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

May 12, 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 05000361/2022-002 AND 05000362/2022-002

Dear Mr. Bauder:

This letter refers to the U.S. Nuclear Regulatory Commission (NRC) inspection conducted on April 18-21, 2022, at the San Onofre Nuclear Generating Station (SONGS), Units 2 and 3. The inspectors discussed the results of this inspection with you and other members of your staff during the exit meeting on April 21, 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 activities, performance of independent radiation measurements, and interviews with personnel. Specifically, the inspectors reviewed decommissioning activities for SONGS Units 2 and 3, effectiveness of the corrective action and quality assurance audit programs, and the implementation of the safety review and design change program. Within the scope of the inspection, no violations were identified and no response to this letter is 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 Dr. Robert Evans at 817-200-1234, or the undersigned at 817-200-1249.

Sincerely,

Signed by Warnick, Gregory
on 05/12/22

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

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

Enclosure:
Inspection Report 05000361/2022-002;
05000362/2022-002

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05000361/2022-002; 05000362/2022-002 - DATED MAY 12, 2022

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket Numbers:	05000361; 05000362
License Numbers:	NPF-10; NPF-15
Report Numbers:	05000361/2022-002; 05000362/2022-002
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:	April 18-21, 2022
Inspectors:	Stephanie G. Anderson, Senior Health Physicist Decommissioning, ISFSI, and Operating Reactor Branch Division of Radiological Safety and Security
	Robert J. Evans, PhD, CHP, PE, Senior 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 05000361/2022-002; 05000362/2022-002

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

- 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 licensee's contractor continued to be in a stand-down during the inspection due to a recent industrial-safety related accident. (Section 1.2)

Problem Identification and Resolution at Permanently Shutdown Reactors

- The licensee and its decommissioning general contractor established and implemented comprehensive corrective action programs to identify, resolve, and prevent conditions adverse to quality. The licensee and its contractor implemented quality assurance audit programs in accordance with regulatory and procedural requirements. The licensee and its contractor established and implemented employee concerns programs in accordance with site procedures. (Section 2.2)

Safety Reviews, Design Changes, and Modifications Permanently Shutdown Reactors

- The inspectors did not identify any regulatory issues associated with the training or selected samples for the safety reviews, design change, or modifications, and found that they are being performed in accordance with the applicable regulatory and procedural requirements. (Section 3.2)

Report Details

Summary of Plant Status

On June 12, 2013, the Southern California Edison Company (SCE), the licensee, formally notified the NRC that it had permanently ceased power operations at the San Onofre Nuclear Generating Station (SONGS), Units 2 and 3, effective June 7, 2013 (Agencywide Documents Access and Management System [ADAMS] Accession No. ML131640201). By letters dated June 28, 2013 (ML13183A391), and July 22, 2013 (ML13204A304), the licensee informed the NRC that the reactor fuel had been permanently removed from the Units 3 and 2 reactor vessels as of October 5, 2012, and July 18, 2013, respectively. The NRC subsequently issued the permanently defueled technical specifications on July 17, 2015 (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 (ML14269A033). The PSDAR outlines the planned decommissioning activities for SONGS, Units 2 and 3. The current version of the PSDAR is dated May 7, 2020 (ML20136A339). The chosen decommissioning alternative was DECON. DECON is the removal or decontamination of equipment, structures, or portions of the facility and site that contain radioactive contaminants to levels that permit termination of the license.

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

By letter dated August 7, 2020 (ML20227A044), the licensee certified that all spent fuel has been removed from both Units 2 and 3. Accordingly, SONGS entered their Independent Spent Fuel Storage Installation (ISFSI) Only Technical Specifications, Emergency Plan, and Security Plan on August 10, 2020.

Prior to the inspection, the licensee completed the removal of all greater-than-Class C (GTCC) material from the Unit 2 spent fuel pool (SFP). At the time of the inspection, the decommissioning general contractor, SDS, was in a safety stand-down due to recent industrial-safety related incidents. Limited work was in progress. The work in progress included transfer of equipment from Unit 2 to Unit 3 to commence with removal of GTCC material from the Unit 3 SFP in the next few weeks. The contractor, SDS, was also loading concrete and dry active wastes into railcars for offsite disposal.

Other activities in progress, before the stand-down, included segmentation of the reactor vessel internals inside the two containments. The contractor was preparing the containments for future large component removals. The contractor was also conducting equipment removal and decontamination activities in the safety, penetration, fuel handling, control, turbine, and containment buildings. Further, the contractor was preparing to seal the intake structure to isolate it from the ocean. Following installation of the seals, the contractor planned to clean and radiologically survey the intake structure. Finally, the contractor was preparing to modify the on-site rail spurs to support future decommissioning activities.

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

1.1 Inspection Scope

The objectives of this portion of the inspection were to: (1) evaluate the status of decommissioning and verify whether the licensee is conducting decommissioning and maintenance activities in accordance with regulatory and license requirements; (2) maintain awareness of work activities to assess licensee control and conduct of decommissioning; and (3) evaluate the licensee's decommissioning staffing, personnel qualifications, and training requirements, including that of the contracted workforce, to ensure that license requirements are met.

1.2 Observations and Findings

a. Observation of Activities

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 SDS were conducting decommissioning activities in accordance with the PSDAR. The inspectors discussed the current schedule with management staff and conducted site tours to observe the limited work in progress. Critical path activities include implementation of the reactor vessel internals segmentation work.

The inspectors toured the Unit 2 and Unit 3 containments and observed the status of recently completed work. The work included cutting of internal concrete floors and walls for future removal of large components and staging of contaminated equipment and radioactive trash for removal and disposal. Housekeeping was found to be adequate in both containments, and the high radiation areas were being managed in accordance with technical specifications requirements. Radiological controls were consistent with regulatory requirements in the two restricted areas.

Outside of containment, the work in progress included loading of railcars with concrete rubble for offsite disposal. The licensee was also transferring equipment from the Unit 2 SFP room to the Unit 3 SFP room for future work involving removal of GTCC wastes from the Unit 3 SFP.

The inspectors conducted independent radiological surveys during plant tours using a Thermo Radeye G survey meter (Serial Number 378 with calibration due date of December 15, 2022). The inspectors confirmed that the licensee had properly posted the areas based on these independent radiological survey measurements. No high radiation area was identified that was not already posted and controlled. No radiation areas were identified outside of the radiologically restricted and posted areas.

The inspectors attended several meetings and briefings during the inspection. The meetings included a routine Management Review Committee (MRC) meeting, a radiation protection staff briefing, and a plan of the day meeting. The meetings and briefings included safety messages, and participants discussed relevant topics of interest for the activities in progress. A questioning attitude was apparent by participants of the MRC meeting.

b. Review of Stop Work Order

On April 11, 2022, while working inside the radwaste building, two contractors fell into an open equipment vault, although both were tied off with fall protection equipment. The first contractor inadvertently fell into the vault while working at the leading edge. The act of the contractor falling caused a second contractor to also fall. The workers were quickly removed from the vault, and one employee was transferred to the hospital. In response, SDS initiated a work stand-down and issued Condition Report SDS-001353 to investigate the incident.

On April 13, 2022, SCE issued a stop work order to SDS of all activities at the site, with limited exceptions, until a root cause evaluation was completed and approved by SCE management. At the time of this inspection, only work required by regulations was required to continue at the site. Other limited work included demobilization of the GTCC equipment in the Unit 2 fuel handling building and limited shipment of bulk waste material. The stop work order was still in effect at the conclusion of the on-site inspection.

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 licensee's contractor continued to be in a stand-down during the inspection due to a recent industrial-safety related accident.

2 Problem Identification and Resolution at Permanently Shutdown Reactors (40801)

2.1 Inspection Scope

The objectives of this portion of the inspection were to: (1) evaluate the effectiveness of licensee controls in identifying, resolving and correcting issues in accordance with the quality assurance (QA) program and Title 10 to the *Code of Federal Regulations* (10 CFR) Part 50, Appendix B requirements; (2) determine whether audits and assessments are conducted in accordance with the QA program and regulatory requirements; and (3) confirm that the licensee has established, implemented, and performed management reviews of the safety-conscious work environment.

2.2 Observations and Findings

a. Corrective Action Programs

Corrective action programs are required by 10 CFR Part 50, Appendix B, Criterion VXI and Sections 16 of the licensee's Decommissioning Quality Assurance Program (DQAP), Revision 9, and SDS's Quality Assurance Program (QAP), Procedure SDS-QA1-PGM-0001, Revision 5. In accordance with the two QA plans, significant conditions adverse to quality shall require a cause determination, corrective actions will be implemented to prevent recurrence, and the conditions and associated corrective actions taken will be documented and reported to appropriate levels of management. In addition, reports of conditions adverse to quality are analyzed to identify negative performance trends. The inspectors reviewed the licensee's and SDS's implementation

of their corrective action programs with an emphasis on negative trends being identified by each program.

Details of the licensee's corrective action program were provided in Procedure ADM-5, "Corrective Action Program," Revision 3. Details of the contractor's program were provided in Procedure SDS-RA1-PGM-0002, "Corrective Action Program," Revision 7. The inspectors reviewed the two programs and interviewed staff responsible for implementing the programs. The inspectors verified that the licensee and its decommissioning general contractor established and implemented their respective corrective action programs.

According to the licensee's corrective action program coordinator, the program received 1032 action requests in 2021. Of this number, the program received 73 action requests that involved conditions adverse to quality. The coordinator conducted a trend analysis of the 2021 action requests as required by Section 6.10.2 of Procedure ADM-5. The results of the 2021 analysis were presented to the licensee's MRC in April 2022. The top two trend categories involved training and records. For 2022, the top trend was the declining performance of the radio system used to notify personnel of actions to take during an emergency.

The licensee's contractor conducted quarterly trend analyses in accordance with Section 4.11 of Procedure SDS-QA1-PGM-002. The SDS MRC reviewed the corrective action program metrics for the fourth quarter of 2021 in February 2022. The records indicate that the SDS corrective action program received 255 condition reports in 2021, with 56 reports involving conditions adverse to quality. The two top trend categories for 2021 included programs, plans and procedures followed by unsafe conditions. The causes of the events were primarily attributed to human performance issues including lack of self-verification and inadequate self-checking.

b. Quality Assurance Audit Programs

Quality assurance audits are required by 10 CFR Part 50, Appendix B, Criterion XVIII. The instructions for the audits were provided in Sections 18 of the licensee's DQAP and the SDS QAP. Details of the programs are provided in the licensee's Procedure NOD-2, "Audit and Assessment Program," Revision 5, and the contractor's Procedure SDS-QA1-PCD-0011, "Audit and Surveillance," Revision 8. The inspectors reviewed the licensee's and contractor's implementation of their respective QA audit programs and discussed the programs with licensee and contractor staff. The inspectors concluded that the licensee and its contractor continued to establish and implement comprehensive programs and conduct audits at the frequencies specified in the respective QA plans and procedures.

At the time of the inspection, the licensee's required audits included document and records control; maintenance, modifications, and calibrations; ISFSI controls; corrective action program; and procurement and material control. The contractor was required to conduct audits for those program areas for which governance was assumed. These audits included independent review of the QA program, waste management, and external suppliers. Since the removal of all spent fuel from the respective SFPs, SDS was no longer required to conduct routine QA audits of fire protection, environmental/Offsite Dose Calculation Manual/chemistry, radiation protection, and

some area surveys. Instead of audits, SDS elected to schedule and conduct QA surveillances of these program areas.

Both the licensee and its contractor developed annual audit schedules. The inspectors reviewed the two audit schedules for 2021-2023 and confirmed that the licensee and its contractor were scheduling and conducting audits and surveillances as required by the respective implementing procedures.

The inspectors reviewed selected audits and surveillances issued since the last inspection of this program area. The audits identified various weaknesses and offered recommendations as appropriate. The audits also identified noteworthy practices to highlight exemplary work practices.

In addition to the QA audit and surveillance programs, the licensee and SDS also implemented internal management assessments and independent management assessments of selected program areas. The inspectors reviewed selected assessments and confirmed that these reviews were being conducted in accordance with procedural requirements. In addition, the contractor proactively developed a new radiation protection program form to capture lessons learned, both positive and negative, when observing specific tasks. The new form would provide a record of positive observations, not just problems, for future trending.

c. Safety Conscious Work Environment

The NRC's Regulatory Issue Summary 2005-18 provides the guidance for establishing and maintaining a safety-conscious work environment. In support of positive nuclear safety cultures, both the licensee and SDS established employee concerns programs. The licensee's program was described in Procedure ADM-2, "Decommissioning Employee Concerns Program," Revision 2, and SDS's program was described in Procedure SDS-RA1-PGM-0004, "Employee Concerns," Revision 2.

The inspectors interviewed the employee concerns program managers for both the licensee and contractor. The topics discussed included number of cases received, topics reported, trending of topics, and methods used to interact with management and site staff. Both programs utilized employee surveys to identify potentially negative safety cultures, and both program managers occasionally provided presentations during staff meetings to reinforce management expectations for a positive nuclear safety culture. The inspectors determined that both programs were being managed in accordance with procedural requirements.

2.3 Conclusion

The licensee and its decommissioning general contractor established and implemented comprehensive corrective action programs to identify, resolve, and prevent conditions adverse to quality. The licensee and its contractor implemented QA audit programs in accordance with regulatory and procedural requirements. The licensee and its contractor established and implemented employee concerns programs in accordance with site procedures.

3 Safety Reviews, Design Changes, and Modifications at Permanently Shutdown Reactors (37801)

3.1 Inspection Scope

The objective for this portion of the inspection was to verify the licensee's safety review process was implemented in accordance with the requirements of 10 CFR 50.59, "Changes, tests, and experiments."

3.2 Observations and Findings

The inspectors reviewed various 10 CFR 50.59 applicability determinations and screens, performed by SDS and SCE in support of changes (modifications) to the facility. The inspectors were evaluating whether any facility design changes, tests, experiments or modifications were being effectively conducted, managed, and controlled. The inspectors also verified that no decommissioning activities involved any changes to technical specifications or the PSDAR. As part of this evaluation the inspectors also ensured the licensee was implementing an effective training program for any personnel involved in 10 CFR 50.59 screening and evaluations. Specifically, the inspectors reviewed eight documents including applicability determinations, design plans, screens, and evaluations. The documents were found to be well written and were screened or evaluated appropriately.

The inspectors reviewed SCE Procedure ENG-3, "10 CFR 50.59, 72.48, and 50.82 Program," Revision 1 and SDS Procedure SDS-RA1-PGM-002, "10 CFR 50.59 and 72.48 Program," Revision 3. The inspectors determined both SCE and SDS procedures used guidance from NEI 96-07, Revision 1, "Guidelines for 10 CFR 50.59 Implementation," to perform reviews on systems, structures, and components to determine whether any changes, tests, or experiments may be performed without obtaining prior NRC approval. The inspectors determined that the procedures provided instructions to assure proper implementation, review, and approval of design changes. The inspectors concluded that SCE and SDS reviewed the proposed activities under the 10 CFR 50.59 screening process in accordance with procedures and regulatory requirements and provided adequate explanation as to why an evaluation was not necessary.

3.3 Conclusion

The inspectors did not identify any regulatory issues associated with the training or selected samples for the safety reviews, design change, or modifications, and found that they are being performed in accordance with the applicable regulatory and procedural requirements.

4 Exit Meeting Summary

On April 21, 2022, the NRC inspectors presented the final inspection results to the 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 selected procedures and documents reviewed during the inspection, which were marked as proprietary.

SUPPLEMENTAL INSPECTION INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

M. Alvarado, SCE, Employee Concerns Investigator
A. Barbatti, SDS, Employee Concerns Program Manager
A. Bates, SCE, Regulatory Affairs and Oversight Manager
D. Bauder, SCE, Chief Nuclear Officer and Vice President Decommissioning
V. Bilovsky, SCE, Decommissioning Project Director
C. Boschetti, SDS Quality Manager
J. Carey, SCE, Corrective Action Program Manager
C. Cates, SCE, Senior Project Manager
R. Kalman, SDS, Project Executive Sponsor
J. Madigan, SCE, Nuclear Oversight and Safety Culture Manager
S. Mannon, SDS, Programs Director & Regulatory Manager
R. Quam, SCE, Security Manager
L. Rafner, SCE, Regulatory Affairs
J. Stephenson, SCE, ISFSI Engineering Manager

INSPECTION PROCEDURES USED

IP 71801	Decommissioning Performance and Status Review at Permanently Shutdown Reactors
IP 40801	Problem Identification and Resolution at Permanently Shutdown Reactors
IP 37801	Safety Reviews, Design Changes, and Modifications at Permanently Shutdown Reactors

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

None

Discussed

None

LIST OF ACRONYMS

ADAMS	Agencywide Documents Access and Management System
CFR	Code of Federal Regulations
DQAP	Decommissioning Quality Assurance Plan
GTCC	greater-than-Class C
ISFSI	Independent Spent Fuel Storage Installation
MRC	Management Review Committee
NRC	Nuclear Regulatory Commission
PSDAR	Post-Shutdown Decommissioning Activities Report
QA	quality assurance
SCE	Southern California Edison Company
SDS	SONGS Decommissioning Solutions
SDS QAP	SONGS Decommissioning Solutions Quality Assurance Program
SFP	spent fuel pool
SONGS	San Onofre Nuclear Generating Station