>th</sup>, April 20<sup>th</sup>, April 27<sup>th</sup>, May 18<sup>th</sup>, and June 15<sup>th</sup> of 2017. Those meetings took place primarily to make changes to monitoring criteria or to move tracked functional items from (a)(1) to (a)(2) status or the converse, from (a)(2) to (a)(1) status. In this context, reference to (a)(1) status denotes functions that are in-scope of the Maintenance Rule and have been determined to have unacceptable performance and (a)(2) status denotes functions that are in-scope of the Maintenance Rule and have been determined to have acceptable performance.

The NRC inspectors observed an Expert Panel Meeting conducted during this inspection. The meeting involved moving a Raw Water direct cooling supply header from (a)(2) status to the more closely watched (a)(1) category. A quarterly exam of sedimentation in the Raw Water supply header detected a void (air pocket) in the header pipe. The void in the header resulted in the loss of a Maintenance Rule function: Raw Water Cooling to provide direct cooling for shutdown cooling heat exchangers and control room high volume air conditioning. The Expert Panel agreed unanimously to move this item from (a)(2) status, which required only routine preventative maintenance, to (a)(1) status, where its function will be monitored more closely.

Based on the frequency and quality of FCS's Expert Panel meetings, procedures reviewed, and interviews with licensee personnel, the NRC inspectors concluded the Maintenance Rule at FCS was being properly managed and that appropriate functions and SSCs had been selected for the site's current defueled status.

### 6.3 Conclusions

The licensee appropriately implemented the maintenance rule to ensure compliance with the requirements of 10 CFR 50.65 for structures, systems, and components associated with the storage, control, and maintenance of spent fuel.

## 7 **Exit Meeting Summary**

On June 16, 2017, the NRC inspectors presented the preliminary inspection results to Ms. Mary J. Fisher, Senior Director for Decommissioning, and other members of the licensee's staff. The inspectors presented the final inspection results to members of your staff on August 3, 2017. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified with the exception of certain Exelon procedures, which were marked as proprietary and were being converted to FCS decommissioning procedures.

## **SUPPLEMENTAL INSPECTION INFORMATION**

### **KEY POINTS OF CONTACT**

#### **Licensee Personnel**

T.Uehling, Decommissioning Plant Manager  
D.Whisler, Radiation Protection Manager  
J.McBride, Nuclear Oversight  
A.Hansen, Principal Regulatory Specialist  
C.Cameron, Principal Regulatory Specialist  
W.Phillips, Supervisor, Nuclear Engineering  
K.Wells, Nuclear Engineering  
J.Cate, Manager, Engineering Design & Programs  
B.Cotarelo, Lead Work Control  
D.Trausch, Services and Support  
S.Arora, Supervisor, Nuclear Engineering  
A.Meusch, Nuclear Engineering  
J.Shuck, Manager, System Engineering  
T.Herman, Nuclear Oversight

### **INSPECTION PROCEDURES USED**

IP 71801 Decommissioning Performance and Status Review at Permanently Shutdown Reactors  
IP 60801 Spent Fuel Pool Safety at Permanently Shutdown Reactors  
IP 40801 Self-Assessment, Auditing, and Corrective Action at Permanently Shutdown Reactors  
IP 37801 Safety Reviews, Design Changes, and Modifications at Permanently Shutdown Reactors  
IP 36801 Organization, Management and Cost Controls  
IP 62706 Maintenance Rule

### **LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

#### **Opened/Closed**

None

#### **Discussed**

None

## LIST OF ACRONYMS

ADAMS	Agencywide Documents Access and Management System
CFR	<i>Code of Federal Regulations</i>
CR	Condition Report
FCS	Fort Calhoun Station
MRC	Management Review Committee
NRC	Nuclear Regulatory Commission
OPPD	Omaha Public Power District
POD	Plant of the Day
PORC	Plant Onsite Review Committee
PSDAR	Post-Shutdown Decommissioning Activities Report
QATR	Quality Assurance Topical Report
SFP	Spent Fuel Pool
SOC	Station Ownership Committee
TS	Technical Specifications
USAR	Updated Safety Analysis Report

FORT CALHOUN STATION – NRC INSPECTION REPORT 05000285/2017-009 - DATED AUGUST 4, 2017

DISTRIBUTION

Regional Administrator (Kriss.Kennedy@nrc.gov)  
 Acting Regional Administrator (Scott.Morris@nrc.gov)  
 Acting Deputy Regional Administrator (John.Monninger@nrc.gov)  
 DNMS Director (Mark.Shaffer@nrc.gov)  
 DNMS Deputy Director (Linda.Howell@nrc.gov)  
 Branch Chief, DNMS/FCDB (Ray.Kellar@nrc.gov)  
 Senior Health Physicist, FCDB (Rachel.Browder@nrc.gov)  
 Health Physicist, FCDB (Eric.Simpson@nrc.gov)  
 Senior Health Physicist, FCDB (Robert.Evans@nrc.gov)  
 Health Physicist, FCDB (Stephanie.Anderson@nrc.gov)  
 RIV Public Affairs Officer (Victor.Dricks@nrc.gov)  
 Branch Chief, NMSS/DUWP/RDB (Bruce.Watson@nrc.gov)  
 NMSS/DUWP/RDB Project Manager (Jack.Parrott@nrc.gov)  
 NRR/Project Manager (James.Kim@nrc.gov)  
 RIV RITS Coordinator (Marisa.Herrera@nrc.gov)  
 Congressional Affairs Officer (Jenny.Weil@nrc.gov)  
 RIV Congressional Affairs Officer (Angel.Moreno@nrc.gov)  
 RIV/ETA: OEDO (Jeremy.Bowen@nrc.gov)  
 RIV RSLO (Bill.Maier@nrc.gov)

ADAMS ACCESSION NUMBER: ML17191A277

<input checked="" type="checkbox"/> SUNSI Review By: RSB	ADAMS: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Sensitive <input checked="" type="checkbox"/> Non-Sensitive	<input type="checkbox"/> Non-Publicly Available <input checked="" type="checkbox"/> Publicly Available	Keyword NRC-002
OFFICE	DNMS/FCDB	DNMS/FCDB	C:FCDB	
NAME	RSBrowder	EJSimpson	RLKellar	
SIGNATURE	/RA/	/RA/	/RA/	
DATE	8/2/17	8/4/17	8/4/17	

OFFICIAL RECORD COPY