



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

December 18, 2020

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 05000361/2020-004 AND 05000362/2020-004

Dear Mr. Bauder:

This letter refers to the U.S. Nuclear Regulatory Commission's (NRC's) inspection conducted on November 16-19, 2020, 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 teleconference exit meeting conducted on December 1, 2020. 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 implementation of the maintenance program under the decommissioning general contractor. 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.

D. Bauder

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If you have any questions regarding this inspection report, please contact Stephanie Anderson at 817-200-1213, or the undersigned at 817-200-1249.

Sincerely,

Gregory G. Warnick, Chief
Reactor Inspection Branch
Division of Nuclear Materials Safety

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

Enclosure:
Inspection Report 05000361/2020-004;
05000362/2020-004
w/Attachment: Supplemental Information

SAN ONOFRE NUCLEAR GENERATING STATION - NRC INSPECTION
 REPORT 05000361/2020-004; 05000362/2020-004 - DATED DECEMBER 18,
 2020

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U.S. NUCLEAR REGULATORY COMMISSION REGION IV

Docket Nos.: 05000361; 05000362

License Nos.: NPF-10; NPF-15

Report Nos.: 05000361/2020-004; 05000362/2020-004

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 16-19, 2020

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

John P. Reynoso, Project Engineer
Reactor Inspection Branch
Division of Nuclear Materials Safety

Approved By: Gregory G. Warnick, Chief
Reactor Inspection Branch
Division of Nuclear Materials Safety

Enclosure

EXECUTIVE SUMMARY

San Onofre Nuclear Generating Station, Units 2 and 3
NRC Inspection Report 05000361/2020-004; 05000362/2020-004

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

- The licensee continued to conduct decommissioning in accordance with the general guidance provided in the Post-Shutdown Decommissioning Activities Report. The licensee implemented an oversight program to ensure that contractors conducted decommissioning work activities in accordance with procedural requirements as well as licensee expectations. (Section 1.2)

Maintenance and Surveillance at Permanently Shutdown Reactors

- The licensee's maintenance program was being conducted in a manner that resulted in the proper operation of radiation monitoring and effluent control equipment at the facility. (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). In the current plant configuration, the number of operable systems and credible accidents/transients is significantly less than for a plant authorized to operate the reactor or emplace or retain fuel in the reactor vessel. The most recent 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 (PDEP) 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 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 (TS), 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.

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

1.1 Inspection Scope

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

- Status of ongoing decommissioning activities and planning for future activities;
- Operability and functionality of systems necessary for safe decommissioning such as radioactive effluent monitoring and radiation protection monitors and alarms;
- Status of field conditions and decommissioning activities; and

- 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. Currently the site has entered 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, command center, Unit 3 containment, ISFSI Security Building, and the ISFSI pad. 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 (SSCs) that are necessary for safe decommissioning.

The inspectors conducted independent radiological surveys during site tours. The inspectors measured the ambient gamma exposure rates using a Thermo Scientific Radeye G (Serial No. 30728, Calibration Due Date 12/16/20). The inspectors observed and discussed radiological postings with the licensee including current radiological boundaries. Housekeeping was adequate for the work in progress.

The inspectors have been closely monitoring the beginning of active decommissioning activities at the site. The decommissioning contractor, SDS, is preparing the Unit 2 and 3 containments for the reactor vessel internal segmentation project that is scheduled to begin in the second quarter of 2021. To prepare for the segmentation project, SDS must dismantle any equipment that is in potential interference with the Reactor Vessel Internal Segmentation equipment. On November 3, 2020, SDS was performing hot work on the safety injection tank to remove the tank from the Unit 2 containment. During the hot work activity, molten slag created a breach in the torch line and ignited a small flame on the torch line which was immediately identified by the fire watch and quickly extinguished. The inspectors reviewed condition report (CR) # SDS-000930, and the associated corrective actions taken by the licensee and determined that the licensee adequately implemented the appropriate corrective actions.

While the inspectors were on-site, on November 16, 2020, SDS contractors were performing an excavation activity to isolate the fire protection header from the north and west fire loop near the Administrative Building, which is mostly unoccupied. While breaking slurry and concrete, the bobcat with an attached jackhammer contacted one phase of a 4kV power line causing an arc. Work was immediately stopped and placed in a safe condition, and no injuries occurred. The immediate result caused loss of power to the Central Processing Facility, turnstiles, and internet connectivity around certain work areas. Later that evening, the other 2 phases of the 4kV power line was lost, which resulted in power lost to the 1st and 2nd level of the Administrative Building and the previous Security Building.

The licensee's decommissioning contractor, SDS, wrote CR # SDS-000936 as required by the corrective action program. The immediate corrective actions taken were to notify SDS management, Decommissioning Agent Oversight personnel, ISFSI Shift Supervisor, and stopped all excavation work at the site. The licensee and SDS continue to investigate the "Near Miss" incident at the site, which included interviewing the personnel involved and performing an Apparent Cause Evaluation (ACE), in accordance with procedure SDS-RA1-PCD-0009, "Apparent Cause Evaluation," Revision 1.

The inspectors reviewed the immediate corrective actions taken by the licensee, performed a walkdown of the area, and interviewed SCE and SDS personnel on the events of the incident. The inspectors reviewed procedure SDS-WCI-PCD-0001, "Work Management and Planning," Revision 19 and design work package SDS-0-M-YA-1486, "Isolation of Fire Protection Header from the North and West Fire Loop," Revision 0, associated with the isolation of the fire protection header from the North and West fire loop. No regulatory issues were identified by the inspectors, but as part of review of the corrective action program, the inspectors plan to review the ACE and final corrective actions, which were still in progress at the end of this inspection. In conclusion, the inspectors did not identify any violations of regulatory requirements for this non-licensed activity.

1.3 Conclusion

The licensee continued to conduct decommissioning activities in accordance with the general guidance provided in the PSDAR. The licensee implemented an oversight program to ensure that contractors conducted decommissioning work activities in accordance with procedural requirements as well as licensee expectations.

2 Maintenance and Surveillance at Permanently Shutdown Reactors (62801)

2.1 Inspection Scope

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

- Maintenance and surveillance for SSCs are being conducted in a manner that results in proper operation of radiation monitoring and effluent control equipment;
- Evaluate the effectiveness of the licensee maintaining adequate material and structural integrity of SSCs important to safe decommissioning; and
- Licensee has an effective maintenance program that implements the maintenance rule requirement.

2.2 Observations and Findings

The inspectors reviewed SDS's implementation of its maintenance program at SONGS. The inspectors reviewed the maintenance program as described in procedure SDS-MA1-PGM-0001, "SDS Maintenance Program," Revision 6. The SDS maintenance program is responsible for preventative maintenance, corrective maintenance, installation of maintenance modifications, and other maintenance activities required by SDS programs, processes, and procedures.

The inspectors reviewed the training program detailed in SDS-MA1-PGM-0002, "SDS Maintenance Training Program Description," Revision 10. The inspectors reviewed the training matrix for the maintenance personnel and the maintenance supervisor against the requirements of procedure SDS-MA1-PGM-0002, "SDS Maintenance Training Program Description," Revision 10. The documentation adequately demonstrated that the individuals were qualified as required by the maintenance procedure requirements.

The inspectors reviewed SDS's implementation of its maintenance rule program. The inspectors reviewed procedure SDS-EN2-PGM-0001, "SDS Maintenance Rule Program," Revision 5, which was in effect until July 2020. SDS did maintain a list of systems and functions that were within the scope of the maintenance rule program. The inspectors reviewed the last maintenance rule report, SDS-EN2-RPT-0048, "Maintenance Rule Report," dated August 24, 2020. The inspectors reviewed SDS-EN2-PGM-0001, "SDS Maintenance Rule Program," Revision 6, which cancelled the maintenance rule program at SONGS Unit 2 and 3, since the site is undergoing decommissioning and the spent fuel was permanently transferred to dry cask storage and transported to the interim storage facility (i.e. ISFSI). With the transfer of the spent fuel to the ISFSI, there are no SSCs at SONGS Unit 2 or 3 that are associated with the storage, control, or maintenance of spent fuel, therefore, the maintenance rule program no longer applies to SONGS.

2.3 Conclusion

The licensee's maintenance program was being conducted in a manner that resulted in the proper operation of radiation monitoring and effluent control equipment at the facility.

3 **Exit Meeting Summary**

On December 1, 2020, 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, Regulatory Affairs Manager
L. Rafner, SCE, Regulatory Affairs
M. Morgan, SCE, Regulatory Affairs
J. McGaw, SCE, Regulatory Affairs
A. Hinojosa, SDS, Maintenance Rule Engineer
J. Cueva, SDS, Maintenance Supervisor
J. Sophie, SDS, Containment Systems Removal Project Manager
R. Kalman, SDS, Operations Project Director

INSPECTION PROCEDURES USED

IP 71801 Decommissioning Performance and Status Review at Permanently Shutdown Reactors
IP 62801 Maintenance and Surveillance at Permanently Shutdown Reactors

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened/Closed

None

Discussed

None

LIST OF ACRONYMS

ACE	Apparent Cause Evaluation
ADAMS	Agencywide Documents Access and Management System
ALARA	As Low As is Reasonably Achievable
CFR	<i>Code of Federal Regulations</i>
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
PDEP	Permanently Defueled Emergency Plan
PSDAR	Post-Shutdown Decommissioning Activities Report
SDS	SONGS Decommissioning Solutions
SCE	Southern California Edison Company
SFP	Spent Fuel Pool
SSCs	Structures, Systems, and Components
SONGS	San Onofre Nuclear Generating Station
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report