



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

March 14, 2022

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 05000361/2022-001 AND 05000362/2022-001

Dear Mr. Bauder:

This letter refers to the U.S. Nuclear Regulatory Commission's (NRC's) inspection conducted on February 14-17, 2022, at the San Onofre Nuclear Generating Station (SONGS), Units 2 and 3. The NRC inspectors discussed the results of this inspection with you and members of your staff during a final exit meeting conducted on February 17, 2022. 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 inspectors reviewed decommissioning planning activities for SONGS Units 2 and 3, and the implementation of the fire protection program.

Based on the results of this inspection, the NRC has determined that one Severity Level IV violation of NRC requirements occurred. The violation related to the licensee's failure to implement the Fire Protection Program as required by 10 CFR 50.48(f)(1), regarding combustible materials. Since the licensee placed the deficiency into its corrective action program, the safety significance of the issue was determined to be low, and because the violation was non-repetitive and not willful, then this violation is being treated as a Non-Cited Violation (NCV), consistent with Section 2.3.2.a of the NRC Enforcement Policy. The current NRC Enforcement Policy is included on the NRC's Website at (<https://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html>). This NCV is described in the subject inspection report.

You are not required to respond to this letter unless the description herein does not accurately reflect your corrective actions or your position. However, if you contest the violation or significance of the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with copies to: (1) the Regional

Administrator, Region IV, and (2) the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

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 Warnick, Gregory  
on 03/14/22

Gregory G. Warnick, Chief  
Decommissioning, ISFSI, and Operating  
Reactor Branch  
Division of Radiological Safety & Security

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

Enclosure:  
Inspection Report 05000361/2022-001,  
05000362/2022-001

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REPORT05000361/2022-001; 05000362/2022-001 - DATED MARCH 14, 2022

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**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION IV**

Docket Nos. 05000361; 05000362

License Nos. NPF-10; NPF-15

Report Nos. 05000361/2022-001; 05000362/2022-001

Licensee: Southern California Edison Company

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

Location: 5000 South Pacific Coast Highway  
San Clemente, California

Dates: February 14-17, 2022

Inspectors: Stephanie G. Anderson Senior Health Physicist  
Decommissioning, ISFSI, and Operating Reactor Branch  
Division of Radiological Safety and Security

John P. Reynoso, Health Physicist  
Decommissioning, ISFSI, and Operating Reactor Branch  
Division of Radiological Safety and Security

Approved By: Gregory G. Warnick, Chief  
Decommissioning, ISFSI, and Operating Reactor Branch  
Division of Radiological Safety and Security

Enclosure

## **EXECUTIVE SUMMARY**

San Onofre Nuclear Generating Station, Units 2 and 3  
NRC Inspection Report 05000361/2022-001; 05000362/2022-001

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.

### Decommissioning Performance and Status Review at Permanently Shutdown Reactors

- The licensee was implementing the decommissioning activities in accordance with the regulations and license requirements. The inspectors determined that the licensee was adequately controlling decommissioning activities and radiological work areas at the facility. (Section 1.2)

### Fire Protection Program at Permanently Shutdown Reactors

- The NRC determined that one Severity Level IV non-cited violation of 10 CFR 50.48(f)(1), occurred based on the licensee's failure to verify all combustible materials had been removed within 35 feet of hot work activities. (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 (EP) 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 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 inspectors 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, 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 (D&D) 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 3 core barrel and removing parts of the Unit 2 and 3 turbine systems and structures.

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

### **1.1 Inspection Scope**

The inspectors 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 licensee submitted its PSDAR on September 23, 2014, as required under 10 CFR 50.82(a)(4). The PSDAR provides the general dates for each decommissioning phase implementation period and associated activities for that period. The licensee stated that the implementation of the activities described under each period may overlap and not necessarily be implemented consecutively. The site is in Period 4, "D&D (Decontamination and Dismantlement) Dry Storage," which began with the completion of fuel transfer and extends through the completion of D&D work.

The inspectors 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 inspectors performed tours of the facilities, radiation waste and safety equipment buildings, Unit 2 and Unit 3 containment buildings, and along the east road of the plant. Plant staff appeared to be knowledgeable of site conditions and based on observations, the inspectors 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 inspectors identified good housekeeping practices, and appropriate radiological postings and labeling. The inspectors did not identify any radiation area that was not adequately identified and posted by the licensee.

The licensee's decommissioning contractor, SDS, is performing, in the Unit 2 and Unit 3 containment buildings core barrel demolition with ongoing preparations for reactor head and vessel internals segmentation. This includes making modifications inside the containment buildings, including removal of large components and pressurizer interference. The inspectors toured the Unit 2 and Unit 3 containment buildings and evaluated the site personnel were focusing on safety, adherence to procedures, and radiological precautions as directed by regulatory and procedural requirements.

The inspectors requested various legacy documents and interviewed SCE and SDS staff to verify that the licensee has appropriately identified and stored in accordance with quality assurance requirements records important to decommissioning as defined in 10 CFR 50.75(g).



The inspectors evaluated the licensee's decommissioning cost planning and assessment, being an important part of the decommissioning process. The inspectors determined that the licensee's cost planning and assessment were inclusive of current and planned major decommissioning activities as identified in the PSDAR. The inspectors also determined that licensee funding and expenditures were tracking as planned by the licensee with no significant deviations to expenditures up to current date nor major deviations from the decommissioning schedule.

### 1.3 Conclusion

The licensee was implementing the decommissioning activities in accordance with the regulations and license requirements. The inspectors determined that the licensee was adequately controlling decommissioning activities and radiological work areas at the facility.

## **2 Fire Protection Program at Permanently Shutdown Reactors (64704)**

### 2.1 Inspection Scope

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

- Assess whether the licensee has an effective decommissioning fire protection program that is maintained and implemented to address the potential for fires that could result in the release or spread of radioactive materials;
- Verify in the absence of spent fuel in the spent fuel storage pool the decommissioning fire protection program ensures adequate protection from the fire-induced release of radioactive material from contaminated plant areas and combustible waste products; and
- Performed plant tours to assess field conditions and the storage of combustible materials.

### 2.2 Observations and Findings

Title 10 CFR 50.48(f) states, in part, that the licensee shall maintain a fire protection program to address the potential for fires that could cause the release or spread of radioactive materials onsite or result in a localized radiological hazard. The inspectors reviewed the licensee's fire protection program for compliance with regulatory and license requirements. The inspectors reviewed the fire protection program as defined by Procedures SDS-FP1-PGM-0001, "SDS Fire Protection Program," Revision 8, and ENG-16, "Fire Protection Program," Revision 1.

Regulatory Guide 1.191, "Fire Protection Program for Nuclear Power Plants During Decommissioning and Permanent Shutdown," describes the methods acceptable to the NRC for complying with the NRC's regulations for fire protection programs for licensees in decommissioning. This regulatory guide is referenced in the licensee's implementing procedures, and the inspectors compared the licensee's fire protection program to the guidance provided in the regulatory guide.

The licensee's fire protection program records included a detailed fire hazards analysis. This document provided an analysis of the various plant areas and the fire protection requirements for those areas. The licensee fire protection program procedures described the staff responsibilities, program elements, and records requirements. In addition, procedures were developed to implement the various program attributes such as system operations, maintenance, design control, staffing, and training.

According to 10 CFR 50.48(f), the objectives of the fire protection program are to: (1) reasonably prevent fires that could result in a radiological hazard from occurring; (2) rapidly detect, control, and extinguish those fires that do occur; and (3) ensure that the risk of fire-induced radiological hazards to the public, environment and plant personnel is minimized. The inspectors compared the licensee's fire protection program against the objectives provided in the regulations.

To prevent fires from occurring, the licensee established and implemented administrative procedures for fire prevention control of transient combustible material and control of ignition sources. The inspectors conducted site tours to confirm that the procedure controls were being implemented. In particular, the inspectors toured the 63' elevations in the Unit 2 and Unit 3 containment building, where majority of the work activities are occurring. The inspectors concluded that the licensee was not effectively controlling combustible materials around ignition sources in these areas in accordance with procedure requirements.

The NRC evaluated the licensee's implementation of procedures and determined that the licensee's failure to implement the control of ignition source procedure was a violation of 10 CFR 50.48(f)(1), which requires, in part, that licensees maintain a fire protection program to address the potential for fires that could cause the release or spread of radioactive materials, including reasonable preventing these fires. The SDS Procedure, SDS-FP1-PCD-0015, "Control of Ignition Sources," Revision 8, Step 4.1.8, requires, to verify all Class "A" combustibles within 35 feet of hot work have been removed or are shielded with approved welding curtains, welding blankets, or welding pads."

Contrary to the above, on February 16, 2022, during the NRC inspectors walkdown of the Unit 2 Containment, the inspectors identified multiple pieces of Class "A" combustible material, to include non-covered wood and a plastic bag of radiation protection trash within the 35 feet of the hot work activity. The inspectors also identified multiple pieces of 4x4 wood planks directly under a steel plate where the crew was performing the hot work activity. The 4x4 wood planks were not covered in fire blankets to prevent sparks from catching the wood on fire.

This violation was evaluated to be a Severity Level IV violation using Section 6.3.d of the NRC Enforcement Policy, dated January 14, 2022, regarding the failure to implement procedures, which has a low safety significance.

Upon identification, the licensee entered the issue into its corrective action program as SDS Condition Report # SDS-001299. The licensee took the following immediate actions: (1) removed the combustible materials from the area; (2) performed walkdowns through containment to verify any other combustible materials that potentially could be in an area where hot work will be performed; and (3) performed a stand-down with craft personnel to reinforce expectations on combustible materials around hot work activities.

Since the licensee placed the deficiency into its corrective action program, the safety significance of the issue was determined to be low, and because the violation was not willful or repetitive; therefore, this violation was treated as a non-cited violation (NCV), consistent with Section 2.3.2.a of the NRC Enforcement Policy (NCV 05000362/2022001-01, Failure to verify all combustibles had been removed when performing hot work).

The inspectors reviewed the licensee's ability to rapidly detect, control, and extinguish fires. Fire suppression systems were in service to include automatic sprinkler systems and fire extinguishers located throughout the plant. The inspectors also reviewed the fire brigade staffing requirements, training records, and the memorandum of understanding with the offsite fire brigade. All staff training requirements were completed satisfactorily.

### 2.3 Conclusion

The NRC determined one Severity Level IV NCV of 10 CFR 50.48(f)(1), occurred based on the licensee's failure to verify all combustible materials had been removed within 35 feet of hot work activities.

## 3 **Exit Meeting Summary**

On February 17, 2022, the NRC inspectors 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 inspectors 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  
R. Kalman, SDS, Executive Sponsor  
W. Richter, SDS, Fire Marshall  
D. Arai, SCE, Senior Nuclear Engineer  
A. Hinojosa, SDS, Engineer

### **INSPECTION PROCEDURES USED**

IP 71801 Decommissioning Performance and Status Review at Permanently Shutdown Reactors  
  
IP 64704 Fire Protection Program at Permanently Shutdown Reactors

### **LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

#### **Opened/Closed**

05000362/2022001-01	NCV	Failure to verify all combustibles had been removed when performing hot work
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#### **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
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
PSDAR	Post-Shutdown Decommissioning Activities Report
SCEC	Southern California Edison Company
SDS	SONGS Decommissioning Solutions
SONGS	San Onofre Nuclear Generating Station
TS	Technical Specification