



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

November 9, 2021

Mr. Billy Reid
Site Vice President
ADP CR3, LLC
2760 South Falkenburg Rd.
Riverview FL, 33578

SUBJECT: ACCELERATED DECOMMISSIONING PARTNERS (ADP) CR3, LLC, CRYSTAL RIVER UNIT 3 - NRC INSPECTION REPORT NOS. 05000302/2021003 AND 07201035/2021001

Dear Mr. Reid:

On September 30, 2021, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection under Inspection Manual Chapter 2561, "Decommissioning Power Reactor Inspection Program," at the permanently shut down Crystal River Nuclear Plant Unit 3 (CR-3). A combination of on-site and remote inspection activities (in-office reviews) were performed as a consequence of the COVID-19 public health emergency (PHE) during this inspection period. 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 site personnel, a review of procedures and records, and plant walkdowns. The results of the inspection were discussed with you and other members of the CR-3 staff on October 6, 2021, 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, and your response, if any, 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).

B. Reid

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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,

Anthony Dimitriadis, Chief
Decommissioning, ISFSI, and Reactor HP
Branch
Division of Radiological Safety and Security

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

Enclosure: Inspection Reports 05000302/2021003
and 07201035/2021001 w/Attachment

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ACCELERATED DECOMMISSIONING PARTNERS (ADP) CR3, LLC, CRYSTAL RIVER UNIT 3, NRC INSPECTION REPORT NOS. 05000302/2021003 AND 07201035/2021001, DATED NOVEMBER 9, 2021.

DOCUMENT NAME: https://usnrc.sharepoint.com/:w:/r/teams/Region-I-Decommissioning-Branch/_layouts/15/Doc.aspx?sourcedoc=%7B3B576BED-DDF6-4AFA-B15B-412906238124%7D&file=3Q%202021%20Crystal%20River%20report%20draft.docx&action=default&mobileredirect=true

SUNSI Review Complete: KWarner

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U.S. NUCLEAR REGULATORY COMMISSION
REGION I

INSPECTION REPORT

Report Nos.	05000302/2021003 and 07201035/2021001
Docket Nos.	05000302 and 07201035
License No.	DPR-72
Licensee:	Accelerated Decommissioning Partners CR3, LLC (ADP)
Facility:	Crystal River Unit 3 (CR-3)
Location:	Crystal River, FL 34428-6708
Inspection Dates:	July 1 – September 30, 2021
Inspector:	<p>K. Warner, Senior Health Physicist Decommissioning, ISFSI, and Reactor HP Branch Division of Radiological Safety and Security</p> <p>L. Cline, Senior Project Engineer (Training) Projects Branch 5 Division of Operating Reactor Safety</p> <p>E. Eve, Senior Reactor Inspector Engineering Branch 1 Division of Operating Reactor Safety</p> <p>M. Keefe-Forsyth, Human Factors Specialist Reactor Assessment Branch Division of Reactor Oversight</p> <p>D. Willis, Team Leader Headquarters Allegation Team Office of Enforcement</p>
Approved By:	<p>Anthony Dimitriadis, Chief Decommissioning, ISFSI, and Reactor HP Branch Division of Radiological Safety and Security</p>

EXECUTIVE SUMMARY

Accelerated Decommissioning Partners CR3, LLC (ADP)
Crystal River Nuclear Plant
NRC Inspection Report Nos. 05000302/2021003 and 07201035/2021001

An announced decommissioning inspection was completed on September 30, 2021 at the permanently shutdown Crystal River Unit 3 (CR3). Certain inspection activities (in-office reviews) were conducted remotely as a consequence of the COVID-19 PHE during this inspection period. The inspection included design changes and modifications, corrective actions, occupational radiation exposure, safety conscious work environment, decommissioning performance and status reviews, fire protection, and radioactive effluent and environmental monitoring. The inspection consisted of observations by the inspectors, interviews with site personnel, and a review of procedures and records, and plant walkdowns. 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."

Additionally, the inspection period included a review and observation of the independent spent fuel storage installation (ISFSI) dry cask activities. The NRC's program for overseeing the operation of dry storage of spent fuel at an ISFSI is described in IMC 2690, "Inspection Program for Dry Storage of Spent Reactor Fuel at Independent Spent Fuel Storage Installations and for 10 Code of Federal Regulations (CFR) Part 71 Transportation Packagings."

Based on the results of this inspection, no violations of more than minor 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 permanent removal of fuel 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). On June 14, 2019, the NRC received 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 sought 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, which the NRC approved on April 1, 2020 [ML20069A023]. On October 1, 2020, ADP and Duke Energy successfully completed the transaction.

As of January 1, 2021 CR-3 was in the “Actively Decommissioning (DECON), No Fuel in the Spent Fuel Pool” category as described in IMC 2561 during this inspection period.

2.0 Active Decommissioning Performance and Status Review

2.1 Inspection Procedures (IPs) 37801, 40801, 64704, 71801, 83750, 84750, and 86750

a. Inspection Scope

In-office reviews of information supplied by ADP were performed during the inspection period. The inspectors performed on-site decommissioning inspections July 19 – 22 and September 14 – 16 supplemented by in-office reviews and periodic phone calls. The inspection consisted of observations by the inspectors, interviews with site personnel, a review of procedures and records, and plant walk-downs.

The inspectors conducted document reviews and interviews with plant personnel to determine if ADP procedures and processes were adequate and in accordance with the regulations and guidance associated with 10 CFR 50.59, and to determine if changes made by ADP under 10 CFR 50.59 required prior NRC approval.

The inspectors reviewed a representative selection of CAP documents to determine if a sufficiently low threshold for problem identification existed, if follow-up evaluations were of sufficient quality, and if ADP assigned timely and appropriate prioritization for issue resolution commensurate with the significance of the issue.

The inspectors reviewed any changes made to the ODCM, PCP, and the radioactive waste system design and operation. The inspectors reviewed the 2020 Annual Radioactive Effluent Release Report and the 2020 Annual Radiological Environmental Operating Report for any anomalous results to determine if reported doses were below regulatory requirements. The inspectors observed a selection of environmental sampling stations to evaluate their location, placement, and material condition.

The inspectors conducted walkdowns and tours of various facilities and storage areas, including the reactor building, auxiliary building, and turbine building. The inspectors observed select pre-job briefs and associated work activities, including reactor building work for removal of large components. The inspectors observed a pressurizer lift plan meeting and weekly management meetings.

The inspectors reviewed documentation associated with occupational exposure and radioactive waste management to determine the effectiveness of site radiological programs. The inspectors interviewed radiation workers, radiation protection management and technicians. The inspectors also reviewed dose records 2021 to date, as low as reasonably achievable (ALARA) plans, surveys, radiation work permits, and Part 61 analyses, in part to determine if work activities were effectively pre-planned to limit worker exposure and appropriately classify radioactive waste.

The inspectors reviewed documents and interviewed plant personnel to assess whether the licensee has an effective decommissioning fire protection program that was maintained and implemented to address the potential for fires that could result in the release or spread of radioactive materials. The inspectors performed plant tours to assess field conditions and the storage of combustible materials.

During the July inspection, the inspectors assessed the licensee's Safety Conscious Work Environment in order to identify any indications of reluctance to report safety issues by site personnel. The team conducted focus groups and interviews of over 45 personnel, reviewed safety conscious work environment surveys, reviewed procedures including the corrective action program procedure, employee concerns program manual, and reviewed employee concerns documents. The inspectors assessed the site's safety culture against the NRC Final Safety Culture Policy Statement and the 10 associated traits of a health safety culture. The inspectors performed a follow-up inspection in September to review the site's initial actions and progress regarding the results of the Safety Conscious Work Environment assessment conducted in July 2021. The inspectors interviewed site personnel and reviewed the associated condition reports to determine if the site screened the condition reports per their corrective action program, identified appropriate corrective actions, and the progress on these items.

b. Observations and Findings

The inspectors determined that 10 CFR 50.59 screenings and evaluations had been properly performed. The inspectors determined that selected 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 inspectors noted through plant tours, document reviews, and observations of activities that ADP conducted activities in accordance with the regulatory requirements. The inspectors interviewed personnel from ADP and Duke Energy responsible for financial assurance on the overall financial status of decommissioning. No issues were

identified. The inspectors noted that NRC headquarters staff has the lead for assessing the appropriateness of a licensee's decommissioning fund allocation.

The inspectors verified that calculated doses reported in the 2020 Annual Radioactive Effluent Release Report and Annual Radiological Environmental Operating Report were below regulatory dose criteria of 10 CFR 50, Appendix I, "Numerical Guides for Design Objectives and Limiting Conditions for Operations to Meet the Criterion "As Low as is Reasonably Achievable" for "Radioactive Material in Light-Water-Cooled Nuclear Power Reactor Effluents." The inspectors determined that recent changes to the Off-Site Dose Calculation Manual were appropriate to the change in plant status and plant conditions following permanent cessation of operations (and the associated decay of short-lived radionuclides). The inspectors also determined that the selected environmental monitoring and sample stations were adequately maintained.

The inspectors reviewed events and corrective action documents for site-identified positive reactor building pressure that was identified on May 4, 2021 as described in Condition Report (CR)2021000060. The reactor building is normally maintained at a negative pressure via air handling exhaust fans for contamination control and to allow outflow through a monitored filtered pathway. Troubleshooting revealed that the positive pressure was due to the recent installation of a supplemental air conditioning system, which increased exhaust rates and build up on the fan roughing filters. Local air samples taken during this period did not indicate any airborne activity, but the continuous air samplers inside the equipment hatch identified low levels of cesium-137 and cobalt-60. The inspectors noted that the quantities of cesium-137 and cobalt-60 were several orders of magnitude below the required lower limit of detection in the ODCM. The site determined that this resulted in an insignificant off-site dose. Site corrective actions included providing a summary statement of this condition in the 2021 Annual Radioactive Effluent Release Report and revising appropriate gaseous effluent permits. Further corrective actions included replacing the filters and reinforcing the expectation to keep the equipment hatch door of the reactor building closed as much as possible. The inspectors noted that daily ventilation and negative pressure checks were performed by the radiation protection group and air samplers were located inside both the equipment and personnel hatches and outside the equipment hatch. The inspectors noted that the reactor building pressure was negative during the July and September reactor building walkdowns and ventilation would continue to be monitored during future inspection visits. The inspectors noted that the auxiliary building ventilation was operating during the inspection period in order to provide negative pressure and a filtered monitored pathway for the auxiliary building during decommissioning work.

The inspectors reviewed the site fire protection program as defined by Crystal River Unit 3 Fire Protection Plan, Revision 38 and associated procedures and fire hazards analysis for compliance with regulatory and license requirements. The inspectors reviewed changes to the program to verify appropriate controls were in place as the site transitioned from a SAFSTOR condition to active decommissioning. The inspectors performed site tours to confirm that the licensee was effectively controlling combustible materials around ignition sources. The inspectors reviewed the common cause analysis performed under CR2021000040 to document and review a potential trend in hot work fire events and the corrective actions for the associated events. Corrective actions

included adding a re-brief of jobs in the middle of shifts after significant breaks including lessons learned and expectations for long duration projects, revising Hot Work Fire Watch training, and perform appropriate training with currently qualified individuals. The inspectors verified that appropriate corrective actions were taken and will continue to monitor any fire issues at the site during subsequent inspections.

During the July inspection, the inspectors assessed the site's safety conscious work environment and determined that personnel were willing to raise nuclear safety concerns and felt they were empowered to stop work when they identified issues. However, the inspectors identified two weaknesses in the site's Safety Culture associated with the leadership safety values, actions and respectful work environment safety culture attributes. The inspectors identified a perception by personnel that management had not followed their own processes and procedures in certain instances. One example involved the delay in processing of some issues in the CAP and the perception that corrective actions needed to be approved prior to entering the issue into the CAP. Another example involved the lack of adherence to the scaffolding procedures. This perception had degraded the Safety Culture trait which states that leaders should demonstrate a commitment to safety in their behaviors. Additionally, the inspectors noted strong indications of a perception of a lack of respectful work environment between staff who had a nuclear background and other staff without a nuclear background. The inspectors identified that contractual challenges had created a level of tension at the management level that, in some cases, may have impacted work. The inspectors identified one example where the contractual tensions between these groups impacted NRC regulatory requirements. This example involved a brief period of time where individuals without the appropriate qualifications were listed on the emergency response roster (CR2021000058). While this particular instance was of minor safety significance, if left unresolved the contractual challenges could further impact regulatory activities. The inspectors also identified that the problem identification and resolution process was degraded. Specifically, the inspectors identified a weakness in staff's understanding of how to initiate a condition report and a weakness in management providing feedback to the staff concerning corrective actions to issues that had been raised.

During the September inspection, the inspectors reviewed eight condition reports and associated corrective actions generated from the results of the July inspection. Immediate corrective actions included training sessions on the safety conscious work environment and the corrective action program. The inspectors determined that the condition reports were appropriately screened per site procedures and the corrective actions appeared to be appropriate. The inspectors noted that some corrective actions were still in progress and would be reviewed during a future inspection, including actions associated with CR2021000078 on Organizational Deficiencies. The inspectors noted that the staff had better awareness of the corrective action program, but a weakness in staff's understanding of how to initiate a condition report remained. The issue was entered into the site's corrective action program as CR2021000114.

The inspectors noted that during this inspection period, the pressurizer and much of the reactor coolant system piping and other large components were removed from the reactor building and shipped off-site. The inspectors discussed ongoing active

decommissioning preparations and upcoming plans with ADP staff.

c. Conclusions

No violations of more than minor significance were identified during this inspection, however, the inspectors identified weaknesses in the site's safety culture associated with the leadership safety values and actions, and respectful work environment attributes. While improvements were noted, the site's safety culture and corrective action program will continue to be reviewed during future inspections.

2.2 Inspection Procedure 60855

a. Inspection

The inspectors observed activities, interviewed personnel, and performed independent evaluations to determine if the licensee was conducting activities associated with the ISFSI in conformance with commitments and requirements. The inspectors reviewed a sample of changes screened and evaluated by ADP under 10 CFR 72.48 to determine if they required prior NRC approval, if changes were consistent with the license or Certificate of Compliance (CoC), and if they reduced the effectiveness of any programs or processes.

b. Observations and Findings

The inspectors reviewed several 10 CFR 72.48 screenings and evaluations and associated calculations, including those associated with Crystal River Units 1 and 2 demolition and placement of two Horizontal Storage Modules (HSM-W). The inspectors determined that 10 CFR 72.48 screenings and evaluations had been properly performed that the changes did not require prior NRC approval.

The inspectors observed activities associated with the placement of an HSM-W onto the pad for future storage of Greater-Than-Class-C waste and verified that communication and coordination of ISFSI activities met established regulatory and site requirements. The inspectors also observed a pre-job brief and senior management review team meeting to assess the licensee's ability to troubleshoot self-identified issues and identify critical steps of the evolution, potential failure scenarios, and human performance tools to prevent errors.

c. Conclusions

Based on the results of this inspection, no violations of more than minor significance were identified.

3.0 Exit Meeting Summary

On, October 6, 2021, the inspectors presented the inspection results to Mr. Billy Reid, Site Vice President, and other members of the CR-3 staff. No proprietary information was retained by the inspectors or documented in this report.

ATTACHMENT: SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

B. Reid, Site Vice President
 B. Akins, Radiation Protection Manager
 D. Bartlett, RP Technician
 C. Burtoff, RP Engineer
 P. Dixon, ISFSI Manager
 T. Doruff, D&D Planner
 P. Ezzell, Radiation Engineer
 C. Miller, Operations and Maintenance Manager
 L. Reader, RP Specialist
 G. Thibodeaux, Vice President Director of Health and Safety
 M. Van Sicklen, Licensing Manager
 M. Walker, D&D Manager
 L. McDougal, ORANO Project Manager

ITEMS OPEN, CLOSED, AND DISCUSSED

None

PARTIAL LIST OF DOCUMENTS REVIEWEDCondition Reports

2020000022	2021000078
2020000029	2021000079
2021000040	2021000080
2021000061	2021000081
2021000058	2021000082
2021000060	2021000083
2021000098	2021000084
2021000010	2021000085
2020000006	2021000089
2021000037	2021000095
2021000068	2021000097

Miscellaneous

10 CFR 50.59 Screenings Various Dated July 1 2021 - August 2021
 10 CFR 50.75(g) file, selected entries
 2021 Dry Active Waste 10 CFR 61 Analysis for RB and AB, February 4, 2021
 22037-0501, CR3 Dose Rate and Site Dose Assessment for Storage of the RWC-WA within the HSM-W, Revision 0
 22037-EE-001, CR3 ISFSI Pad Structural and Seismic Reconciliation for ISFSI HSM-W Expansion, Revision 1
 2020 Annual Radioactive Effluent Release Report
 2020 Annual Radioactive Environmental Operating Report
 Auxiliary Building and Turbine Building Waste Characterization Plan, September 14, 2020

Miscellaneous (Cont'd)

CAP-0200, "Corrective Action Program," Revision 6
 Crystal River Unit 3 Fire Hazards Analysis, Revision 18
 Crystal River Unit 3, Fire Protection Plan, Revision 38
 Defueled Safety Analysis Report Crystal River Unit 3, Revision 7
 DRR-2021-001, Off-Site Dose Calculation Manual, Revision 41
 HPP-112 Attachment 1, Radionuclide Analysis Summary Sheet, 2021
 HPP-112 Attachment 2, Summary of Beta-Gamma to Alpha Ratios from Collected Smears,
 February 10, 2021
 L-2021-0015, WDT-10A Release Permit, June 3, 2021
 L-2021-0020, SWT-1 Permit, July 26, 2021
 Reg10-2021-02, Revision 10
 Reg10-2021-34, Revision 4
 Supplement to the white paper titled "2021 DAW 10 CFR 61 Analysis for the Reactor Building
 and Auxiliary Building" for DAW type materials inside the RCA, dated April 5, 2021

LIST OF ACRONYMS USED

ADAMS	Agencywide Document and Management System
ADP	Accelerated Decommissioning Partners
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CR	Condition Report
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
PHE	Public Health Emergency
PSDAR	Post Shutdown Activities Report
ODCM	Offsite Dose Calculation Manual
SAFSTOR	Safe Storage