



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

May 14, 2018

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. 05000302/2018001, DUKE ENERGY
FLORIDA, LLC, CRYSTAL RIVER UNIT 3, CRYSTAL RIVER, FLORIDA

Dear Mr. Hobbs:

On April 23-26, 2018, 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). The inspectors 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 inspectors, 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 April 26, 2018, 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 Steve Hammann, at 610-337-5399, if you have any questions regarding this matter.

Sincerely,

/RA MRoberts for/

Raymond J. Powell, Chief
Decommissioning, ISFSI, and Reactor HP
Branch
Division of Nuclear Materials Safety

Docket No. 05000302
License No. DPR-72

Enclosure: Inspection Report 05000302/2018001
w/Attachment

cc w/encl: Distribution via ListServ

T. Hobbs

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U.S. NUCLEAR REGULATORY COMMISSION
REGION I

INSPECTION REPORT

Inspection No. 05000302/2018001
Docket No. 05000302
License No. DPR-72
Licensee: Duke Energy Florida, LLC (Duke Energy)
Facility: Crystal River Unit 3 (CR-3)
Location: 15760 W. Power Line Road
Crystal River, FL 34428-6708
Inspection Dates: April 23-26, 2018
Inspector: Stephen Hammann, Senior Health Physicist
Decommissioning, ISFSI, and Reactor HP Branch
Division of Nuclear Materials Safety, Region I
Katherine Warner, Health Physicist
Decommissioning, ISFSI, and Reactor HP Branch
Division of Nuclear Materials Safety, Region 1
Approved By: Raymond Powell, 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 No. 05000302/2018001

An announced CR-3 decommissioning on-site inspection was performed April 23-26, 2018. The inspection included a review of occupational exposure, radioactive waste management, and decommissioning status. The inspection consisted of observations by the inspectors, interviews with Duke Energy 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."

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 (ADAMS) 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.

2.0 SAFSTOR Performance and Status Review

a. Inspection Scope [Inspection Procedures (IPs) 83750, 86750, 71801]

The inspectors observed activities and reviewed documentation associated with occupational exposure and radioactive waste management to determine the effectiveness of site radiological programs. The inspectors accompanied a CR-3 radiation protection (RP) technician during a plant walk-down that included: general area surveys, checking and verifying radiological postings, checking locked doors and gates, and general housekeeping. The inspectors toured the instrument calibration lab, instrument counting room, and chemistry lab. The inspectors also observed equipment preparations and dry runs for moving greater than Class C waste from the spent fuel pool to a waste storage container. The inspectors reviewed 2017 dose totals, radiation work permits, and As Low As Reasonably Achievable (ALARA) work plans to verify radiation work activities were pre-planned effectively to limit worker exposure. The inspectors performed a walk-down of the radioactive waste storage locations and reviewed waste inventory to ensure CR-3 properly classifies and stores radioactive materials. The inspectors also reviewed the work package for the most recent shipment 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 inspectors reviewed the status of activities related to the site decommissioning to verify activities are in accordance with licensed requirements. The inspectors interviewed staff regarding plans for placing the site in long term dormancy. The inspectors reviewed the decommissioning schedule to verify the schedule is consistent with the post shutdown decommissioning activities report (PSDAR).

b. Observations and Findings

The inspectors determined that pre-job briefings were thorough and identified the significant potential hazards for the activities to be performed. The inspectors determined that survey records were clear and complete, and RP technicians used appropriate instruments for the surveys. The inspectors noted most routine surveys, instrument calibrations, and daily source checks of instruments are performed on back shift. The inspectors verified technician training and qualifications were up to date. The inspectors verified that ALARA plans were performed as needed and were effective in limiting worker exposure and that occupational dose for 2017 was acceptable for the scope of the radiological activities performed. The inspectors verified solid radioactive waste was adequately stored, monitored, and inventories were up to date. The inspectors verified that radioactive waste shipping paperwork was properly completed and Duke Energy personnel were knowledgeable of their duties and responsibilities. The inspectors 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 inspectors noted the main decommissioning activities are the spent fuel pool clean-out project and plant modifications preparing the site for dormancy. The inspectors verified the activities and schedule are consistent with license requirements and the site PSDAR.

3.0 Exit Meeting Summary

On, April 26, 2018, the inspectors presented the inspection results to Terry Hobbs, Decommissioning General Manager, and other members of Duke Energy's staff. The inspectors confirmed that proprietary information was not removed from the site.

PARTIAL LIST OF PERSONS CONTACTED

B. Akins, Manager - Radiation Protection and Chemistry
P. Dixon, Manager - Technical Support
J. Endsley, Engineering
T. Hobbs, Decommissioning General Manager
J. Lane, Engineering
R. Macko, Senior Scientist
C. Miller, Engineering
P. Rose, Licensing
K. Shelton, RP Supervisor
D. Sumner, RP Technician
M. Van Sicklen, Licensing
P. White, RP Technician
K. Williams, Engineering

ITEMS OPEN, CLOSED, AND DISCUSSED

None

LIST OF DOCUMENTS REVIEWED

Audits and Reports

2018-CR3-SEC/RP-01, Nuclear Oversight – Audit, Crystal River Physical Security and Radiological QA Programs

Miscellaneous

ALARA Work Plan, Rev. 0
Crystal River Fuel Pool Project Results Report, prepared by WMG, October 2016
Crystal River Unit 3 SAFSTOR II Spent Fuel Pool Clean Out Schedule, 4/19/18
Dose Exposure - 2017
Duke Energy Letter to NRC, Crystal River Unit 3 - Technical Specifications Bases Control Program – 2018, dated March 14, 2018
Process Control Program, Rev. 8
RWP 2222, Rev. 01
Summary List of Non-Fuel Items of Known or Potential Significant Dose, 1/29/18
TPP-212A, Rev. 0, Health Physics, Chemistry, Nuclear Waste Systems (Radwaste) Technician Training Programs
Waste Inventory - 3/21/18

Procedures

CR3M-PM-0002, Rev. 2, CR3 Radiation Protection Manual
CS-FP-PR-008, Rev. 1, 3-60B Shipping Cask Wet Loading (Energy Solutions)
CS-FP-PR-010, Rev. 1, Preparation of Loaded 3-60B Shipping Cask for Transportation (Energy Solutions)
FP-OP-012, Rev. 13, Operation of the Advanced Crusher-Shear (Energy Solutions)
FP-OP-013, Rev. 6, Dose Profiling of Irradiated Hardware (Energy Solutions)
FP-OP-023, Rev. 10, Operation of the Shielded Transfer Bell and the Dewatering of Filter HICs for Fuel Pool Projects (Energy Solutions)
HPS-0005, Rev. Calibration of Portable Radiation/Contamination Survey Instruments
TR-TP-002, Rev. 25, Pre-Shipment Leak Test for Model 8-120B Cask (Energy Solutions)
TR-OP-035, Rev. 28, Handling Procedure for Transport Cask Model 8-120B (Energy Solutions)

Work Orders

WO 20229653, Spent Fuel Pool Clean Out Project

LIST OF ACRONYMS USED

ADAMS	Agency Documentation and Management System
ALARA	As Low As Reasonably Achievable
CFR	Code of Federal Regulations
CR-3	Crystal River Unit 3
Duke Energy	Duke Energy Florida, Inc.
IMC	Inspection Manual Chapter
IP	Inspection Procedure
NRC	U.S. Nuclear Regulatory Commission
PSDAR	Post Shutdown Activities Report
RP	Radiation Protection