



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
2100 RENAISSANCE BLVD.
KING OF PRUSSIA, PA 19406-2713

November 20, 2019

Terry Hobbs
Decommissioning General Manager
Duke Energy Florida, LLC
Crystal River Unit 3
15760 W. Power Line Road
Crystal River, FL 34428-6708

SUBJECT: NRC INSPECTION REPORT NO. 05000302/2019002 AND INDEPENDENT
SPENT FUEL STORAGE INSTALLATION INSPECTION REPORT NO.
07201035/2019002, DUKE ENERGY FLORIDA, LLC, CRYSTAL RIVER UNIT 3,
CRYSTAL RIVER, FLORIDA

Dear Mr. Hobbs:

On November 4 - 7, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an on-site inspection under Inspection Manual Chapter 2561, "Decommissioning Power Reactor Inspection Program," at the permanently shut down Crystal River Nuclear Plant Unit 3 (CR-3) and under Inspection Manual Chapter 2690, "Inspection Program for Dry Storage of Spent Reactor Fuel at Independent Spent Fuel Storage Installations and for 10 CFR Part 71 Transportation Packages." The inspector examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and the conditions of your license. The inspection consisted of observations by the inspector, interviews with personnel, and a review of procedures and records. The results of the inspection were discussed with you and other members of the CR-3 staff on November 7th, 2019 and are described in the enclosed report. No findings of safety significance were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure(s), and your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC document system (ADAMS), accessible from the NRC website at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

Current NRC regulations and guidance are included on the NRC's website at www.nrc.gov; select Radioactive Waste; Decommissioning of Nuclear Facilities; then Regulations, Guidance and Communications. The current Enforcement Policy is included on the NRC's website at www.nrc.gov; select About NRC, Organizations & Functions; Office of Enforcement; Enforcement documents; then Enforcement Policy (Under 'Related Information'). You may also obtain these documents by contacting the Government Printing Office (GPO) toll-free at 1-866-512-1800. The GPO is open from 8:00 a.m. to 5:30 p.m. EST, Monday through Friday (except Federal holidays).

T. Hobbs

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No reply to this letter is required. Please contact Katherine Warner at 610-337-5389 if you have any questions regarding this matter.

Sincerely,

/RA/

Anthony Dimitriadis, Chief
Decommissioning, ISFSI, and Reactor HP
Branch
Division of Nuclear Materials Safety

Docket No. 05000302 and 07201035
License No. DPR-72

Enclosure: Inspection Report 05000302/2019002 and
07201035/2019002 w/Attachment

cc w/encl: Distribution via ListServ

T. Hobbs

2

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U.S. NUCLEAR REGULATORY COMMISSION
REGION I

INSPECTION REPORT

Inspection Nos. 05000302/2019002 and 07201035/2019001
Docket Nos. 05000302 and 07201035
License No. DPR-72
Licensee: Duke Energy Florida, LLC (Duke Energy)
Facility: Crystal River Unit 3 (CR-3)
Location: Crystal River, FL 34428-6708
Inspection Dates: November 4 – 7, 2019
Inspector: Katherine Warner, Health Physicist
Decommissioning, ISFSI, and Reactor HP Branch
Division of Nuclear Materials Safety, Region 1
Approved By: Anthony Dimitriadis, Chief
Decommissioning, ISFSI, and Reactor HP Branch
Division of Nuclear Materials Safety, Region I

EXECUTIVE SUMMARY

Duke Energy
Crystal River Nuclear Plant
NRC Inspection Report Nos. 05000302/2019002 and 07201035/2019001

An announced CR-3 decommissioning on-site inspection was performed November 4 - 7, 2019. The inspection included a review of organization and management, design changes and modifications, corrective action program, effluent and environmental monitoring, decommissioning status, and radioactive waste management. The inspection consisted of observations by the inspector, including an emergency preparedness drill, interviews with site personnel, a review of procedures and records, and plant walk-downs. The NRC's program for overseeing the safe operation of a shut-down nuclear power reactor is described in Inspection Manual Chapter (IMC) 2561, "Decommissioning Power Reactor Inspection Program" and the program for overseeing independent spent fuel storage installations (ISFSIs) is described in IMC 2690, "Inspection Program for Dry Storage of Spent Reactor Fuel at Independent Spent Fuel Storage Installations and for 10 CFR Part 71 Transportation Packages."

Based on the results of this inspection, no findings of safety significance were identified.

REPORT DETAILS

1.0 Background

On February 20, 2013, Duke Energy sent a letter [Agency Documentation and Management System Accession Number ML13056A005] to the NRC certifying the permanent cessation of activities and certifying that the fuel had been permanently removed from the reactor. This met the requirements of 10 Code of Federal Regulations (CFR) 50.82(a)(1)(i) and 50.82(a)(1)(ii). CR-3 is currently in the SAFSTOR phase of decommissioning as described in IMC 2561. On June 14, the NRC received and is considering approval of a license transfer application [ML19170A209] and conforming amendment filed by the Duke Energy Florida (DEF), LLC on behalf of itself and Accelerated Decommissioning Partners (ADP) CR3, LLC. The application seeks NRC approval of the direct transfer of Facility Operating License No. DPR-72 for CR-3 and the general license for the CR-3 ISFSI from the current holder, DEF to ADP CR3, which is a wholly owned subsidiary of ADP, LLC.

2.0 SAFSTOR Performance and Status Review and Emergency Preparedness Drill

- a. Inspection Scope [Inspection Procedures (IPs) 36801, 37801, 40801, 60855, 71801, 83750, 84750, and 86750]

The inspector conducted document reviews and interviews with plant personnel to determine if Duke Energy procedures and processes conform with the regulations and guidance associated with 10 CFR 50.59 and changes made by Duke Energy under 10 CFR 50.59 did not require prior NRC approval. The inspector reviewed the qualification and training for 10 CFR 50.59 evaluators, directions for performing reviews of proposed changes, and evaluation performed regarding changes to the fire protection program, the removal of certain radiation monitors, and changes to the site electrical and sump systems.

The inspector conducted document reviews, attended safety meetings, and interviewed plant personnel to verify regulatory requirements were properly implemented with respect to the site organization, staffing and qualifications, fire protection, and employee training programs. The inspector reviewed procedures and processes to evaluate Duke Energy's ability to resolve employee safety concerns, disseminate safety information and effectively resolve identified problems. The inspector reviewed Duke Energy's decommissioning activities to determine if they were performed in a manner consistent with the Post Shutdown Decommissioning Activities Report (PSDAR).

The inspector reviewed documents and interviewed CR-3 personnel to verify Duke Energy management performed audits and self-assessments, and ensured issues were identified and corrected in accordance with the site's corrective action program (CAP). The inspector reviewed a representative selection of CAP documents to determine if a sufficiently low threshold for problem identification existed, follow-up evaluations were of sufficient quality, and Duke Energy assigned timely and appropriate prioritization for issue resolution commensurate with the significance of the issue. The inspector

reviewed the site audits for the past year to verify audits were thorough and corrective actions were initiated if necessary.

The inspector reviewed activities and documentation associated with effluent and environmental monitoring to determine if the licensee effectively controlled, monitored, and quantified releases of radioactive materials in liquid, gaseous, and particulate forms to the environment. The inspector reviewed the annual radiological environmental monitoring program (REMP) report, the annual radioactive effluent report, and the Off-Site Dose Calculation Manual (ODCM).

The inspector performed a walk-down of the radioactive waste storage locations and reviewed waste inventory to evaluate if CR-3 properly classified and stored radioactive materials. The inspector also reviewed work packages for selected recent shipments of radioactive waste. The review included records of shipment packaging, surveying, labeling, marking, placarding, vehicle checks, and emergency instructions to ensure compliance with the applicable NRC and Department of Transportation regulations.

The inspector observed an emergency preparedness drill, including a pre-drill briefing and post-drill critiques. The inspector evaluated the adequacy of the licensee's conduct of an emergency preparedness drill and its capability to assess performance.

b. Observations and Findings

The inspector determined that 10 CFR 50.59 screenings and evaluations had been properly performed and that Duke Energy had trained and qualified individuals to perform the evaluations. The inspector determined that changes under 10 CFR 50.59 did not require prior NRC approval and safety reviews were performed for design changes and modifications in accordance with applicable regulatory requirements, license conditions and the Decommissioning Safety Analysis Report. The inspector noted that the licensee had made several changes via the 50.59 process to transition to "SAFSTOR II" or a "cold and dark" state. These changes included modifications to the ventilation, electrical, fire protection, and water management systems. The inspector notes that these changes, while appropriate for the current SAFSTOR state, will need to be reexamined prior to any active decommissioning activities.

The inspector verified that management oversight was adequate for the SAFSTOR phase of decommissioning. While staffing levels have been reduced since the last inspection, the inspector noted that the new CR-3 SAFSTOR II organization has the appropriate personnel to perform the necessary functions in the site's current state. The inspector determined that training programs were being appropriately implemented, and safety issues were reported to management and the site held monthly safety meetings and weekly safety implementation meetings. The inspector noted that site decommissioning activities were in accordance with the PSDAR.

The inspector determined that issues were being identified and entered into the CAP in a timely manner and the issues were effectively screened, prioritized and evaluated commensurate with their safety significance. The inspector verified audits were being

performed by qualified individuals independent of the organization being audited and that management reviewed the audits and associated corrective actions.

The inspector verified that effluent releases to the environment had been properly controlled, monitored, and quantified as required by NRC regulations. The inspector verified that the annual radiological effluent and the annual REMP reports demonstrated that calculated doses were below regulatory dose criteria of 10 CFR 50, Appendix I. The inspector noted that the substantial changes to the ODCM were in accordance with the recent changes to the facility via the 10 CFR 50.59 process described above. The inspector noted that the ODCM changes appeared appropriate for the “cold and dark” status of the Part 50 facility.

The inspector verified solid radioactive waste was adequately stored, monitored, and inventories were up to date. The inspector verified that radioactive waste shipping documentation was properly completed, and Duke Energy personnel were knowledgeable of their duties and responsibilities as required. The inspector determined radioactive waste shipped for disposal at land disposal facilities was properly classified, described, packaged, marked, and labeled and was in proper condition for transportation.

The inspector determined the ISFSI-only emergency drill appropriately tested the participants’ ability to respond to an emergency. The inspector noted that the corrective actions resulting from this drill will be reviewed during the next ISFSI program inspection.

4.0 Exit Meeting Summary

On, November 7, 2019, the inspector presented the inspection results to Mr. Terry Hobbs, Decommissioning General Manager, and the rest of the CR-3 staff. The inspector verified that no proprietary information was retained by the inspector or documented in this report.

ATTACHMENT

PARTIAL LIST OF PERSONS CONTACTED

T. Hobbs, Decommissioning General Manager
B. Akins, Manager, Radiation Protection and Chemistry
P. Dixon, Manager, Technical Support
I. Wilson, Manager Operations and Maintenance
D. Bartlett, Radiation Protection Technician
C. Burtoff, Lead Scientist
A. Doroff, Supervisor Nuclear Shift Operations
J. Endsley, Lead Engineer
M. Garrison, Nuclear ISFSI Coordinator
J. Lane, Lead Engineer
R. Macko, Senior Scientist
C. Miller, Lead Engineer
M. Van Sicklen, Licensing

ITEMS OPEN, CLOSED, AND DISCUSSED

None

PARTIAL LIST OF DOCUMENTS REVIEWED

Audits and Reports

2018-CR3-EMP-PR-01, Nuclear Oversight – Audit Crystal River 3 Emergency Preparedness
2018-CR3-EMP-PR-01, Nuclear Oversight – Performance Review Crystal River 3 Emergency Preparedness
2018-CR3-SEC/RP-01, Nuclear Oversight – Audit Crystal River 3 Physical Security and Radiological QA Programs
Crystal River Unit 3 - 2018 Annual Radiological Environmental Operating Report
Crystal River Unit 3 - 2018 Annual Radioactive Effluent Release Report

Condition Reports

02240563	02272823
02242057	02283707
02260196	02287612
02268593	

Miscellaneous

10 CFR 50.59 Evaluations 02270443, 02212624
Basic Cause Evaluation 02242057
Waste Inventory as of June 26, 2019
Engineering Changes 000407262, 0000407270, 0000407371, 0000407372
Fire Protection Plan, Revision 36
Independent Spent Fuel Storage Installation (ISFSI) Only Emergency Plan (IOEP), Revision 1
IOEP ERO Integrated Training Drill, November 6, 2019

Attachment (Cont'd)

Work Order Backlog as of November, 2019
Waste Manifests 18-018, 18-013, 2018-04-017

Procedures

AI-4001, Conduct of Drills and Exercises Supporting the ISFSI Only Emergency Plan, Revision 10
EM-504, Conduct of the Radiation Protection Coordinator, Revision 3
ISFS-190, ISFSI Off-Normal Events, Revision 5

LIST OF ACRONYMS USED

ADP	Accelerated Decommissioning Partners
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CR-3	Crystal River Unit 3
Duke Energy/DEF	Duke Energy Florida, Inc.
IMC	Inspection Manual Chapter
IP	Inspection Procedure
ISFSI	Independent Spent Fuel Storage Installation
NRC	U.S. Nuclear Regulatory Commission
PSDAR	Post Shutdown Activities Report