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 05000361/2020-001 AND 05000362/2020-001

Dear Mr. Bauder:

This letter refers to the U.S. Nuclear Regulatory Commission's (NRC's) inspection conducted on February 3-6, 2020, at the San Onofre Nuclear Generating Station (SONGS), Units 2 and 3. The NRC inspectors discussed the results of this inspection with members of your staff during a final onsite exit meeting conducted on February 6, 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, organization and management systems, implementation of the maintenance program under the decommissioning general contractor, and implementation of the safety review and design change program. 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 Stephanie Anderson at 817-200-1213, or the undersigned at 817-200-1249.

Sincerely,

/RA/

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 05000361/2020-001;
05000362/2020-001
w/Attachment: Supplemental Information
U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket Nos.: 05000361; 05000362
License Nos.: NPF-10; NPF-15
Report Nos.: 05000361/2020-001; 05000362/2020-001
Licensee: Southern California Edison Company
Facility: San Onofre Nuclear Generating Station, Units 2 and 3
Location: 5000 South Pacific Coast Highway, San Clemente, California
Inspection Dates: February 3-6, 2020
Inspectors:
Stephanie G. Anderson, Health Physicist
Reactor Inspection Branch
Division of Nuclear Materials Safety

Chris D. Steely, Health Physicist
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 05000361/2020-001; 05000362/2020-001

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

Organization, Management, and Cost Controls at Permanently Shutdown Reactors

- The licensee and its decommissioning general contractor developed and implemented programs for monitoring the safety conscious work environment and implementing the employee concerns programs. The licensee and its decommissioning general contractor established training programs that met regulatory, license, and procedural requirements. The licensee implemented oversight committees in accordance with the decommissioning quality assurance plan and procedural requirements as well as developing a procedure to evaluate regulatory information including NRC correspondence. (Section 1.2)

Maintenance and Surveillance at Permanently Shutdown Reactors

- The licensee's maintenance program was being conducted in a manner that resulted in safe storage of spent fuel and proper operation of radiation monitoring and effluent control equipment at the facility. (Section 2.2)

Safety Reviews, Design Changes, and Modifications at 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)
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.

On March 11, 2016, the NRC issued two revised facility operating licenses for SONGS, Units 2 and 3 (ADAMS Accession No. ML16055A522), in response to the licensee’s amendment request dated August 20, 2015 (ADAMS Accession No. ML15236A018). The license amendment allowed the licensee to revise its Updated Final Safety Analysis Report (UFSAR) to reflect the significant reduction of decay heat loads in the SONGS, Units 2 and 3, spent fuel pools (SFPs) resulting from the elapsed time since the two units were shut down in January 2012. The licensee shut down Unit 2 for a scheduled refueling outage but never restarted the unit, and the licensee shut down Unit 3 the same month in response to a steam generator tube leak. The revisions support design basis changes made by the licensee associated with the implementation of “cold and dark” plant status as described in the PSDAR.

The NRC approved exemptions from certain emergency planning requirements in 10 CFR 50.47(b), 10 CFR 50.47(c)(2), and 10 CFR Part 50, Appendix E, Section IV, which became effective on June 5, 2015 (ADAMS Accession Nos. ML15105A349 and ML15126A461). These license amendments revised the SONGS emergency action level (EAL) scheme and emergency plan, respectively, to reflect the low likelihood of any credible accident at the plant in its permanently shut down and defueled condition that could result in radiological releases requiring offsite protective measures. The changes to the license were to provide conformance with the related exemptions granted to the licensee by NRC letter dated June 4, 2015 (ADAMS
Accession No. ML15082A204). The changes were reviewed, and appropriate conforming changes were properly addressed in the applicable revision and sections of the SONGS UFSAR.

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 EAL scheme into ISFSI-only EALs for SONGS, Units 1, 2, and 3 ISFSI. The proposed changes would reflect the new status of the facility, as well as the reduced scope of potential radiological accidents, once all 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 would 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 UFSAR.

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, SFPs and its transfer to dry cask storage within an onsite ISFSI. These changes will more 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 once 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 will become effective as of the date the licensee submits a written notification to the NRC that all spent nuclear fuel assemblies have been transferred out of the SONGS SFPs and placed in storage within the onsite ISFSI. In addition, the changes were reviewed, and appropriate conforming changes were properly addressed in the applicable revision and section(s) of the SONGS UFSAR.

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 therefore begins active decommissioning activities at the site.

After the August 3, 2018, canister misalignment incident at SONGS ISFSI, the licensee committed on August 7, 2018, to an NRC review prior to resuming operations of spent fuel loading operations at SONGS. On July 15, 2019, SONGS resumed spent fuel transfer operations. At the time of this inspection, the licensee was loading and transferring the 49th canister unto the storage pad. The SDS organization had initiated planning for the site’s decommissioning activities, which are scheduled to commence once the spent fuel has been moved to the ISFSI.

1 Organization, Management, and Cost Controls at Permanently Shutdown Reactors (36801)

1.1 Inspection Scope

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

- Evaluate methods the licensee resolves employee/safety concerns and provides information to the employees;

- Regulatory requirements are properly implemented with respect to the site organization, staffing, and staff qualifications;

- Licensee appropriately implements the technical specifications and PSDAR; and

- Licensee decommissioning activities are initiated, sequenced, performed, and completed in a manner that is reasonably consistent with docketed planning and scheduling information.

1.2 Observations and Findings

The NRC issued guidance for implementing a safety conscious work environment (SCWE) in 1996. Details are provided in NRC Regulatory Information Summary RIS 2005-18, “Guidance for Establishing and Maintaining a SCWE.” The inspectors reviewed the licensee’s programs for capturing employee concerns and assessing the safety culture. The licensee’s program is described in Procedure SO123-XV-50.2, “Employee Concerns Program and Decommissioning Safety Culture Program,” Rev. 29.

As noted in the licensee’s procedure, onsite contractors will implement their own employee concerns program (ECP) in accordance with their specific procedures. SDS’s SCWE program is described in Procedure SDS-RA1-PGM-0003, “Nuclear Safety Culture Program,” Rev. 1, and the ECP is described in Procedure SDS-RA1-PGM-004, “Employee Concerns Program,” Rev. 1.

In accordance with the licensee’s and its contractors’ procedures, periodic surveys will be performed to assess the safety culture at the site. The licensee’s contractors conducted an employee survey in 2019. The survey results indicated a strong awareness of the
program and it was noted by inspectors the presence of many ECP posters all over the site. Potential weaknesses were identified and were processed through the condition report process.

The licensee is also required to implement training programs per 10 CFR Parts 19, 50, and 72, as well as technical specifications and site procedures. The inspectors reviewed the training programs established by the licensee and its decommissioning general contractor. Specifically, the inspectors reviewed SDS-RP1-PGM-4000, "General Employee Radiation Worker Training Program Description," Rev. 8, 10 CFR Part 50.59 training and Certified Fuel Handler (CFH) training. Currently the site has 25 CFH with the last required requalification exam occurring in 2018. This is a biannual exam where one will be required in 2020 but the expectation is that the site will be IFSI only by the required date thus negating the need for such an exam. The inspectors evaluated that these site training programs were being implemented according to licensee procedures and regulatory requirements.

In accordance with Appendix G to the Decommissioning Quality Assurance Plan (DQAP), the licensee established committees to provide oversight of licensed activities. The Nuclear Oversight Board serves the SCE Chief Nuclear Officer with an independent overview of selected decommissioning activities. The board functions in an advisory capacity. The Onsite Review Committee serves the Chief Nuclear Officer with onsite review of decommissioning activities on matters of nuclear safety. The licensee's Procedures SO123-XV-60.1, "Onsite Review Committee (OSRC)," Rev. 16, and SO123-XII-18.17, "Nuclear Oversight Board Functions and Responsibilities," Rev. 7, address the responsibilities and functions of these two organizations. In summary, the licensee implemented these oversight committees in accordance with quality assurance plan and procedural requirements.

The Nuclear Oversight Board met twice a year, most recently in April and October 2019. The board provided meaningful comments to licensee management regarding topics such as worker opinion surveys, decommissioning oversight, and corrective action programs. The Nuclear Oversight Board provided management with candid observations of site performance and identified areas where management attention was required.

The inspectors held a meeting with both SCE and SDS decommissioning activities planning and management to discussion deconstruction activities through the remainder of 2020 and into the first quarter of 2021. Based on licensee tracking tools and the level of management involvement, the inspectors determined that the licensee was planning and sequencing activities in a manner that was reasonably consistent with the PSDAR. The inspectors did not review the cost assessment associated with the activities, because that particular review is performed by NRC Headquarters.

The inspectors reviewed the licensee's program for evaluating regulatory information. The licensee developed Procedure SO123-XXX-6.2, "Processing of Incoming Nuclear Regulatory Documents," Rev. 16, to establish consistent and auditable methods for processing incoming nuclear regulatory documents. The documents included NRC correspondence, Federal Register notices, and Nuclear Energy Institute documents. The inspectors determined that the licensee had developed a procedure to evaluate regulatory information including NRC correspondence.
1.3 Conclusion

The licensee and its decommissioning general contractor developed and implemented programs for monitoring the SCWE and implementing the ECP. The licensee and its decommissioning general contractor established training programs that met regulatory, license, and procedural requirements. The licensee implemented oversight committees in accordance with the DQAP and procedural requirements as well as developing a procedure to evaluate regulatory information including NRC correspondence.

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 structures, systems, and components (SSCs) are being conducted in a manner that results in safe storage of spent fuel and 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,” Rev. 5. The SDS maintenance program is responsible for technical specification surveillances, 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 Procedure SDS-MA1-PGM-0002, “SDS Maintenance Training Program Description,” Rev. 9. The procedure required maintenance personnel to meet the training requirements and qualifications as required by ANSI N18.1-1971. The inspectors reviewed the training matrix for the maintenance personnel and the maintenance supervisor against the requirements of Procedure SDS-MA1-PGM-0002, Rev. 9. The documentation adequately demonstrated that the individuals were qualified as required by ANSI N18.1-1971 and the maintenance procedure requirements.

The inspectors reviewed maintenance procedures for surveillances and calibrations required to support the radiation monitoring and effluent control equipment at the facility. The procedures required interface with the Command Center, notification to the Shift Manager, and generation of a condition report if a surveillance failed, and referenced the control of measurement and test equipment as required. The inspectors reviewed completed routine maintenance work Package Number SDS-0117-44767-5, “92 Day
Liquid Effluent Radiation Monitor CF 30003045." The 92-day surveillance was completed satisfactorily on November 19, 2019. The inspectors also reviewed completed routine maintenance work package Number SDS-0117-74941-1, "Radwaste Discharge to Circ. Water Radiation 3003046." The completed surveillance was completed satisfactorily on April 1, 2019.

The inspectors also reviewed the two recent Liquid Batch Releases at the site. The licensee and SDS personnel worked together on December 19, 2019, and January 16, 2020 to release operational wastewater into the ocean. The inspectors reviewed the SONGS Release Permit #0L-002-0, "Unit 2/3 Batch Liquid Pre-Release Report," dated January 13, 2020, and SONGS Release Report #0L-002-0, "Unit 2/3 Batch Liquid Post-Release Report," dated January 28, 2020. The licensee released 19,646 gallons of wastewater in accordance with NRC 10 CFR 20 Regulatory limits. The inspectors also completed a full walkthrough of the equipment that was used to release the wastewater. The licensee used Procedure SO23-8-7, "Simplified Release of Miscellaneous Waste Evaporator Condensate Monitor Tank T-076," Rev. 37, to perform the releases as required by procedure and permit.

The inspectors reviewed SDS’s implementation of its maintenance rule program. The inspectors reviewed Procedure SDS-EN2-PGM-0001, "SDS Maintenance Rule Program," Rev. 5. SDS maintained 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-0040, dated January 16, 2020. In the maintenance rule report, no SSCs were being considered for goal setting.

2.3 Conclusion

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

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

3.1 Inspection Scope

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

- Determination that licensee procedures and processes conform to the regulations and guidance associated with 10 CFR 50.59;

- Implementation of a sampling of design change modifications to verify that procedures and controls were followed;

- Verify that the applicable changes were effectively implemented in the plant and in plant procedures, drawings, and training programs if applicable; and

- Verify that the changes made under 10 CFR 50.59 did not require prior NRC approval.
3.2 Observations and Findings

The inspectors reviewed two 10 CFR 50.59 applicability determinations and screens, performed by 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. SCE performed the 10 CFR 50.59 reviews in accordance with Procedure SO123-XXIV-10.1, “Engineering Design Control Process – NECPs,” Rev. 44. The following SCE design change packages were reviewed:

- Alternative Demineralized Water Supply for Fuel Transfer Operations
- Pinhole Leak on Spent Fuel Pool Make-up Line

SDS performed the 10 CFR 50.59 reviews in accordance with Procedure SDS-RA1-PGM-002, “10 CFR 50.59 and 72.48 Program,” Rev. 2. The inspectors reviewed the following SDS 10 CFR 50.59 screens, performed in support of changes (modifications) to the facility:


The inspectors determined both SCE and SDS procedures used guidance from NEI 96-07, Utility Services Alliance 10 CFR 50.59 Resource Manual 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.

The inspectors also reviewed Procedure SO-23-XXI-TRN, “Conduct of Training,” Rev. 14, SCE and SDS 50.59 training presentations and attendance check lists in order to determine that both SCE and SDS are effective implementing a 10 CFR 50.59 training program.

3.3 Conclusions

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.
Exit Meeting Summary

On February 6, 2020, the NRC inspectors presented the final inspection results to Mr. Doug Bauder, Vice President and Chief Nuclear Officer 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
C. Cates, SCE Manager of Employee Concerns
L. Chou, SDS, Licensing Engineer
J. Janke, SCE, Operations Manager
M. Reitzler, SDS, Maintenance Manager
C. Aung, SDS, Chemistry Manager
R. Kalman, SDS, Operations Project Director
L. Rafner, SCE, Regulatory Affairs
M. Morgan, SCE, Regulatory Affairs

INSPECTION PROCEDURES USED
IP 36801 Organization, Management, and Cost Controls at Permanently Shutdown Reactors
IP 62801 Maintenance and Surveillance at Permanently Shutdown Reactors
IP 37801 Safety Reviews, Design Changes, and Modifications at Permanently Shutdown Reactors

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED
Opened/Closed
None

Discussed
None

LIST OF ACRONYMS
ADAMS Agencywide Documents Access and Management System
ALARA As Low As is Reasonably Achievable
CFH Certified Fuel Handler
CFR Code of Federal Regulations
CSLC California State Lands Commission
EAL Emergency Action Level
ECP Employee Concerns Program
ISFSI Independent Spent Fuel Storage Installation
LQRW Liquid RadWaste
NRC Nuclear Regulatory Commission
PDEP Permanently Defueled Emergency Plan
PSDAR Post-Shutdown Decommissioning Activities Report
REV Revision
SDS SONGS Decommissioning Solutions
SCE Southern California Edison Company
SCWE Safety Conscious Work Environment
SFP Spent Fuel Pool
SONGS San Onofre Nuclear Generating Station
SSC Structures, Systems, Components
UFSAR Updated Final Safety Analysis Report

Attachment