



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

August 09, 2024

Frederic Bailly, 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 050-00361/2024-004 AND 050-00362/2024-004

Dear Frederic Bailly:

This letter refers to the U.S. Nuclear Regulatory Commission (NRC) inspection conducted onsite from June 24-27, 2024, with continuing in-office review until July 24, 2024, for the San Onofre Nuclear Generating Station, Units 2 and 3. The inspectors discussed the results of the inspection with you and members of your staff at the conclusion of the onsite inspection and during the final exit meeting on July 24, 2024. 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, observation of activities, independent measurement of radiation levels, and interviews with personnel. Specifically, the inspectors reviewed your implementation of decommissioning performance; radioactive waste treatment, and effluent and environmental monitoring; remedial and final surveys; fire protection program; and solid radioactive waste management and transportation of radioactive materials.

Based on the results of this inspection, the NRC has determined that two Severity Level IV violations of NRC requirements occurred. The first violation involves your failure to ensure a package for shipment was leakproof and properly closed and sealed to prevent release of radioactive content as required by U.S. Department of Transportation (DOT) regulations. The second violation involves your failure to ensure, by examination or appropriate tests, that the packaging for the Unit 2 pressurizer was proper for the contents being shipped as required by DOT regulations. Since your staff placed the two deficiencies into your corrective action program and the safety significance of the issues was determined to be low, and because the violations were non-repetitive and not willful, these violations are being treated as Non-Cited Violations (NCV), consistent with Section 2.3.2.a of the NRC Enforcement Policy.

The current NRC Enforcement Policy is included on the NRC's Website at (<https://www.nrc.gov/aboutnrc/regulatory/enforcement/enforce-pol.html>). These NCVs are described in the subject inspection report. You are not required to respond to this letter unless the description herein does not accurately reflect your corrective actions or your position. However, if you contest the violation or significance of the NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with copies to: (1) the Regional Administrator, Region IV; and (2) the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

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 Ms. Stephanie Anderson at 817-200-1213 or the undersigned at 817-200-1249.

Sincerely,



Signed by Warnick, Gregory  
on 08/09/24

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

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

Enclosure:  
Inspection Report 050-00361/2024-004; 050-00362/2024-004  
w/Attachment: Supplemental Inspection Information

Distribution via ListServ

SAN ONOFRE NUCLEAR GENERATING STATION - NRC INSPECTION REPORT 050-00361/2024-004; 050-00362/2024-004 – DATED AUGUST 09, 2024

**DISTRIBUTION:**

JMonninger, ORA  
 JLara, ORA  
 TBloomer, DRSS  
 JGroom, DRSS  
 GWarnick, DRSS  
 RAlexander, ORA  
 DCylkowski, ORA  
 VDricks, ORA  
 MSimmons, OEDO/ETA  
 NWarnek, NMSS/DUWP/RDB  
 ASnyder, NMSS/DUWP/RDB  
 LWilkins, OCA  
 AMoreno, RIV/OCA  
 R4-DRSS-DIOR-DECOM

DOCUMENT NAME: SAN ONOFRE NUCLEAR GENERATING STATION - NRC INSPECTION REPORT 050-00361/2024-004; 050-00362/2024-004

ADAMS Accession Number: **ML24215A313**

<input checked="" type="checkbox"/> SUNSI Review By: RJE	ADAMS: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Sensitive <input checked="" type="checkbox"/> Non-Sensitive	Non-Publicly Available <input checked="" type="checkbox"/> Publicly Available	Keyword NRC-002
OFFICE	SHP:DIOR/DRSS	SHP:DIOR/DRSS	SHP:DIOR/DRSS	C:DIOR/DRSS
NAME	RJEvans	ESMcManus	SGAnderson	GGWarnick
SIGNATURE	/RA/	/RA/	/RA/	/RA/
DATE	08/06/24	08/05/24	08/05/24	08/09/24

**OFFICIAL RECORD COPY**

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

Docket Nos. 050-00361; 050-00362

License Nos. NPF-10; NPF-15

Report Nos. 050-00361/2024-004; 050-00362/2024-004

Licensee: Southern California Edison Company

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

Location: 5000 South Pacific Coast Highway  
San Clemente, California

Dates: Onsite June 24-27, 2024  
In-office review July 1-24, 2024

Inspectors: Eric S. McManus, Health Physicist  
Decommissioning, ISFSI, and Operating Reactor Branch  
Division of Radiological Safety and Security

Stephanie G. Anderson, Senior Health Physicist  
Decommissioning, ISFSI, and Operating Reactor Branch  
Division of Radiological Safety and Security

Robert J. Evans, PE, CHP, PhD, 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

Attachment: Supplemental Inspection Information

Enclosure

## EXECUTIVE SUMMARY

San Onofre Nuclear Generating Station, Units 2 and 3  
NRC Inspection Report 05000361/2024-004; 05000362/2024-004

This U.S. Nuclear Regulatory Commission (NRC) inspection was a routine, announced inspection of decommissioning activities being conducted at San Onofre Nuclear Generating Station, Units 2 and 3. In summary, the licensee and its decommissioning general contractor were found to be conducting activities in accordance with site procedures, license requirements, and applicable NRC regulations with two exceptions as described below.

### Decommissioning Performance and Status Reviews at Permanently Shutdown Reactors

- The licensee and its decommissioning general contractor were adequately controlling decommissioning activities and radiological work areas at the facility. (Section 1.2)

### Radioactive Waste Treatment, and Effluent and Environmental Monitoring

- In accordance with Post-Shutdown Decommissioning Activities Report commitments, the licensee and its contractor established procedural and radiological controls for the environmental monitoring program including the planned drain down of the Unit 3 reactor cavity. Good health physics and operational preplanning controls were in place to support the drain down. (Section 2.2)

### Inspection of Remedial and Final Surveys at Permanently Shutdown Reactors

- The licensee conducted radiological surveys of non-concrete building surfaces, material and equipment, and land areas to demonstrate that these areas could be free released in place. These surveys were implemented in accordance with approved procedural guidance. (Section 3.2)

### Fire Protection Program at Permanently Shutdown Reactors

- The licensee fire protection program was being performed in accordance with the applicable regulatory and procedural requirements. (Section 4.2)

### Solid Radioactive Waste Management and Transportation of Radioactive Materials

- The inspectors reviewed selected radioactive waste management and transportation activities and identified two Severity Level IV non-cited violations of U.S. Department of Transportation regulations. The first violation involved the licensee's offering of a package for shipment which was not leakproof and properly closed and sealed to prevent release of radioactive content, and the second violation involved the licensee not ensuring, by examination or appropriate tests, that the packaging for the Unit 2 pressurizer was proper for the contents being shipped. (Section 5.2)

## Report Details

### Summary of Plant Status

Southern California Edison Company (SCE), the licensee, formally notified the NRC in June 2013 that it had permanently ceased power operations at San Onofre Nuclear Generating Station (SONGS), Units 2 and 3 (Agencywide Documents Access and Management System [ADAMS] Accession No. ML131640201). The NRC subsequently issued the permanently defueled technical specifications in July 2015 (ML15139A390), along with revised facility operating licenses to reflect the permanent cessation of operations at Units 2 and 3.

As required by Title 10 the *Code of Federal Regulations* (10 CFR) 50.82(a)(4), the licensee submitted its Post-Shutdown Decommissioning Activities Report (PSDAR) to the NRC on September 23, 2014 (ML14269A033). The PSDAR outlined the licensee's planned decommissioning activities. The current version of the PSDAR is dated May 7, 2020 (ML20136A339). As discussed in the revised PSDAR, the licensee chose the decommissioning alternative 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 Energy Solutions as the decommissioning general contractor. The joint venture between the two companies was named SONGS Decommissioning Solutions (SDS). The SDS organization manages most of the decommissioning activities as described in the PSDAR.

Prior to this inspection, the licensee completed the removal of both reactor coolant system pressurizers from the two containments and placed each on rail cars in preparation for transfer to a transportation carrier.

During the inspection, the licensee continued to clean the reactor cavities in both units to support future drain down of the cavities. The steam generators in both units were being cut into segments for offsite disposal. Radioactive wastes were being removed from both containments for disposal. The material handling facility was constructed, operational, and prepared for open air demolition of the site radioactive structures.

## **1 Decommissioning Performance and Status Review at Permanently Shutdown Reactors (Inspection Procedure [IP] 71801)**

### **1.1 Inspection Scope**

The inspectors observed site activities, reviewed documents, and interviewed site personnel in order to: (1) evaluate the status of decommissioning and verify whether the licensee was conducting decommissioning and maintenance activities in accordance with regulatory and license requirements; (2) evaluate the licensee awareness of work activities to assess their 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 were met, as applicable to the current decommissioning status.

## 1.2 Observations and Findings

### a. Status of Decommissioning

Section II.A of the PSDAR describes the decommissioning periods. The site is currently in Period 4. This period started upon conclusion of fuel transfer operations in August 2020 and extends through the completion of the decommissioning and decontamination work. At the time of the onsite inspection, the licensee and its decommissioning general contractor SDS were conducting major decommissioning activities in accordance with the commitments provided in Section II.B.1 of the PSDAR. The inspectors discussed the current decommissioning schedule with management staff, observed daily planning meetings, and conducted site tours to observe work in progress.

The inspectors reviewed the current decommissioning schedule with contractor management. The decommissioning project was generally on schedule. Selected work activities, such as cleanup of the reactor cavities, were slightly behind the original baseline schedule. The status of the decommissioning activities was noted to be commensurate with the challenges encountered. The non-radioactive portions of the control and radwaste buildings were being demolished during the onsite inspection. The inspectors observed that good industrial safety controls were in place including use of water cannons to suppress the dust created by demolition activities.

The inspectors attended a daily planning meeting. The topics included an As Low As Is Reasonably Achievable (ALARA) briefing, safety briefing, current work projects, and near-term work projects. The meeting provided the participants with current information of the work in progress including radiological and industrial safety updates as needed.

The inspectors reviewed the proposed radiological controls for open air demolition. Procedure SDS-RP1-TSD-21-08, "Surgical Demolition Plan for Radiological Open Air Demolition Readiness," revision 3, provided the radiological criteria and actions necessary to prepare several potentially contaminated buildings for open-air demolition. These buildings include portions of the control, radwaste, penetration, fuel handling, and safety equipment buildings. The procedure also provided instructions for contamination verification surveys to verify that the structures meet the radiological criteria prior to actual demolition. The inspectors reviewed the radiological plan and discussed the plan with site staff. The inspectors noted that the open-air demolition plan incorporated lessons learned from other sites.

The inspectors conducted site tours, in part, to observe preparation for open-air decommissioning activities. The inspectors toured the recently constructed material handling facility (MHF). The facility will be used to provide an enclosure for loading of radioactive building rubble into railcars.

The inspectors conducted a walk-down of the MHF building ventilation system. The inspectors reviewed the associated work plan and observed a functional test of the system. Decommissioning work package SDS-0-M-MH-2349, "Perform Start-Up and Testing of the MHF Tent Ventilation System," revision 0, provided the instructions for verification of system operability. The inspectors observed a demonstration for the startup and operation of the system. The inspectors compared system parameters to procedure requirements, although some system parameters were still being determined

as part of the startup process. In summary, the MHF ventilation system had been constructed and appeared ready for operations.

The inspectors also noted that additional radiation protection and environmental air samplers had been installed around the footprint where open-air demolitions will be conducted, to monitor for potential airborne contamination around the work area. In summary, the inspectors concluded that the licensee was effectively implementing decommissioning activities and planning for future demolition activities in accordance with the commitments provided in the PSDAR.

b. Observation of Decommissioning Work Activities in Units 2 and 3 Containments

The inspectors toured the Units 2 and 3 containments to observe work in progress and to independently assess radiological conditions. The inspectors observed the final cleanup of the reactor cavities in both units. The cleanup was being conducted to help prepare for drain down of the cavities. The debris originated, in part, from previous cutting of the reactor vessel internals (RVI). The cleanup work was being conducted in accordance with approved work packages.

In Unit 2, the applicable work package was SDS-2-M-CO-373, "U2-Demob, Uninstall, and Disassemble RVI Equipment," dated December 29, 2020. The observed work included the demobilization and removal of the water filtration and (radioactive) chip collection systems. In Unit 3, the cleanup work was being conducted per work package SDS-3-M-CO-421, "U3-Demob, Uninstall, and Disassemble RVI Equipment," dated December 29, 2020. The work included final reactor cavity cleanup from previous RVI activities.

Steam generator segmentation work was in progress, primarily in Unit 2. The pressurizers had been removed from both containments and were staged for shipment. Seven of eight reactor coolant pump motors had been removed from the two containments and shipped offsite. Signs, postings, and boundaries were generally well maintained. Housekeeping was good for the work in progress. A few minor issues were identified during the tours and reported to the radiation protection staff for resolution.

The inspectors conducted independent radiological surveys during site tours using a Thermo Scientific Radeye G survey meter (serial number 30932, calibration due date of 1/19/25, calibrated to cesium-137). As discussed in Section 5.2 below, the inspectors also conducted an independent survey of radioactive wastes that was about to be shipped from the site. Overall, the measured exposure rates were consistent with existing signs, postings, and area survey maps.

c. Decommissioning Staffing and Training

The inspectors conducted a limited review of the training qualifications for selected individuals who conducted fire protection activities. No discrepancies were noted during this review.

d. Decommissioning Planning, Scheduling, and Cost Assessment



The inspectors reviewed the licensee’s decommissioning strategy and schedule, in part, to ensure there were no major changes that would impact the decommissioning trust fund. No major changes were identified during the inspection that had a significant impact on the fund.

e. Problem Identification and Resolution

The inspectors reviewed recently issued corrective action reports. At the time of the onsite inspection, there were no significant corrective action reports that had been issued since the last inspection.

1.3 Conclusions

The licensee and its decommissioning general contractor were adequately controlling decommissioning activities and radiological work areas at the facility.

**2 Radioactive Waste Treatment, and Effluent and Environmental Monitoring (IP 84750)**

2.1 Inspection Scope

The inspectors observed site activities, reviewed documents, and interviewed site personnel to ensure that discharges of radioactive materials were adequately quantified and evaluated from established release points, and releases from any unmonitored and uncontrolled discharge pathways were precluded.

2.2 Observations and Findings

a. Radiological Environmental Monitoring Program (REMP)

The inspectors conducted a review of the environmental monitoring program which included field observations of equipment and procedures, and review of records associated with the program. The inspectors reviewed procedure SDS-CH2-PCD-1014, “Annual and Semiannual REMP Sampling,” revision 4. the Offsite Dose Calculations Manual (ODCM), Process Control Program (PCP), and Radwaste System Design and Operation. The ODCM was last revised in calendar year 2023. The revision deleted the turbine sump, updated containment ventilation, updated dose factors, updated gaseous site boundary, and made minor changes to the REMP. There were no changes to PCP. The changes were consistent with the status of decommissioning.

The inspectors reviewed and observed the operation of three air monitoring stations. The inspectors did not identify any deficiencies in the implementation of the procedure, and the air samplers were in proper working order at the time of the inspection.

The inspectors reviewed the licensee’s “Annual Radioactive Effluent Release Report – 2023 San Onofre Nuclear Generating Station (SONGS), Units 1, 2 and 3” (ML24124A140). Inspectors reviewed all radioactive liquid and gaseous discharge permits issued since the last inspection. This review included four batch liquid post-release reports and one continuous gaseous post-release report. The inspectors did not identify any deficiencies or concerns.

b. Radioactive Gaseous and Liquid Effluent Treatment

Section II of the PSDAR states that appropriate radiological and environmental programs will be maintained throughout the decommissioning process to ensure radiological safety of the workforce and the public, and environmental compliance will be maintained. As part of the decommissioning process, the licensee plans to drain down the two reactor cavities. The potentially contaminated water will be stored in onsite tanks, cleaned, and released to the environment in accordance with the instructions provided in the ODCM.

The inspectors reviewed the licensee's operational procedure for draining the Unit 3 reactor cavity, and the inspectors conducted a walkdown of the discharge pathway inside and outside of containment. The purpose of the walkdown was to ensure that the drainage pathway was installed and ready for drain down operations.

The inspectors reviewed procedure SDS-OP1-FRM-0002-U3, "Unit 3 Cavity Drain," dated June 24, 2024. The procedure described the process for transferring water from the Unit 3 reactor cavity to the former refueling water storage tanks. Additional details of the flow path were provided in site drawings. The inspectors walked down the accessible portions of the system using the information provided in the procedure and site drawings. The flow path appeared ready for drain down operations. The inspectors also reviewed the radiation protection controls established for drain-down of the Unit 3 reactor cavity.

c. Problem Identification and Resolution

The inspectors reviewed the status of the corrective action programs for entries involving radioactive waste treatment, and effluent and environmental monitoring. The licensee and contractor appeared to be effectively writing condition reports to address problems as they occur with corresponding corrective actions developed and implemented with a focus on preventing reoccurrence.

2.3 Conclusions

In accordance with PSDAR commitments, the licensee established procedural and radiological controls for the environmental monitoring program including the planned drain down of the Unit 3 reactor cavity. Good health physics and operational preplanning controls were in place to support the drain down.

**3 Inspection of Remedial and Final Surveys at Permanently Shutdown Reactors (IP 83801)**

3.1 Inspection Scope

The inspectors observed site activities, reviewed documents, and interviewed site personnel to verify that permanently shut down power reactor sites have been decontaminated to acceptable residual radioactivity levels and to verify that the licensee's implementing procedures, radiological measurements, decommissioning surveys, and documentation of decommissioning surveys comply with approved procedures.

3.2 Observations and Findings

a. Review of Completed Surveys

Section II.B.3 of the PSDAR states that the decontamination and/or dismantlement of contaminated structures, systems, and components may be accomplished by decontamination in place, decontamination and dismantlement, or dismantlement and disposal. Material below the applicable radiological limits may be released for unrestricted disposition (scrap, recycle or general disposal). At the time of the inspection, the licensee was demolishing sections of the control building that had been free released in place. The inspectors reviewed selected records to ensure that the building had been effectively radiologically surveyed and released prior to start of demolition activities.

Procedure SDS-LT1-PCD-1003, "Unconditional Release of Structures, Systems, and Miscellaneous Material and Equipment," revision 5, provided the instructions for unconditional release surveys to demonstrate that the building surfaces, materials, and equipment were suitable for unconditional release or reuse at the site. The inspectors reviewed the procedure and two completed survey packages for the control building. The first survey package included two areas on the 50-foot elevation, and the second survey package included two areas on the 9-foot elevation.

The two packages included documentation of surveys of non-concrete structural surfaces such as metal and materials and equipment. The concrete material was not surveyed because it will be disposed of as very low-level radioactive waste and will not be free released under the unconditional release survey program. Any contaminated components, such as liquid radwaste piping, were previously removed prior to the unconditional release surveys. The two survey packages document that the surveyed surfaces and items met the criteria for free-release in place.

In summary, the records indicated that the non-concrete structures and components in the two areas could be demolished, and the rubble released for recycling or non-radioactive material disposal.

b. Observation of Surveys in Progress

During the onsite inspection, radiological surveys of the north and south ocean-side bluffs were conducted, to demonstrate that the areas had not been impacted by previous plant operations. The historical site assessment did not include these areas, thus, the licensee felt it was prudent to radiologically survey the two areas to confirm that the areas had not been impacted by plant operations.

The surveys were conducted using the guidance provided in two characterization survey packages. The surveys consisted of surface scans for measurement of gamma radiation and soil sampling for analysis of radionuclides in the soil. The scans were conducted with either the in-situ object counting system and/or hand-held instruments. Additional samples were collected for quality control reasons. The inspectors observed both gamma scans and soil sampling. Both were conducted using industry-accepted practices. The inspectors observed the onsite laboratory's handling of selected soil samples.

In summary, the two radiological surveys were implemented in accordance with the instructions provided in the survey packages.

c. Verification and Confirmatory Surveys

The inspectors did not conduct confirmatory or verification surveys since the planned areas were inaccessible due to in-progress demolition efforts.

d. Problem Identification and Resolution

The inspectors reviewed the status of the corrective action programs for entries involving final surveys. The licensee appears to be effectively writing condition reports to address problems as they occur with corresponding corrective actions developed and implemented with a focus on preventing reoccurrence.

3.3 Conclusions

The licensee conducted radiological surveys of non-concrete building surfaces, material and equipment, and land areas to demonstrate that these areas could be free released in place. These surveys were implemented in accordance with approved procedural guidance.

**4 Fire Protection Program at Permanently Shutdown Reactors (IP 64704)**

4.1 Inspection Scope

The inspectors observed site activities, reviewed documents, and interviewed site personnel to verify the effectiveness of the licensee's decommissioning fire protection program.

4.2 Observations and Findings

a. Fire Protection Program

10 CFR 50.48(f) states, in part, that the licensee shall maintain a fire protection program to address the potential for fires that could cause the release or spread of radioactive materials onsite or result in a localized radiological hazard. The inspectors reviewed the licensee's fire protection program for compliance with regulatory and license requirements. The inspectors reviewed the fire protection program as defined by procedure SDS-FP1-PGM-0001, "SDS Fire Protection Program," revision 10.

Regulatory Guide 1.191, "Fire Protection Program for Nuclear Power Plants During Decommissioning and Permanent Shutdown," describes the methods acceptable to the NRC for complying with the NRC's regulations for fire protection programs for licensees in decommissioning. This regulatory guide is referenced in the licensee's implementing procedures, and the inspectors compared the licensee's fire protection program to the guidance provided in the regulatory guide.

The licensee's fire protection program records included a detailed fire hazards analysis. This document provided an analysis of the various plant areas and the fire protection requirements for those areas. The licensee fire protection program procedures described staff responsibilities, program elements, and records requirements. In addition,

procedures were developed to implement the various program attributes such as system operations, maintenance, design control, staffing, and training.

The inspectors reviewed two assessments that evaluated the fire protection program in accordance with 10 CFR 50.48(f)(2). The assessments showed that the fire protection program was adequate at the site, however weaknesses were identified with program implementation, documentation issues, which could present a challenge in compliance with 10 CFR 50.48(f). The licensee documented the corrective actions for the weaknesses within the licensee's corrective action program.

b. Fire Protection Systems and Equipment

The inspectors reviewed the licensee's ability to rapidly detect, control, and extinguish fires. At this stage in decommissioning, the licensee has no automatic fire detection systems and no automatic fire suppression systems within the deconstruction area at the plant. Fire extinguishers located throughout the plant were verified by the inspectors using the pre-fire plans. The fire extinguishers monthly and annual surveillances were completed satisfactorily.

c. Control of Combustible Materials and Ignition Sources

To prevent fires from occurring, the licensee established and implemented administrative procedures for fire prevention control of transient combustible material and control of ignition sources. The inspectors conducted site tours to confirm that procedure controls were being implemented. In particular, the inspectors toured the various elevations of the Unit 2 and Unit 3 containment building, where a majority of the work activities were occurring. The inspectors concluded that the licensee was effectively controlling combustible materials around ignition sources in these areas in accordance with procedure requirements.

d. Organization

The licensee's decommissioning fire protection program identified the site fire marshal who reports to the SDS Operations Manager. Fire watch training is provided for all individuals assigned fire watch duties. The inspectors reviewed various hot work permits and verified all individuals who stood fire watch were qualified for the position. The inspectors also reviewed the memorandum of understanding with the offsite fire brigade, as they were the primary responders in the case of a fire at the site.

e. Problem Identification and Resolution

The inspectors reviewed a sample of condition reports, and assessed the licensee is identifying problems and entering them into their corrective action program appropriately.

4.3 Conclusions

The licensee and its decommissioning contractor implemented the fire protection program in accordance with applicable regulatory and procedure requirements.

**5 Solid Radioactive Waste Management and Transportation of Radioactive Materials (IP 86750)**

## 5.1 Inspection Scope

The inspectors observed site activities, reviewed documents, and interviewed site personnel to verify the effectiveness of the licensee's programs for processing, handling, storage, and transporting radioactive material.

## 5.2 Observations and Findings

### a. Radioactive Material Storage and Control

The inspectors conducted walkdowns of radioactive waste storage areas located both inside and externally adjacent to the two containment buildings. Storage of radioactive material was controlled by SDS procedure SDS-RP1-PGM-3000, "Control of Radioactive Material," revision 5. Radioactive material was being controlled, labelled, posted, and secured against unauthorized removal in accordance with the SDS procedure and 10 CFR Part 20 regulations. The inspectors noted continued improvement from the last inspection in the areas of labels, barrier ropes, and postings.

### b. Radioactive Waste Processing

The licensee was not processing wastes at the time of the inspection; therefore, this program area was not inspected.

### c. Transportation of Radioactive Materials

The inspectors observed the preparation of two pressurizers for transport by rail as Class A waste. The Unit 2 pressurizer was removed from the Unit 2 containment and prepared for shipment per SDS decommissioning work package SDS-2-M-CO-1134, "Remove Unit 2 Pressurizer," revision 0. The inspectors observed the radiological survey, inspection, and placarding of both pressurizers, and reviewed copies of the shipping paperwork provided to the carrier. Radiological surveys were performed and documented in accordance with licensee procedures. The inspectors' independent survey measurements validated the results of the surveys. The pressurizers were placarded in accordance with licensee procedures and 49 CFR Part 173 requirements. The shipping paperwork provided to the carrier included documents and information required in accordance with licensee procedures and 49 CFR 172, Subpart C requirements.

On June 26, 2024, the licensee shipped the Unit 2 pressurizer as Class A waste to Clive, UT for permanent disposal. While in route, the transporter made a temporary stop at the San Bernadino railyard. On July 1, 2024, the licensee received notification from the San Bernadino railyard that the Unit 2 pressurizer was observed to be leaking a liquid. The licensee reported this event to the NRC Operations Center as event #57202. The licensee sent a team to the railyard to investigate the leak. Licensee analysis determined the liquid in the pressurizer was reactor coolant system (RCS) liquid. As a result of this transportation event, the NRC identified two violations of regulatory requirements.

10 CFR 71.5(a) states that each licensee who transports licensed material outside the site of usage, as specified in the NRC license, or where transport is on public highways,

or who delivers licensed material to a carrier for transport, shall comply with the applicable requirements of the U.S. Department of Transportation (DOT) regulations in 49 CFR parts 107, 171 through 180, and 390 through 397, appropriate to the mode of transport.

49 CFR 173.24(f)(1), states in part, that closures on packagings shall be so designed and closed that under conditions (including the effects of temperature, pressure and vibration) normally incident to transportation: (i) there is no identifiable release of hazardous materials to the environment from the opening to which the closure is applied; and (ii) the closure is leakproof and secured against loosening.

49 CFR 173.475(f), states in part, that before each shipment of any Class 7 (radioactive) materials package, the offeror must ensure, by examination or appropriate tests, that each closure, valve, or other opening of the containment system through which the radioactive content might escape is properly closed and sealed.

Contrary to the above, on June 26, 2024, the licensee offered a package for shipment which was not leakproof and not properly closed and sealed to prevent release of radioactive content. Specifically, the Unit 2 pressurizer leaked RCS liquid from the manway cover during transport. The RCS liquid contained low levels of radioactive Cobalt-60 and Cesium-137. (NCV 05000361/2024004-01, Failure to ensure shipment was leakproof)

The two pressurizers were shipped as surface contaminated object SCO-II packages. The shippers believed there was no free-standing liquid inside the pressurizers. After the pressurizers were returned to SONGS, the licensee's investigation determined that the Unit 2 pressurizer contained approximately 190 gallons of RCS liquid.

49 CFR 173.475(a), states in part, that before each shipment of any radioactive materials package, the offeror must ensure, by examination or appropriate tests, that the packaging is proper for the contents to be shipped.

49 CFR 173.403 defines an SCO as a solid object which is not itself radioactive, but which has radioactive material distributed on its surface. The shipping manifest for the Unit 2 pressurizer classified the shipment as an SCO-II shipment.

Contrary to the above, on June 26, 2024, the licensee did not ensure, by examination or appropriate tests, that the packaging for the Unit 2 pressurizer was proper for the contents shipped. Specifically, the licensee offered the Unit 2 pressurizer for shipment as an SCO-II while it contained approximately 190 gallons of RCS liquid. Due to the presence of RCS liquid, the packaging and its contents did not meet the definition of an SCO shipment since it did not have only radioactive material distributed on its surface. Thus, it should not have been shipped as an SCO-II shipment. (NCV 05000361/2024004-02, Failure to properly classify shipment)

In addition, the licensee failed to implement decommissioning work package, SDS-2-M-CO-1603, revision 0, step 45, which states in part, "BREACH - CUT or DRILL holes to existing PZR piping to drain and relieve system of stored fluid pressure and to drain any residual liquids." Since the procedure step was not implemented as prescribed, and since the licensee's contractor did not drain the Unit 2 pressurizer of all residual liquids, this procedural failure directly contributed to the above violation.

Upon identification of the transportation event, the licensee and its decommissioning contractor entered the issue into their respective corrective action programs as action request 0724-58376 and condition report SDS-001934. The licensee took the following immediate actions: (1) dispatched a team to radiologically survey the shipment at the San Bernardino railyard; (2) contained the leak by installing a bladder over the leaking manway cover; and (3) returned Unit 2 and Unit 3 pressurizers to the licensed site for further investigation.

These violations were evaluated to be a Severity Level IV violation using the guidance provided in Section 6.8.d.1 of the NRC Enforcement Policy, dated January 12, 2024, regarding the breach of package integrity occurs without external radiation levels exceeding the NRC limit or without contamination levels exceeding the NRC limits, where the failure has a low safety significance.

Since the licensee placed the deficiency into its corrective action program and the safety significance of the issue was determined to be low, and because the violation was not willful or repetitive; these violations were treated as non-cited violations (NCV), consistent with Section 2.3.2.a of the NRC Enforcement Policy.

d. Problem Identification and Resolution

The inspectors reviewed the status of the corrective action programs for entries involving waste management and transportation activities. The licensee appears to be effectively writing condition reports to address problems as they occur with corresponding corrective actions developed and implemented with a focus on preventing reoccurrence.

5.3 Conclusions

The inspectors reviewed selected radioactive waste management and transportation activities and identified two Severity Level IV non-cited violations of U.S. Department of Transportation regulations. The first violation involved the licensee's offering of a package for shipment which was not leakproof and properly closed and sealed to prevent release of radioactive content, and the second violation involved the licensee not ensuring, by examination or appropriate tests, that the packaging for the Unit 2 pressurizer was proper for the contents being shipped.

**6 Exit Meeting Summary**

The inspectors presented the preliminary inspection results to Frederic Bailly, Vice President and Chief Nuclear Officer, and other members of the licensee's staff at the conclusion of the onsite inspection on June 27, 2024. A final exit meeting was presented to the CNO and licensee staff on July 24, 2024. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified except for certain SDS procedures and documents which were marked as proprietary.



## SUPPLEMENTAL INSPECTION INFORMATION

### KEY POINTS OF CONTACT

#### Licensee and Contractor Personnel

V. Bilovsky, SCE, Decommissioning Project Director  
G. Ferrigno, SDS, Radiation Protection Manager  
S. Fuller, SDS, Safety Manager  
A. Hinojosa, SDS, Engineer  
R. Kalman, SDS, Executive Sponsor  
D. Knudson, SDS, Programs Manager  
J. Madigan, SCE, Nuclear Oversight and Safety Culture Manager  
S. Mannon, SDS, Programs Project Director/Regulatory Manager  
M. Morgan, SCE, Manager, Regulatory Affairs  
L. Rafner, SCE, Regulatory Affairs  
W. Richter, SDS, Fire Marshall  
S. Sewell, SCE, Manager, Radiation Protection and Waste  
J. Stephenson, SCE, Manager, ISFSI Engineering

### INSPECTION PROCEDURES USED

IP 71801 Decommissioning Performance and Status Reviews at Permanently Shutdown Reactors  
IP 84750 Radioactive Waste Treatment, and Effluent and Environmental Monitoring  
IP 83801 Inspection of Remedial and Final Surveys at Permanently Shutdown Reactors  
IP 64704 Fire Protection Program at Permanently Shutdown Reactors  
IP 86750 Solid Radioactive Waste Management and Transportation of Radioactive Materials

### LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

#### Opened/Closed

05000361/2024004-01	NCV	Failure to ensure shipment was leakproof
05000361/2024004-02	NCV	Failure to properly classify shipment

#### Discussed

None

## LIST OF ACRONYMS

ADAMS	Agencywide Documents Access and Management System
ALARA	As Low As Is Reasonably Achievable
CFR	<i>Code of Federal Regulations</i>
DOT	U.S. Department of Transportation
IP	Inspection Procedure
LSA	Low Specific Activity
MHF	Material Handling Facility
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
PCP	Process Control Program
PSDAR	Post-Shutdown Decommissioning Activities Report
RCS	Reactor Coolant System
REMP	Radiological Environmental Monitoring Program
RP	Radiation Protection
RVI	Reactor Vessel Internals
SCE	Southern California Edison Company
SCO	Surface Contamination Object
SDS	SONGS Decommissioning Solutions
SONGS	San Onofre Nuclear Generating Station