



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

February 12, 2024

Mr. Billy Reid, Site Executive
ADP CR3, LLC
157060 West Power Line Street
Crystal River, FL 34428

**SUBJECT: CRYSTAL RIVER UNIT 3 NUCLEAR GENERATING PLANT – AUDIT REPORT
FOR ACCELERATED DECOMMISSIONING PARTNERS CRYSTAL RIVER
REQUEST TO ADD LICENSE CONDITION TO INCLUDE TERMINATION PLAN
REQUIREMENTS (EPID NO. L-2022-LLA-0194)**

Dear Mr. Reid:

By letter dated December 12, 2022 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML22355A441), as supplemented by letter dated June 9, 2023 (ML23163A063), Accelerated Decommissioning Partners Crystal River Unit 3, LLC (ADP CR3) (the licensee) requested U.S. Nuclear Regulatory Commission (NRC) approval of a request to add a condition to include License Termination Plan (LTP) requirements to NRC License No. DPR-72 for the Crystal River Unit 3 Nuclear Generating Plant (CR3).

The proposed amendment would approve the LTP and add License Condition 2.C.21, which establishes the criteria for determining when changes to the LTP require NRC approval. The LTP will be implemented by the licensee to complete decommissioning activities at the CR3 site. Once decommissioning is complete, a separate request will be made to the NRC by the licensee to terminate the CR3 license.

Enclosed is a report on the regulatory audit conducted by the NRC staff from November 13, 2023, to January 19, 2024, in connection with its review of the CR3 LTP application. The audit report does not make any regulatory conclusions or findings, but is part of the administrative record of the NRC staff's review of the application and may provide information supporting the NRC staff's safety evaluation of the CR3 LTP. The audit followed the plan provided by letter dated November 7, 2023 (ML23310A063), unless otherwise noted in the enclosed report.

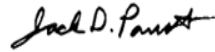
In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's ADAMS. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

B. Reid

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If you have any questions, please contact Timothy Barvitskie at (301)-415-2480 or by electronic mail at timothy.barvitskie@nrc.gov, or me at (301)-415-6634 or by electronic mail at jack.parrott@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Jack D. Parrott".

Signed by Parrott, Jack
on 02/12/24

Jack D. Parrott, Senior Project Manager
Reactor Decommissioning Branch
Division of Decommissioning, Uranium Recovery
and Waste Projects
Office of Nuclear Material Safety and Safeguards

Docket No. 50-302
License No. DPR-72

Enclosure: Audit Report

cc w/enclosure: Crystal River Listserv

B. Reid

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FOR ACCELERATED DECOMMISSIONING PARTNERS CRYSTAL RIVER
REQUEST TO ADD LICENSE CONDITION TO INCLUDE TERMINATION PLAN
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DATED FEBRUARY 12, 2024

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS

REGULATORY AUDIT SUMMARY

REGARDING LICENSE AMENDMENT REQUEST TO APPROVE THE

LICENSE TERMINATION PLAN (LTP) AND ADD A LICENSE CONDITION

THAT ESTABLISHES THE CRITERIA FOR DETERMINING WHEN

A CHANGE TO THE LTP REQUIRES PRIOR NRC APPROVAL

ACCELERATED DECOMMISSIONING PARTNERS CRYSTAL RIVER UNIT 3

CRYSTAL RIVER UNIT 3 NUCLEAR GENERATING PLANT

DOCKET NO. 50-302

1.0 BACKGROUND

By letter dated December 12, 2022 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML22355A441), as supplemented by letter dated June 9, 2023 (ML23163A063), Accelerated Decommissioning Partners Crystal River Unit 3, LLC (ADP CR3, the licensee) requested U.S. Nuclear Regulatory Commission (NRC) approval of a license amendment request (LAR) to add a condition to include License Termination Plan (LTP) requirements to NRC License No. DPR-72 for the Crystal River Unit 3 Nuclear Generating Plant (CR3).

The proposed LAR would approve the CR3 LTP and add License Condition 2.C.21, which establishes the criteria for determining when changes to the LTP require prior NRC approval. The LTP will be implemented by the licensee to complete decommissioning activities at the CR3 site. Once decommissioning is complete, a separate request will be made to the NRC by the licensee to terminate the CR3 license.

This report summarizes the regulatory audit conducted by the NRC staff from November 13, 2023, to January 19, 2024, in connection with its review of the CR3 LTP application. The audit report does not make any regulatory conclusions or findings, but is part of the administrative record of the NRC staff's review of the application and may provide information supporting the NRC staff's safety evaluation of the CR3 LTP. The audit followed the plan provided by letter dated November 7, 2023 (ML23310A063), unless otherwise noted in this audit report.

2.0 AUDIT DATES AND LOCATION

The regulatory audit was conducted from November 13, 2023, to January 19, 2024, via an online portal established by the licensee that allowed the NRC staff to view documents remotely via the internet and included an onsite portion at the CR3 site in Crystal River, Florida from December 4 to December 8, 2023.

3.0 AUDIT ACTIVITIES

On November 13, 2023, a virtual entrance meeting for the audit was held between the NRC staff and representatives of ADP CR3 to discuss the audit process and provide an overview of the specific focus topics provided to the licensee in the audit plan (ML23310A063). The purpose of the entrance meeting was to provide an overview of the audit process and to ensure clarity and understanding regarding the topics outlined in the audit plan.

Prior to commencement of the audit, the NRC staff reviewed the LTP LAR and provided preliminary discussion topics for the audit by email on November 17, 2023 which are described in the attachment to this audit report. On November 29, 2023, the licensee established the online portal requested in Section VI of the NRC's audit plan.

The NRC staff discussed the specific focus topics and the information the licensee provided in the online portal with representatives of ADP CR3 during the onsite audit from December 4 to December 8, 2023, and through virtual meetings held between the NRC staff and ADP CR3 following the onsite portion of the audit on December 14, 2023, January 9, 2024, and January 16, 2024. In addition, during the onsite portion of the audit ADP CR3 conducted a site tour of CR3, which helped further NRC staff's understanding of the site layout and relationship to facility structures as they relate to information described in the LTP.

Technical discussions during the audit were focused on the following major areas: compliance with radiological criteria for license termination (CRCLT), hydrology and groundwater (HGW), site characterization (SC), plans for radiological site remediation (PRSR), and the final radiation survey plan (FSS). During the onsite portion of the audit, various topics were discussed within each of the major areas, as summarized in the attachment to this audit report.

The NRC staff and the licensee discussed and determined closure paths at the conclusion of each topic, as applicable. For CRCLT, the discussions involved the overall approach to considering multiple contaminated media, the applicability of the building occupancy conceptual model to subsurface structures, the approach to accounting for dose contributions from hard-to-detect radionuclides, and the justification for key modeling parameters. For HGW, the discussions focused on the conceptual site model, the potential dose from existing groundwater contamination, and support for input parameter values for the groundwater pathway in the dose models. However, staff understands that the licensee may instead demonstrate that the saturated groundwater zone does not meet the definition of an aquifer, thus removing the groundwater pathway from dose models.

For SC, the discussions included characterization measurement and sampling methodology and results for surface and subsurface soils, building interiors, building basement structures, embedded piping, and backfill materials, and survey unit classification. For PRSR, the discussion was comprised of the as low as reasonably achievable (ALARA) analysis and the inputs to the ALARA calculations. For FSS, the discussion focused on final status survey design and implementation, including instrument sensitivity, radionuclide fractions, surrogate

radionuclides, insignificant contributors, investigation levels, isolation and controls, discrete radioactive particles, survey and sampling methodology for various media (e.g., basement structures, embedded piping, pavement areas and shallow concrete slabs, haul paths), and application of derived concentration guideline levels (e.g., gross activity, embedded piping, basement structures, building surfaces).

On December 8, 2023, at the conclusion of the onsite portion of the audit, the NRC staff briefed the licensee on the priority topics that the licensee should prioritize resolution of in order to facilitate a continued timely review of the CR3 LTP. The NRC staff chose these topics based on two criteria that could significantly delay the staff's ongoing review of the CR3 LTP. First, the NRC staff selected items that may result in a higher level of time or effort for the licensee to resolve. Second, the NRC staff prioritized areas that could have significant cascading effects on other elements of the licensee's decommissioning approach.

Following the briefing, the NRC staff and the licensee discussed that the NRC would issue requests for additional information (RAIs) in the near term to address these high priority items. Accordingly, the NRC staff used the discussions during the audit to inform RAIs focused on the priority items, which were provided to the licensee in a letter dated December 22, 2023 (ML23354A063 and ML23354A064).

4.0 RESULTS OF THE AUDIT

The NRC staff gained insight into the licensee's approach to address the identified concerns in each of the major areas described in Section 3.0 of this audit report. Based on the discussions during the audit, the licensee intends to make changes to several sections of the CR3 LTP and submit a revised LTP on the docket in order to address items characterized during the audit. Many of the licensee's planned changes to the CR3 LTP are anticipated to have cascading impacts on other parts of the LTP, which will also be reviewed by the NRC staff upon receipt of the revised LTP.

Due to the nature of the changes being made to the CR3 LTP, the NRC staff conveyed to the licensee that they anticipate the need for subsequent discussions upon receipt of the revised LTP, and that additional information may be needed to support the NRC's review of the LTP. Subsequent discussions may also take place based on the licensee's response to the NRC staff's initial RAIs.

The table provided in the attachment to this audit report provides a comprehensive summary of the topics discussed during the CR3 LTP audit in each of the major areas and outlines the basis for each discussion topic, along with the proposed path to resolution, as applicable.

5.0 AUDIT PARTICIPANTS

Provided below is a list of audit participants from the NRC, ADP CR3, and ADP CR3 consultants:

NRC Staff
Louis Caponi
Christianne Ridge
Kathryn Robertson-DeMers
Greg Chapman
Randy Fedors

Jack Parrott
Timothy Barvitskie
Shaun Anderson
Chris McKenney

ADP CR3

Bryant Akins
Chuck Burtoff
Nelson Langub
John Jernigan
Billy Reid
Marshall Blake

ADP CR3 Consultants

Tom Silko
Claude Wiblin
James Stewart Bland
Nadia Glucksberg

6.0 DOCUMENTS REVIEWED

The table below provides a list of documents that the NRC staff reviewed during the audit.

Document/File	Title	Revision/Date
CR3 2023 R2 ALARA_ 11-29-2023-REV01_Final Draft.docx	Crystal River Unit 3 Nuclear Generating Plant Generic ALARA Evaluation	November 29, 2023
Set of 19 RESRAD-Onsite summary files for soil DCGL development with file names in the format: CR3-DCGL-RADIONUCLIDE-SUMMARY.REP Where "RADIONUCLIDE" represents each of the 19 radionuclides of concern	RESRAD-Onsite Summary: CR3_DCGL_RAD	Files generated from models run between February 11, 2022, and February 15, 2022

Document/File	Title	Revision/Date
<p>Set of 19 RESRAD-Onsite probabilistic output files for soil DCGL development with file names in the format:</p> <p>CR3-DCGL-RADIONUCLIDE - MCSUMMARY.REP</p> <p>Where "RADIONUCLIDE" represents each of the 19 radionuclides of concern</p>	<p>RESRAD-Onsite Probabilistic Results Summary: CR3_DCGL_RAD</p>	<p>Files generated from models run between February 11, 2022, and February 15, 2022</p>
<p>2021-1209-RESRAD Input Values Memo-DF.pdf</p>	<p>Technical Support Document 134300, Development of Site-Specific Values for RESRAD Hydrogeological and Hydrological Parameters, ADP CR3 Decommissioning, Crystal River, Florida</p>	<p>December 9, 2021</p>
<p>Six laboratory procedures for different sets of radionuclides</p>	<p>Folder: "11. Vendor laboratory analysis types, techniques, methods, and MDC by media"</p>	
<p>SMG-OFF-BF-00_Survey Plan_Rev-01_signed.pdf</p>	<p>SMG Off-site Backfill Characterization Worksheet</p>	<p>October 4, 2023</p>