



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

March 18, 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 05000206/2019-001, 05000361/2019-001, AND 05000362/2019-001

Dear Mr. Bauder:

This letter refers to the U.S. Nuclear Regulatory Commission (NRC) inspection conducted on February 25-28, 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 members of your staff during a final exit meeting conducted on February 28, 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 licenses. Within these areas, the inspection consisted of selected examination of procedures and representative records, observations of activities, performance of independent radiation measurements, and interviews with personnel. Specifically, the inspectors reviewed decommissioning planning activities for SONGS Units 1, 2, and 3, controls for spent fuel safety, implementation of the maintenance program under the decommissioning general contractor, and organization and management systems. 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 817-200-1151.

Sincerely,

/RA/

Janine F. Katanic, PhD, CHP, Chief
Fuel Cycle and Decommissioning Branch
Division of Nuclear Materials Safety

Docket Nos.: 050-00206; 050-00361; 050-00362

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

Enclosure:

Inspection Report 050-00206/2019-001;
050-00361/2019-001; 050-00362/2019-001

w/Attachment: Supplemental Information

**U.S. NUCLEAR REGULATORY COMMISSION
REGION IV**

Docket Nos.: 050-00206; 050-00361; 050-00362

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

Report Nos.: 05000206/2019-001; 05000361/2019-001; 05000362/2019-001

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: February 25-28, 2019

Inspectors: Stephanie G. Anderson, Health Physicist
Fuel Cycle and Decommissioning Branch
Division of Nuclear Materials Safety

Robert J. Evans, PhD, CHP, PE, Senior Health Physicist
Fuel Cycle and Decommissioning Branch
Division of Nuclear Materials Safety

Approved By: Janine F. Katanic, PhD, CHP, Chief
Fuel Cycle and Decommissioning Branch
Division of Nuclear Materials Safety

Enclosure

EXECUTIVE SUMMARY

San Onofre Nuclear Generating Station, Units 1, 2, and 3
NRC Inspection Report 05000206/2019-001; 05000361/2019-001; 05000362/2019-001

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 1, 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. The licensee implemented operational, radiological, and housekeeping programs to ensure safe storage of spent fuel. (Section 1.2)

Spent Fuel Pool Safety at Permanently Shutdown Reactors

- The licensee was maintaining the Units 2 and 3 spent fuel pools in accordance with technical specifications and procedural requirements. The licensee was safely storing spent fuel in wet storage. (Section 2.2)

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 program. The licensee and its decommissioning general contractor established training programs that met regulatory, license, and procedural requirements. The licensee implemented two oversight committees in accordance with quality assurance plan and procedural requirements. The licensee developed a procedure to evaluate regulatory information including NRC correspondence. (Section 3.2)

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 4.2)

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.

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 (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 (ML16355A014), and approved by the NRC by letter dated January 9, 2018 (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) 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. On February 11, 2019, the Final Environmental Impact Report was released by the CSLC. The CSLC will hold 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.

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. At the time of this inspection, there were no spent fuel transfer operations in progress. 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 and the licensee has received the required permit from the CSLC.

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, SFP level and temperature control, and radiation protection monitors and alarms;
- Status of field conditions and decommissioning activities; and
- Status of facility housekeeping.

1.2 Observations and Findings

a. Status of Decommissioning

The licensee submitted its PSDAR to the NRC on September 23, 2014, as required by 10 CFR 50.82(a)(4). The PSDAR provides a description of the planned decommissioning activities and a proposed schedule for each phase of decommissioning. The licensee and its contractors have completed a majority of the activities described under Period 1, "Transition to Decommissioning," and Period 2, "Decommissioning Planning and Site Modifications." The licensee and its contractors (primarily SDS), were planning for the third period, "Decommissioning Preparations and Reactor Internal Segmentation." In general, the licensee and its contractors were implementing the decommissioning program in accordance with the statements provided in the PSDAR.

The inspectors discussed with licensee staff its plans to update the 2014 PSDAR. The licensee plans to conduct certain activities differently or at different timeframes than specified in the 2014 PSDAR. Licensee representatives stated that it planned to revise the PSDAR in the near future to account for these changes in activities and associated implementation schedules.

The inspectors reviewed the status of the Unit 1 Reactor Pressure Vessel (RPV) canister. No work activities were being conducted on the Unit 1 RPV canister at the time of the inspection. The next steps that SDS plans to conduct to complete the project to modify the Unit 1 RPV canister include coating the canister with a rust inhibitor, removing the

scaffolding, and laser scanning the Unit 1 RPV canister to verify it meets the railroad clearance requirements for shipment by rail.

b. Control of Facility Activities

Section II.8 of the PSDAR states that plant management and staffing levels have been and continue to be adjusted to reflect the transition from an operating plant to a plant in decommissioning. Although the licensee remains responsible for decommissioning, the majority of the decommissioning work will be conducted by the licensee's decommissioning general contractor (SDS). The inspectors reviewed the licensee's program for oversight of contractors.

Details about the licensee's oversight program are provided in procedure SO123-XV-93, "Contractor Oversight," Revision (Rev.) 3. This procedure applied to oversight of contractors and subcontractors who have a full-time, onsite presence and are directly involved in decommissioning activities. The oversight program does not apply to programs that will not be managed by contractors including nuclear security, certain operational activities, site access, licensing, regulatory affairs, and environmental preparedness.

The licensee expects to assign approximately 30 staff or contractors to the 21 defined positions needed to implement the oversight program. The licensee developed desktop guides that provide detailed guidance for implementing the oversight program. Oversight will include a combination of document reviews (work packages, for example) as well as field observations. The licensee implemented an oversight playbook and assessment schedule to track and schedule the oversight program. Further, the licensee conducts routine status meetings every two weeks. The meeting topics include oversight metrics, program area assignments, oversight summaries and observations, corrective action program performance indicators, and future work activities.

In summary, the licensee implemented an oversight program that appeared to be an effective mechanism for ensuring that contractors conducted decommissioning activities consistent with decommissioning program requirements.

c. Control Room Observations and Plant Tours

The inspectors conducted site tours, including tours of the main control room. The control room staffing met or exceeded technical specifications requirements during the inspection period. The operators were knowledgeable of plant conditions, including the status of the SFPs. The operators continuously monitored critical plant parameters including the SFP water levels. Procedures were available in the control room for use by the operators.

The inspectors attended meetings that included discussion of decommissioning activities. The meetings provided participants with useful information about the daily status of 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 12/12/19). The inspectors did not identify any radiation area that was not already identified and posted by the licensee.

The observed radiological postings were in compliance with regulatory requirements. Radiological boundaries were well defined. Housekeeping was adequate for the work in progress.

1.3 Conclusion

The licensee continued to conduct decommissioning 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. The licensee implemented operational, radiological, and housekeeping programs to ensure safe storage of spent fuel.

2 Spent Fuel Pool Safety at Permanently Shutdown Reactors (60801)

2.1 Inspection Scope

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

- Design, operational, and administrative measures are in place to prevent a substantial reduction in SFP coolant inventory under normal and accident conditions;
- SFP instrumentation, alarms, and leakage detection systems are adequate to assure safe wet storage of spent fuel;
- SFP water chemistry and cleanliness control programs maintain water purity standards, limits on radionuclide concentration, and minimum boron concentration in accordance with technical specification requirements;
- Criticality controls are consistent with the applicable nuclear criticality safety analyses;
- Procedures, drawings, and PSDAR descriptions and operations regarding SFP operation and power supplies are adequate; and
- Problem identification issues related to SFP activities are entered into the corrective action program (CAP) at an appropriate threshold.

2.2 Observations and Findings

The technical specifications for Units 2 and 3 specify the limiting conditions of operation (LCO) in the fuel storage pools in order to maintain the fuel in a subcritical condition. The LCOs include Technical Specifications 3.1.1 which specify a minimum water level of 23 feet between the top of the fuel bundle and pool surface, and Technical Specifications 3.1.2 which states that boron concentrations will be maintained greater than or equal to 2,000 parts per million (ppm) in order to preserve the assumptions of the fuel handling accident analysis. The inspectors observed that the licensee maintained the SFP water levels at least 27 feet above of the top of the fuel bundle in both pools since the last inspection. The licensee was maintaining the two pool levels at 27 feet, 8 inches at the time of the inspection. The licensee maintained the boron concentrations

between 2600-2700 ppm since the last inspection. At the time of the inspection, the Units 2 and 3 boron concentrations were 2644 and 2630 ppm, respectively.

The SONGS UFSAR, Section 9.1.2.3, Safety Evaluation, required the licensee to maintain the SFP coolant temperature between 50° Fahrenheit (°F) and 160°F. At the time of the inspection, the inspectors observed SFP temperatures in Units 2 and 3 as 72.3°F and 73.5°F, respectively. The licensee's records indicate that the pool temperatures ranged from 72°F to 84.7°F since the last inspection. The pool temperatures were slightly elevated during December 2018 due to scheduled maintenance on the SFP island equipment. After the licensee returned the equipment to service, pool temperatures dropped accordingly.

Site procedure SDS-CH1-PCD-1001, "Chemical Control of Plant Systems and Consumable Materials, Control of Restricted Systems," Rev. 3, specifies the chemistry requirements for the SFPs. The procedure specifies the sampling requirements and normal ranges for various chemical constituents and gamma radiation isotopic activities. The chemical constituents included boron, chloride, fluoride, sulfate, conductivity, pH, and microbial activity. The inspectors reviewed the licensee's pool chemistry and radiological sampling records developed since the last inspection. The licensee sampled the two pools for the chemical and radiological parameters at the frequencies specified in the procedure. All sample results were less than the administrative limits specified in the procedure.

The inspectors observed the SFP island equipment in Units 2 and 3, reviewed the corrective actions generated for the SFP systems, and held discussions with the shift manager regarding the operational history of the equipment. The inspectors determined that the SFP island cooling and makeup systems were being operated in accordance with the applicable procedures. Instrumentation and alarms were installed to monitor critical pool and support equipment parameters. Plant parameters (pressure, flow, and temperature) were within the ranges specified in site procedures. The operators also maintained backup equipment in a functional condition in case the operating equipment were to fail.

The inspectors observed the radiation monitoring system in the Units 2 and 3 SFP handling building, in addition to the display and alarm capability in the Command Center using the command center data acquisition system. The inspectors reviewed SO23-3-2.11.3, "Spent Fuel Pool Cooling Island Off-Normal Actions," Rev. 5, and determined that the licensee had appropriate compensatory measures and procedures in place for responding to an event involving spent fuel safety. Makeup water sources were available, if needed for normal or emergency pool refill operations.

2.3 Conclusion

The licensee was maintaining the Units 2 and 3 SFPs in accordance with technical specifications and procedural requirements. The licensee was safely storing spent fuel in wet storage.

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

3.1 Inspection Scope

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

- Methods the licensee used to resolve employee/safety concerns and provide information to employees;
- Regulatory requirements are properly implemented with respect to 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.

3.2 Observations and Findings

a. Review of Employee Concerns Programs

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 & 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 employee surveys in 2018. The survey results indicated strong awareness of the ECP programs. Potential weaknesses included a perception of retaliation, reluctance to report issues of concerns, and timely resolution of issues through the condition report process. The survey administrators provided proposed corrective actions to address the neutral and potentially negative survey results.

The licensee's ECP procedure also requires its ECP investigator to create a communications strategy for the following year. The inspectors reviewed the communications strategy planned for 2019. The strategy included methods that workers can use to voice concerns and to communicate with the ECP investigator.

The inspectors concluded that the licensee and its decommissioning general contractor had developed programs for monitoring the SCWE and implementing the ECP. The programs met the intent of the NRC's SCWE policy, and the licensee and its contractors implemented the programs as required by site procedures.

b. Review of Training Programs

The licensee is 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.

The licensee was responsible for training workers who entered the owner-controlled and protected areas. SDS was responsible for training workers who entered the radiologically controlled areas. Details about the training programs were described in site procedures. The training program for access to the owner-controlled area included an informational hand-out and safety training. Protected area training included computer-based training with exam, fitness for duty screen, and behavioral observation assessment. Continuing (annual refresher) training included computer-based training with an exam. Training for radiologically controlled area access included initial training with an exam and practical factors training as necessary (for example, donning and doffing anti-contamination clothing). Specialized training was provided for supervisors, foreign material exclusion areas, and potential hostage situations. Additional training was required for shift managers/certified fuel handlers, certified operators, fuel movement and dry cask loading operations, engineering staff, maintenance staff, and security staff. These programs were described in separate training program descriptions.

In summary, the licensee and SDS established training programs that met regulatory, license, and procedural requirements.

c. Review of Oversight Committees

In accordance with Appendix G to the Decommissioning Quality Assurance Plan, 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 2018 and October 2018. 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 Onsite Review Committee met to discuss specific topics. This committee most recently convened in November 2018, December 2018, and February 2019. The committee members discussed topics involving spent fuel activities. The inspectors reviewed the meeting minutes for the Onsite Review Committee and concluded that the minutes provided information about the topics discussed and the reasons for any committee decisions.

d. Review of Licensee's Program for Evaluating Regulatory Information

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. During the inspection, the licensee's representatives concluded that the responsibilities for implementing this procedure were not clearly defined, and an Action Request was initiated to ensure that these responsibilities were defined and assigned. In summary, the licensee had developed a procedure to evaluate regulatory information including NRC correspondence.

3.3 Conclusions

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 two oversight committees in accordance with quality assurance plan and procedural requirements. The licensee developed a procedure to evaluate regulatory information including NRC correspondence.

4 Maintenance and Surveillance at Permanently Shutdown Reactors (62801)

4.1 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 conducted in a manner that results in safe storage of spent fuel and proper operation of radiation monitoring and effluent control equipment;
- Effectiveness of licensee to maintain adequate material and structural integrity of SSCs important to safe decommissioning; and
- Effective maintenance program that implements the maintenance rule requirement.

4.2 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. 4. The SDS maintenance

program is responsible for technical specification surveillances, preventative maintenance, corrective maintenance, and other maintenance activities required by SDS programs.

The inspectors reviewed the training program detailed in SDS-MA1-PGM-0002, "SDS Maintenance Training Program Description," Rev. 8. The procedure required maintenance personnel to meet the training requirements and qualifications as required by ANSI N18.1-1971. The inspectors reviewed the training records of three maintenance personnel and the maintenance supervisor against the requirements of Procedure SDS-MA1-PGM-0002, "SDS Maintenance Training Program Description," Rev. 8. The documentation adequately demonstrated that the individuals were qualified as required by ANSI N18.1-1971 and the maintenance procedure requirements.

The inspectors observed the maintenance personnel completing a maintenance activity involving the turbine building sump pump effluent channel functional test. The maintenance workers were using the work instructions as required to perform the test. The inspectors observed the use of peer checks, walking down the system, and having a questioning attitude prior to performing the work activities. When the maintenance personnel were challenged with a question from SCE Oversight personnel, the maintenance personnel stopped work, address the question with their supervisor, updated the work instruction, and completed the work in accordance with the updated work instruction.

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-0117-29563-5, "92 Day RMO Wide Range Gas Monitor for Unit 2 RY7865." The 92-day surveillance was completed satisfactorily on February 7, 2019.

The inspectors reviewed SDS's implementation of its maintenance rule program. The inspectors reviewed procedure SDS-EN2-PGM-0001, "SDS Maintenance Rule Program," Rev. 3. 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-0026, "Maintenance Rule Report," dated January 17, 2019. In the maintenance rule report, no SSCs were being considered for goal setting.

4.3 Conclusions

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.

5 **Exit Meeting Summary**

On February 28, 2019, the NRC inspectors presented the final inspection results to 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 certain 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
S. Mannon, SDS, Regulatory Affairs
T. Girad, SDS, Project Manager
M. King, SCE, DA Oversight Manager
M. Brison, SCE, DA Engineering Oversight
D. Evans, SCE, Regulatory Affairs

INSPECTION PROCEDURES USED

IP 71801 Decommissioning Performance and Status Review at Permanently Shutdown Reactors
IP 60801 Spent Fuel Pool Safety at Permanently Shutdown Reactors
IP 36801 Organization, Management, and Cost Controls 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

| | |
|-------|---|
| ADAMS | Agencywide Documents Access and Management System |
| CAP | Corrective Action Program |
| CFR | <i>Code of Federal Regulations</i> |
| CSLC | California State Lands Commission |
| EAL | Emergency Action Level |
| ECP | Employee Concern Program |
| °F | Degrees Fahrenheit |
| IOEP | ISFSI Only Emergency Plan |
| ISFSI | Independent Spent Fuel Storage Installation |
| LCO | Limiting Condition of Operation |
| NRC | Nuclear Regulatory Commission |
| PDEP | Permanently Defueled Emergency Plan |
| PSDAR | Post-Shutdown Decommissioning Activities Report |
| PPM | Parts Per Million |
| REV | Revision |
| RPV | Reactor Pressure Vessel |
| SDS | SONGS Decommissioning Solutions |
| SCE | Southern California Edison Company |
| SCWE | Safety Conscious Work Environment |
| SFP | Spent Fuel Pool |
| SONGS | San Onofre Nuclear Generating Station |
| SSCs | Structures, Systems, and Components |
| UFSAR | Updated Final Safety Analysis Report |

SAN ONOFRE NUCLEAR GENERATING STATION – NRC INSPECTION REPORTS
 05000206/2019-001; 05000361/2019-001; 05000362/2019-001 - DATED MARCH 18, 2019

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