



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION IV
1600 EAST LAMAR BOULEVARD
ARLINGTON, TEXAS 76011-4511

December 3, 2021

Mr. Doug Bauder, Vice President
and Chief Nuclear Officer
Southern California Edison Company
San Onofre Nuclear Generating Station
P.O. Box 128
San Clemente, CA 92674-0128

**SUBJECT: SAN ONOFRE NUCLEAR GENERATING STATION – NRC INSPECTION
REPORT 05000361/2021-004 AND 05000362/2021-004**

Dear Mr. Bauder:

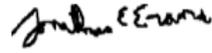
This letter refers to the U.S. Nuclear Regulatory Commission's (NRC's) inspection conducted on November 15-18, 2021, at the San Onofre Nuclear Generating Station (SONGS), Units 2 and 3. The NRC inspector discussed the results of this inspection with you and members of your staff during a final exit meeting conducted on November 18, 2021. The inspection results are documented in the enclosure to this letter.

This 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 site meetings, performance of independent radiation measurements, and interviews with personnel. Specifically, the inspector reviewed decommissioning planning activities for SONGS Units 2 and 3, and the implementation of the solid radioactive waste management and transportation programs. Within the scope of the inspection, no violations were identified, and a response to this letter is not 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 Ms. Stephanie Anderson at 817-200-1213, or the undersigned at 817-200-1249.

Sincerely,



Signed by Evans, Jonathan
on 12/03/21

Jonathan E. Evans, Acting Chief
Reactor Inspection Branch
Division of Nuclear Materials Safety

Docket Nos. 50-361; 50-362
License Nos. NPF-10; NPF-15

Enclosure:
Inspection Report 05000361/2021-004;
05000362/2021-004

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05000361/2021-004; 05000362/2021-004 - DATED DECEMBER 03, 2021

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket Nos. 05000361; 05000362

License Nos. NPF-10; NPF-15

Report Nos. 05000361/2021-004; 05000362/2021-004

Licensee: Southern California Edison Company

Facility: San Onofre Nuclear Generating Station, Units 2 and 3

Location: 5000 South Pacific Coast Highway
San Clemente, California

Inspection Dates: November 15-18, 2021

Inspector: Stephanie G. Anderson
Senior Health Physicist
Reactor Inspection Branch
Division of Nuclear Materials Safety

Accompanied By: Alexis D. Willis
General Engineer
Materials Inspection Branch
Division of Nuclear Materials Safety

Jonathan E. Evans
Acting Chief
Reactor Inspection Branch
Division of Nuclear Materials Safety

Approved By: Jonathan E. Evans, Acting Chief
Reactor Inspection Branch
Division of Nuclear Materials Safety

Enclosure

EXECUTIVE SUMMARY

San Onofre Nuclear Generating Station, Units 2 and 3
NRC Inspection Report 05000361/2021-004; 05000362/2021-004

This U.S. Nuclear Regulatory Commission (NRC) inspection was a routine, announced inspection of decommissioning activities being conducted at the San Onofre Nuclear Generating Station, Units 2 and 3. In summary, the licensee was conducting these activities in accordance with site procedures, license requirements, and applicable NRC regulations.

Within the scope of the inspection, no violations were identified.

Decommissioning Performance and Status Review at Permanently Shutdown Reactors

- Decommissioning activities were being conducted in accordance with the general guidance provided in the Post-Shutdown Decommissioning Activities Report. Radiological postings were consistent with regulatory requirements. The inspector determined that the licensee was adequately controlling decommissioning activities and radiological work areas at the facility. (Section 1.2)

Solid Radioactive Waste Management and Transportation of Radioactive Materials

- The inspector concluded that the licensee and its contractors were knowledgeable of the transportation requirements and adequately trained to implement the program. The licensee maintained a solid radioactive waste management and transportation program that met regulatory requirements. (Section 2.2)

Report Details

Summary of Plant Status

On June 12, 2013, the Southern California Edison Company (SCE), the licensee, formally notified the NRC by letter that it had permanently ceased power operations at the San Onofre Nuclear Generating Station (SONGS), Units 2 and 3, effective June 7, 2013. The licensee's letter is available in the Agencywide Documents Access and Management System (ADAMS) under (ADAMS Accession No. ML131640201). By letters dated June 28, 2013 (ADAMS Accession No. ML13183A391), and July 22, 2013 (ADAMS Accession No. ML13204A304), the licensee informed the NRC that the reactor fuel had been permanently removed from SONGS, Units 3 and 2, reactor vessels as of October 5, 2012, and July 18, 2013, respectively.

Upon docketing of these certifications, and pursuant to Title 10 of the *Code of Federal Regulations* (CFR) 50.82(a)(2), the SONGS, Units 2 and 3, facility operating licenses no longer authorized operation of the reactors or emplacement or retention of fuel into the reactor vessels. In response to the licensee's amendment request, the NRC issued the permanently defueled technical specifications on July 17, 2015 (ADAMS Accession No. ML15139A390), along with revised facility operating licenses to reflect the permanent cessation of operations at SONGS, Units 2 and 3.

The licensee submitted its Post-Shutdown Decommissioning Activities Report (PSDAR) on September 23, 2014 (ADAMS Accession No. ML14269A033), which is required to be submitted within 2 years following permanent cessation of operations under 10 CFR 50.82(a)(4). The PSDAR outlines the decommissioning activities for SONGS, Units 2 and 3. By letter dated August 20, 2015 (ADAMS Accession No. ML15204A383), the NRC informed the licensee that the PSDAR contained the information required by 10 CFR 50.82(a)(4)(i). The current version of the PSDAR is dated May 7, 2020 (ADAMS Accession No. ML20136A339).

The licensee submitted a license amendment request dated December 15, 2016 (ADAMS Accession No. ML16355A015), to revise the Permanently Defueled Emergency Plan into an Independent Spent Fuel Storage Installation (ISFSI) Only Emergency Plan (IOEP), and to revise the emergency action level (EAL) scheme into ISFSI-Only EALs for SONGS, Units 1, 2, and 3 ISFSI. The proposed changes reflect the new status of the facility, as well as the reduced scope of potential radiological accidents, since all of the spent fuel has been moved to dry cask storage within the onsite ISFSI.

The NRC issued amendments to the SONGS operating licenses to allow transition to an IOEP and EAL scheme on November 30, 2017 (ADAMS Accession No. ML17310B482). The NRC inspector determined that the SONGS IOEP and associated changes provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at the SONGS facility. The changes were reviewed, and appropriate conforming changes were properly addressed in the applicable revision and sections of the SONGS Updated Final Safety Analysis Report.

License Amendment 169 (Unit 1), 237 (Unit 2), and 230 (Unit 3) were submitted on December 15, 2016, (ADAMS Accession No. ML16355A014) and approved by the NRC by letter dated January 9, 2018 (ADAMS Accession No. ML17345A657). These license amendments changed the operating licenses and technical specifications to reflect the removal of all spent nuclear fuel from the SONGS, Units 2 and 3 Spent Fuel Pools (SFPs) and its transfer to dry cask storage within an onsite ISFSI. These changes fully reflect the permanently

shutdown status of the decommissioning facility, as well as the reduced scope of structures, systems, and components necessary to ensure plant safety since all spent fuel has been moved to the SONGS ISFSI.

The changes also made conforming revisions to the SONGS, Unit 1 technical specifications and combined them with the SONGS, Units 2 and 3 technical specifications. This license amendment became effective as of the date the licensee submitted a written notification to the NRC that all spent nuclear fuel assemblies had been transferred out of the SONGS SFPs and placed in storage within the onsite ISFSI. In a letter to the NRC dated August 7, 2020, (ADAMS Accession No. ML20227A044) the licensee has certified that all spent fuel has been removed from the SFPs of Units 2 and 3. Accordingly, SONGS entered their ISFSI-Only Technical Specifications, Emergency Plan (EP), and Security Plan on August 10, 2020.

On December 20, 2016, the licensee announced the selection of AECOM and EnergySolutions as the decommissioning general contractor for SONGS. The joint venture between the two companies is called SONGS Decommissioning Solutions (SDS). The SDS organization manages the decommissioning activities as the decommissioning general contractor, which is described in the licensee's PSDAR.

The California Environmental Quality Act is the state equivalent of the Federal National Environmental Policy Act. For SONGS, the California State Lands Commission (CSLC) performed the California Environmental Quality Act review, which was triggered by the need to establish the final disposition for the offshore conduits that are under a CSLC lease. On February 11, 2019, the Final Environmental Impact Report was released by the CSLC. The CSLC held a public meeting on March 21, 2019, to consider the Final Environmental Impact Report and a lease application to decommission the offshore infrastructure associated with SONGS, Units 2 and 3. On October 17, 2019, the California Coastal Commission approved, with conditions, the Coastal Development Permit to begin decontamination and dismantlement of the above grade structures at SONGS, which authorized active decommissioning activities at the site. Now that all spent fuel has been removed from the SFPs to the ISFSI, SDS has begun active decommissioning of the site. During the inspection week, SDS was actively completing vertical cuts on the A-Ring of the Unit 2 core barrel and removing parts of the Unit 2 turbine systems and structures.

1 Decommissioning Performance and Status Review at Permanently Shutdown Reactors (71801)

1.1 Inspection Scope

The inspector reviewed documents, interviewed plant personnel, and conducted site tours to assess the licensee's performance in the following areas:

- Status of decommissioning and verify whether the licensee was conducting decommissioning and maintenance activities in accordance with regulatory and license requirements;
- Licensee awareness of work activities to assess their control and conduct of decommissioning;
- Status of the licensee's decommissioning staffing, personnel qualifications, and training requirements, including that of the contracted workforce, to ensure that

license requirements were met, as applicable to the current decommissioning status;

- Whether the licensee was identifying problems related to decommissioning and maintenance activities at an appropriate threshold and entering them into the corrective action program;
- Performed plant tours to assess field conditions and decommissioning activities; and
- Observed and assessed the status of facility housekeeping.

1.2 Observations and Findings

The PSDAR provides a high-level description of the planned decommissioning activities. At the time of the inspection, the licensee and its decommissioning general contractor were conducting decommissioning activities in accordance with the PSDAR. The inspector discussed the current schedule with management staff and conducted site tours to observe work in progress. Critical path activities include segmentation of the Unit 2 and Unit 3 reactor vessel internals.

The inspector attended meetings that included discussion of decommissioning activities as well as the current plant status for each day. The meetings provided participants with useful information about the daily status of plant activities. The inspector performed general tours of the facilities, to include, the command center, ISFSI pad, and the Unit 2 containment building. Plant staff appeared to be knowledgeable of site conditions and based on observations, the inspector determined that the licensee was adequately maintaining the material condition of the facilities, as well as the structures, systems, and components that are necessary for safe decommissioning. General observations by the inspector identified good housekeeping practices, and appropriate radiological postings and labeling. The inspector did not identify any radiation area that was not posted by the licensee.

The licensee's decommissioning contractor, SDS, is currently cutting the A-Ring of the Unit 2 Core Barrel to begin the reactor vessel internals segmentation activities. During the inspection, the inspector oversaw SDS contractors cutting on one of the 16 vertical cuts of the A-Ring of the Core Barrel. The contractors were following a work plan, in proper personal protection equipment, and communicating with each other on the cutting activity. The inspector also toured the Unit 2 containment building and evaluated whether site personnel were focusing on safety, adherence to procedures, and radiological precautions as directed by regulatory and procedural requirements.

The inspector observed the status of work outside of the power block. Various shop and office buildings around the power block have been demolished, were being demolished, or will be demolished in the near future. Parts of the Unit 2 turbine systems and structures were being removed in preparation for the Turbine Building to be demolished in the future. Building rubble was being radiologically surveyed and sorted for unconditional release.

1.3 Conclusion

Decommissioning activities were being conducted in accordance with the general guidance provided in the PSDAR. Radiological postings were consistent with regulatory requirements. The inspector determined that the licensee was adequately controlling decommissioning activities and radiological work areas at the facility.

2 **Solid Radioactive Waste Management and Transportation of Radioactive Materials (86750)**

2.1 Inspection Scope

The inspector reviewed documents and interviewed plant personnel to assess the licensee's performance in the following areas:

- Whether the licensee provided detailed instructions and operating procedures for transfer, packaging, and transport of low-level radioactive waste;
- Whether the material was properly classified, described, packaged, marked, and labeled for transportation;
- Effectiveness of the licensee's programs for processing, handling, storage, and transportation of radioactive material;
- Whether the licensee is identifying problems related to radioactive waste storage, processing, and transportation activities at an appropriate threshold and entering them into the corrective action program;
- Whether the licensee used updated and audited procedures when scaling factors or correlation factors were used to quantify the concentration of hard-to-detect radionuclides; and
- Whether shipments made by the licensee were in compliance with NRC and Department of Transportation regulations.

2.2 Observations and Findings

The inspector reviewed the licensee's waste management program, which is implemented by SDS using procedure SDS-WM1-PGM-0001, "Waste Management Program," Revision 16. At the time of this inspection, SDS had shipped 113 radioactive waste packages in 2021 to Clive, UT and Bear Creek, TN for disposal. The inspector reviewed several shipping packages for 2021, training records of the SDS staff, and verified the 24-hour emergency telephone number indicated on the shipping papers. Based on discussions with SDS waste group, the inspector concluded SDS staff were knowledgeable of the waste and transportation requirements.

The licensee generated six, 10 CFR Part 61 waste streams, for various plant systems around the site. The inspector reviewed the primary system waste stream and the 2021 general area dry active waste stream. The inspector reviewed the waste stream generated and the methodology used for the generation of scaling factors to account for difficult-to-measure radionuclides. Based on the review and discussions with SDS personnel, the inspector concluded the methodology was technically sound and provided

reasonable assurance that the radionuclide concentrations identified represented the facility's specific data.

The inspector reviewed the licensee's 10 CFR Part 37 security plan which is implemented by a SDS procedure. The inspector verified the security zones that may contain generated radioactive waste materials that meet the category 1 or category 2 threshold, were properly secured.

Based on discussions with responsible staff and review of representative records, the inspector concluded that the shippers were knowledgeable of the regulations, had adequate training, and demonstrated adequate skills to accomplish the package preparation requirements for public transport.

2.3 Conclusion

The inspector concluded that the licensee and its contractors were knowledgeable of the transportation requirements and adequately trained to implement the program. The licensee maintained a solid radioactive waste management and transportation program that met regulatory requirements.

3 Exit Meeting Summary

On November 18, 2021, the NRC inspector presented the final inspection results to Mr. Doug Bauder, Chief Nuclear Officer and Vice President Decommissioning, and other members of the licensee's staff. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified with the exception of all SDS procedures and documents reviewed during the inspection, which were marked as proprietary.

SUPPLEMENTAL INSPECTION INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

A. Bates, SCE, Regulatory Affairs and Oversight Manager
S. Mannon, SDS, Program Director and Regulatory Manager
L. Rafner, SCE, Regulatory Affairs
M. Morgan, SCE, Regulatory Affairs
B. Corbett, SDS, Radiation Protection Manager
R. Kalman, SDS, Executive Sponsor
A. Wood, SDS, Waste Manager

INSPECTION PROCEDURES USED

IP 71801 Decommissioning Performance and Status Review at Permanently Shutdown Reactors
IP 86750 Solid Radioactive Waste Management and Transportation of Radioactive Materials

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened/Closed

None

Discussed

None

LIST OF ACRONYMS

ADAMS	Agencywide Documents Access and Management System
CFR	Code of Federal Regulations
CSLC	California State Lands Commission
D&D	Decontamination and Dismantlement
EAL	Emergency Action Level
EP	Emergency Plan
IOEP	ISFSI-Only Emergency Plan
ISFSI	Independent Spent Fuel Storage Installation
NRC	Nuclear Regulatory Commission
PSDAR	Post-Shutdown Decommissioning Activities Report
SCE	Southern California Edison Company
SDS	SONGS Decommissioning Solutions
SONGS	San Onofre Nuclear Generating Station
TS	Technical Specification