



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

May 30, 2019

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 05000206/2019-002, 05000361/2019-002, AND 05000362/2019-002

Dear Mr. Bauder:

This letter refers to the U.S. Nuclear Regulatory Commission's (NRC's) inspection conducted on April 22-25, 2019, at the San Onofre Nuclear Generating Station (SONGS), Units 1, 2, and 3. The NRC inspectors discussed the results of this inspection with you, and then with other members of your staff during a final onsite exit meeting conducted on April 25, 2019. 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 the Corrective Action Program procedures and representative records, observations of site meetings, and interviews with personnel. Specifically, the inspectors reviewed the corrective action program activities for SONGS, Units 1, 2, and 3. 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.

D. Bauder

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If you have any questions regarding this inspection report, please contact Chris Steely at 817-200-1432, or the undersigned at 817-200-1223.

Sincerely,

*/RA/*

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

Docket Nos.: 50-206; 50-361; 50-362  
License Nos.: DPR-13; NPF-10; NPF-15

Enclosure:  
Inspection Report 05000206/2019-002;  
05000361/2019-002; 05000362/2019-002  
w/Attachment: Supplemental Information

**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION IV**

Docket Nos.: 05000206; 05000361; 05000362

License Nos.: DPR-13; NPF-10; NPF-15

Report Nos.: 05000206/2019-002; 05000361/2019-002; 05000362/2019-002

Licensee: Southern California Edison Company

Facility: San Onofre Nuclear Generating Station, Units 1, 2, and 3

Location: 5000 South Pacific Coast Highway, San Clemente, California

Inspection Dates: April 22-25, 2019

Inspectors: Chris D. Steely, Health Physicist  
Reactor Inspection Branch  
Division of Nuclear Materials Safety

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

W. Chris Smith, 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 1, 2 and 3  
NRC Inspection Report 05000206/2019-002; 05000361/2019-002; 05000362/2019-002

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 1, 2 and 3. In summary, the licensee was conducting these activities in accordance with site procedures, license requirements, and applicable NRC regulations.

### Self-Assessment, Auditing, and Corrective Action at Permanently Shutdown Reactors

The licensee's management, contractor oversight, and onsite review committees are being conducted and maintained in accordance with appropriate regulatory requirements as prescribed by the SONGS Decommissioning Quality Assurance Program (DQAP). Both the licensee and decommissioning general contractor have established appropriate oversight and controls for the programs managed by each entity to ensure that activities are being conducted in accordance with the applicable regulatory requirements, license conditions, DQAP procedures, and contractual obligations (as applicable). (Section 1.2)

## 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 document 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. The PSDAR was reviewed by the NRC inspectors in a letter dated August 20, 2015 (ADAMS Accession No. ML15204A383). 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 for 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 pool (SFP) resulting from the elapsed time since the permanent shutdown of the units in 2012. 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 an 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. This activity is currently scheduled for completion during 2019.

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 EAL 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 in a 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 permanently moved to the SONGS ISFSI, which is currently scheduled for completion in 2019.

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 will be known as SONGS Decommissioning Solutions (SDS). The SDS organization will manage 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) will perform the California Environmental Quality Act review, which is triggered by the need to establish the final disposition for the offshore conduits that are under a CSLC lease. The Draft Environmental Impact Report was published for public comment in June 2018, and the public review period closed for comments on August 30, 2018.

After the August 3, 2018, canister misalignment incident at SONGS ISFSI, the licensee committed on August 7, 2018, to a NRC review prior to resuming operations of the spent fuel loading operations at SONGS. At the time of this inspection, there were no loading operations in effect. 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 new ISFSI expansion and the licensee has received the required permit from the CSLC.

## **1 Self-Assessment, Auditing, And Corrective Action At Permanently Shutdown Reactors (40801)**

### **1.1 Inspection Scope**

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

- Administrative procedures prescribed actions for the identification, evaluation, and resolution of problems;
- Licensee procedures prescribed thresholds for the performance of self-assessments, audits, and surveillances;
- Licensee management reviewed self-assessments, audits, and corrective actions to remain knowledgeable of plant performance;
- Issues or problems were identified and corrected in accordance with the licensee's corrective action program (CAP);
- Quality assurance personnel audited changes in the status of decommissioning and licensee organization; and
- Licensee management observed maintenance and surveillance activities, operations evolutions and training.

### **1.2 Observations and Findings**

The SONGS Decommissioning Quality Assurance Program (DQAP) establishes the necessary measures to assure that conditions adverse to quality are promptly identified, evaluated, classified, controlled, documented, and corrected. Conditions are evaluated for their impact on the operability of important-to-safety structures, systems, and components to ensure that the final condition does not adversely affect safety, operation, or maintenance of the item or service. The DQAP requires personnel to identify known conditions adverse to quality to determine what corrective actions are appropriate. Reports of conditions adverse to quality are analyzed to identify trends. The results of evaluations of conditions adverse to quality are analyzed, documented, and reported in accordance with applicable procedures. Significant conditions adverse to quality are documented and reported to responsible management.

The inspectors reviewed SDS-RAI-PGM-0005, "Corrective Action Program", Revision (Rev.) 3 and SO123-XV-50, "Corrective Action Program", Rev. 43 which governs the programs for SDS and Southern California Edison (SCE) respectively. Both procedures are effective in ensuring that conditions adverse to quality are identified, analyzed, processed, reviewed and trended as appropriate. SCE processes all action requests (ARs) through there Plant Screening Committee (PSC), then for significance level 1, 2,

and 3 CAP products, they are reviewed at the SCE Management Review Committee (MRC). SDS processes all condition reports (CRs) through their project screening committee, then for significance level 1, 2, and 3\* CRs, they are reviewed in the SDS MRC. SDS is the contractor for decommissioning activities for SCE. They must have a SCE representative to participate as a voting quorum member when the SDS MRC reviews causal analysis evaluations for conditions adverse to quality, significant conditions adverse to quality, root cause evaluations, apparent cause evaluations and issue reviews. The respective PSCs and MRCs are appropriately made up of individuals from varying disciplines to include health physics, operations, maintenance, radiation protection, contractors and management oversight. The inspectors sat in on one SDS MRC meeting and two SCE PSC meeting and noted good discussion and participation from all involved.

The SONGS DQAP also establishes the necessary guidance to implement audits and verify that activities covered by the DQAP are performed in accordance with documented requirements. Internal audits are conducted to determine that the program and procedures being audited comply with the DQAP. Internal audits are performed with a frequency commensurate with safety significance and in such a manner as to ensure that an audit of all applicable quality assurance program elements is completed for each functional area within a 24-month cycle with a 90-day grace period.

The SCE audit program is implemented by Procedure SO123-XII-18.1, "Audit Program Implementation," Rev. 28. SDS Implements their audit and surveillance program in accordance with SDS-QA1-PCD-0011, "Audit and Surveillance", Rev. 3. SCE's and SDS's programs both are in accordance with SONGS DQAP. SDS performs audits when SDS has assumed governance role of the program as defined in SDS-PM1-PLN-0011, "Transition and Mobilization Plan", Rev. 3. SDS will perform a full eighteen criteria quality assurance audit in July 2019, which will be two years since SDS assumed the governance role of some of the programs as part of the transition. SCE is performing eight audits in accordance with the SCE Audit Program for 2018.

The inspectors reviewed a sample of audit plans, checklists, and audit reports to evaluate the implementation of the audit programs. The inspectors noted that the SCE audit checklist for the Radiation Protection and Radioactive Waste Program, SCES-002-19 Audit had significant details to inform the auditors of the methods of verification and reference documents to use while performing the audit. The final audit report for the Radiation Protection and Radioactive Waste Program Audit stated clearly the two findings and five weaknesses identified during the audit. ARs were written for each item identified and were within SCE CAP process during the time of the inspection. The inspectors reviewed the similar audit report for the SDS Radiation Protection Program and Radioactive Waste Program, A-19-002, and verified that SDS had prepared and approved a quality audit plan that identified the audit scope, purpose, and applicable criteria before the initiation of the audit activity. The inspectors confirmed that the audit report contained a summary of the audit results, conclusions, and effectiveness of the quality program.

The inspectors verified that the SONGS DQAP and associated procedures provide guidance for training of auditors and lead auditors. These documents prescribe the minimum experience and training requirements for auditors and lead auditors, and ensured that they be certified based on education, experience, training, examination, audit participation, and communication skills. The inspectors reviewed a sample of the training and qualification records of the SCE and SDS auditors and lead auditors and confirmed that the auditing personnel had completed all required training and maintained qualification



and certification in accordance with the licensee's policies and procedures. The inspectors also verified that audit teams were sufficiently qualified to evaluate areas within the scope of the audit.

During this inspection the inspectors reviewed the self-assessment process as they apply to both SCE and SDS. The inspectors reviewed the SCE and SDS procedures that govern the implementation of the audit and assessment programs to verify compliance with the requirements in the DQAP and technical specifications, and to ensure that significant decommissioning activities are independently and effectively reviewed. Specifically, the inspectors reviewed the licensee's and its contractor SDS, self-assessment and audit Procedures SDS-RAI-PCD-0004, "Focused Area Self-Assessment", Rev. 2, and SO123-XV-SA1, "Self-Assessment Process", Rev. 10. The inspectors evaluated the effectiveness of licensee controls in identifying, resolving, and preventing issues that degrade safety or the quality of decommissioning. The inspectors reviewed all four of the SDS's internal self-assessments that were performed after the Phase 1 transition of the Transition and Mobilization Plan. The inspectors reviewed three of the licensee's self-assessments, two in the emergency preparedness program and one in the special nuclear material accountability program. Additionally, the inspectors reviewed apparent cause evaluations, quality assurance surveillances, and nuclear oversight assessments to evaluate compliance with the licensee's program and technical requirements.

The inspectors also reviewed a sample of internal assessments and quality assurance surveillance reports to evaluate the implementation of the SONGS self-assessment program and verified that the licensee had prepared and approved plans that identify the assessment scope, focus, and applicable criteria before the initiation of the assessment activity. The inspectors confirmed that the assessment reports contained a review of the relevant decommissioning activities and associated documentation. For assessments and audits that resulted in findings, the inspectors verified that the licensee had established a plan for corrective action, that the NRC had reviewed and approved the corrective action, and then verified its satisfactory completion and proper documentation.

The inspectors noted that nearly all the self-assessments of a program area were performed by SDS, since they assumed governance of those areas per the Transition and Mobilization Plan in 2017. As a result, the only programs that the licensee, SCE, performs self-assessments for are emergency preparedness and special nuclear material accountability as required by regulations. While the bulk of the program area self-assessments have been turned over to SDS, SCE retains oversight of all the program areas, participates in the self-assessments, and reviews any findings.

Finally, the inspectors conducted several interviews with SCE and SDS personnel, including engineers, quality assurance personnel, audit and self-assessment representatives to verify that all SCE and SDS personnel are knowledgeable of the corrective action process, when and how to enter into the process, and understand the types of disposition that can result from an AR/CR. The inspectors concluded that all the SCE and SDS personnel interviewed had the required knowledge of the SCE and SDS corrective action programs.

### 1.3 Conclusion

The licensee is implementing its corrective action program in accordance with appropriate regulatory requirements as prescribed by the SONGS DQAP and providing adequate oversight of the SDS corrective action program to ensure that any issues identified by contractor staff are appropriately documented, tracked, and dispositioned by the proper personnel. Based on interviews, documents and activities observed, the inspectors determined the licensee is implementing its policies and procedures associated with the corrective action program in accordance with applicable regulatory requirements, license conditions, and DQAP procedures.

## **2 Exit Meeting Summary**

On April 25, 2019, the NRC inspectors presented the final inspection results to yourself, 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  
J. Peattie, SCE, Manager, Maintenance, Work Control, & CAP  
J. Kerry, SCE, CAP Manager  
S. Mannon, SDS, Regulatory Affairs  
M. Chavez, SDS, Quality Engineer  
T. Bejma, SDS, Quality Assurance Manager  
D. Evans, SCE, Regulatory Affairs

### **INSPECTION PROCEDURES USED**

IP 40801 Self-Assessment, Auditing, and Corrective Action 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
ARs	Action Requests
CAP	Corrective Action Program
CFR	<i>Code of Federal Regulations</i>
CRs	Condition Reports
CSLC	California State Lands Commission
DQAP	Decommissioning Quality Assurance Program
EP	Emergency Preparedness
IOEP	ISFSI Only Emergency Plan
ISFSI	Independent Spent Fuel Storage Installation
MRC	Management Review Committee
NRC	Nuclear Regulatory Commission
PDEP	Permanently Defueled Emergency Plan
PSC	Plant Screening Committee
PSDAR	Post-Shutdown Decommissioning Activities Report
SDS	SONGS Decommissioning Solutions
SCE	Southern California Edison Company
SFP	Spent Fuel Pool
SONGS	San Onofre Nuclear Generating Station
UFSAR	Updated Final Safety Analysis Report

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 05000206/2019-002; 05000361/2019-002; 05000362/2019-002 - DATED MAY 30, 2019

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