



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
REGION IV  
1600 E LAMAR BLVD  
ARLINGTON, TX 76011-4511

February 11, 2015

Mr. Thomas J. Palmisano, 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 050-00361/15-007; 050-00362/15-007**

Dear Mr. Palmisano:

This refers to the inspection conducted on January 12-15, 2015, at your permanently shut down San Onofre Nuclear Generating Station facility, Units 2 and 3. The purpose of the inspection was to determine whether decommissioning activities were being conducted safely and in accordance with U.S. Nuclear Regulatory Commission (NRC) requirements. The results of the inspection were discussed with members of your staff at the conclusion of the onsite inspection on January 15, 2015.

During this inspection, NRC staff examined activities conducted under your license as they relate to public health and safety to confirm compliance with the Commission's rules and regulations, and with the conditions of your license. Within these areas, the inspection consisted of selected examination of procedures and representative records, observations of activities, and interviews with personnel. The enclosed report presents the results of this inspection. No violations were identified, and no response to this letter is required.

In accordance with 10 CFR 2.390 of the NRC's "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 document system (ADAMS), accessible from the NRC Web site 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 concerning this inspection, please contact Dr. Robert Evans, Senior Health Physicist, at 817-200-1234, or the undersigned at 817-200-1911.

Sincerely,

*/RA/*

Ray L. Kellar, P.E., Chief  
Repository and Spent Fuel Safety Branch  
Division of Nuclear Materials Safety

Docket No.: 50-361, 50-362  
License No.: NPF-10, NPF-15

Enclosure:

NRC Inspection Report 050-00361/15-007; 050-00362/15-007

cc w/encl: Director, California Radiation  
Control Program  
R. Sholler, Southern California  
Edison Company  
W. Mathews III, Esquire, Southern  
California Edison Company  
J. Brabec, Southern California  
Edison Company  
E. Park, Esquire, Southern California  
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U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

Docket: 50-361, 50-362

License: NPF-10, NPF-15

Report: 050-00361/15-007; 050-00362/15-007

Licensee: Southern California Edison

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

Location: 5000 S. Pacific Coast Highway  
San Clemente, California 92674

Dates: January 12-15, 2015

Inspectors: Robert Evans, Ph.D., C.H.P., P.E., Senior Health Physicist  
Repository and Spent Fuel Safety Branch  
Division of Nuclear Materials Safety

Donald Stearns, Health Physicist  
Repository and Spent Fuel Safety Branch  
Division of Nuclear Materials Safety

Approved By: Ray L. Kellar, P. E., Chief  
Repository and Spent Fuel Safety Branch  
Division of Nuclear Materials Safety

Attachment: Supplemental Inspection Information

Enclosure

## EXECUTIVE SUMMARY

Southern California Edison  
NRC Inspection Report 050-00361/15-007; 050-00362/15-007

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. In summary, the licensee was conducting site activities in accordance with procedures, license requirements, and regulations.

### Maintenance and Surveillance

- The licensee's maintenance staff conducted the diesel fire pump battery surveillance in accordance with fire protection program requirements and approved written procedures. (Section 1.2.a)
- The licensee and its contractors were conducting work specified in the Post-Shutdown Decommissioning Activities Report in the main switchyard area with an emphasis on industrial safety. (Section 1.2b)
- The inspectors reviewed the licensee's future plans for spent fuel pool level indication and noted that the licensee plans to install additional level indicators in accordance with commitments previously made to the NRC. (Section 1.2c)

### Decommissioning Performance and Status Review

- The licensee continued to prepare for future decommissioning activities, including cold and dark operations, in accordance with Post-Shutdown Decommissioning Activities Report requirements. (Section 2.2.a)
- The licensee continued to implement system abandonment activities in accordance with approved procedures. (Section 2.2.b)
- The licensee continued to implement site characterization surveys, as discussed in the Post-Shutdown Decommissioning Activities Report, in accordance with the approved site characterization survey plan. (Section 2.2.c)
- The inspectors conducted site tours and concluded that the licensee was maintaining the areas toured in accordance with radiation protection procedures and related regulatory requirements. (Section 2.2.d)

### Maintaining Occupational Exposures As Low As Reasonably Achievable

- The licensee was implementing its radiation protection program in accordance with 10 CFR Part 20, license, and procedural requirements. In particular, the inspectors concluded that the licensee continued to implement an As Low As Reasonably Achievable (ALARA) program in an effort to monitor and control occupational exposures. The licensee also conducted annual program reviews in accordance with regulatory requirements. Further, the licensee was implementing its corrective action program in the radiation protection

program area in accordance with regulatory, license, and procedural requirements.  
(Section 3.2)

Solid Radioactive Waste Management and Transportation of Radioactive Materials

- The licensee was characterizing, packaging, and shipping radioactive wastes in accordance with regulatory and procedure requirements. (Section 4.2)

## Report Details

### **Site Status**

The licensee elected to permanently shut down the San Onofre Nuclear Generating Station (SONGS) facility in June 2013. At the time of this inspection, the licensee continued to prepare for site decommissioning.

The licensee submitted its Post-Shutdown Decommissioning Activities Report (PSDAR) to the NRC in September 2014, as required by regulation 10 CFR 50.82(a)(4)(i). The licensee also submitted a site-specific decommissioning cost estimate and an integrated fuel management plan to the NRC in September 2014. On October 27, 2014, the NRC participated in a public meeting that included solicitation of public comments on the licensee's PSDAR. At the end of the inspection period, the NRC staff was still reviewing the public comments on the PSDAR. The NRC staff also continued to review the licensee's proposed revisions to the emergency plan, defueled technical specifications, quality assurance plan, and security plan.

The licensee continued to conduct work in the plant to prepare for future decommissioning. This work included abandonment of systems, removal of hazardous materials, and preparations for "cold & dark" decommissioning activities and spent fuel pool (SFP) islanding. The licensee continued to conduct site radiological and hazardous material characterization surveys, in accordance with the PSDAR, to prepare for future decommissioning and waste disposal activities. Finally, the licensee continued to conduct routine operations, maintenance and surveillance activities, effluent monitoring, and environmental monitoring as required by the license.

### **1 Maintenance and Surveillance (62801)**

#### **1.1 Inspection Scope**

The inspectors reviewed selected operational, maintenance, and surveillance activities to ensure that the licensee continued to operate and maintain plant systems. In particular, the inspectors observed the performance of a surveillance of the diesel fire pump battery, observed work in progress in the main electrical switchyard, and reviewed the status of the licensee's previous commitment to install additional level instrumentation in the two SFPs.

#### **1.2 Observations and Findings**

##### **a. Weekly Surveillance of Diesel Fire Pump Battery**

Regulation 10 CFR 50.48(f) stipulates 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. In addition, both the Units 2 and 3 licenses require implementation of the site-wide fire protection program. Details of the licensee's program are provided in Fire Protection Order SO123-FP-1, "Fire Protection Program," Revision 19. The fire protection program includes requirements for a fire suppression system. The licensee's fire suppression water system includes two electric motor-driven fire pumps and one diesel-driven fire pump.

The operability and surveillance requirements for these fire pumps are provided in the Fire Protection Program procedure. The procedure states that a minimum of one fire pump diesel engine battery bank and charger shall be demonstrated to be functional. The licensee demonstrated functionality of the diesel engine, in part, by conducting weekly surveillance tests of the battery bank and associated battery charger. The inspectors observed the licensee performing the weekly surveillance of the diesel fire pump battery bank and charger.

The licensee conducted the surveillance using the instructions provided in procedure SO23-I-2.18, "Weekly Diesel Fire Pump Battery Inspection," Revision 18. This procedure provided instructions to observe and record system voltages, battery electrolyte levels, and battery cell specific gravities. The primary acceptance criteria included verification of battery voltage and electrolyte levels.

The inspectors observed the performance of the surveillance by the licensee's maintenance crew. The work activity began with a review of safety and discussion of the activities to be performed. The maintenance staff conducted the surveillance using the safety equipment and measuring devices stipulated in the procedure. The inspectors noted that the maintenance staff used calibrated instruments when measuring the specific gravities and voltage levels. The inspectors also noted that the plant equipment met the acceptance criteria established in the Fire Protection Plan including adequate electrolyte and voltage levels. Further, the maintenance staff conducted the surveillance in accordance with the instructions provided in the site procedure, and the staff appeared knowledgeable about the tasks being performed.

b. Tour of Main Electrical Switchyard

Section II of the PSDAR provides an overview of the planned decommissioning activities. These activities include site modifications as necessary to support future decommissioning and decontamination efforts. The inspectors conducted a tour of the electrical switchyard to observe activities in progress. The inspectors observed the licensee's staff and its contractors conducting equipment installation and removal activities within the switchyard. This work was being conducted, in part, to support future decommissioning activities.

The main switchyard consists of two basic areas, one controlled by San Diego Gas & Electric and the second controlled by Southern California Edison. The work in progress in the Southern California Edison portion of the switchyard included removal or relocation of breakers and disconnect switches. These modifications were necessary, in part, because the licensee permanently discontinued use of the main generator, main transformer, unit auxiliary transformers, and reserve auxiliary transformers. The licensee was also preparing to install new transformers that will be used to support decommissioning activities with power originating from an offsite power source. In addition, the licensee continued to construct the Mechanical and Electrical Equipment Room in the switchyard. As part of the switchyard modifications, the licensee plans to transfer remote control for the switchgear from the main control room to an offsite location; although, certain activities can continue to be performed manually in the switchyard.



Work activities in progress by San Diego Gas & Electric included removal of breakers and disconnect switches. In addition, San Diego Gas & Electric was preparing a portion of its switchyard for construction of a synchronous condenser in the near future.

The inspectors noted that the switchyard workers were conducting work in accordance with industrial safety requirements. These safety features included use of special protective clothing and special oversight when conducting high risk activities such as movement of cranes within the area.

c. Review of SFP Instrumentation Changes

By letter dated March 12, 2012 (ML12054A679), the NRC issued Order EA-12-051 to the licensee. The Order required the licensee to install and maintain reliable SFP instrumentation. However, by letter dated August 26, 2013 (ML13240A130), the licensee requested full relaxation of the Order based on the decay time of the irradiated fuel in the SFPs and a commitment to implement alternative SFP level indication. The licensee subsequently requested rescission of the Order in its letter dated September 30, 2013 (ML13276A019). By letter dated June 30, 2014 (ML14111A069), the NRC rescinded the Order, in part, based on the licensee's previous commitment to install and maintain alternate SFP level indication. During the inspection, the inspectors reviewed the status of the SFP level indications.

At the time of the inspection, the SFP level instrumentation included a local level gauge in each pool as well as local and remote alarms that actuate on high and low pool levels. In addition to SFP level, the licensee monitors SFP temperature and area radiation levels to assist the operators in identifying abnormal pool conditions.

As part of decommissioning, the licensee plans to permanently remove the SFP cooling and cleanup systems from service. In its place, the licensee plans to modify the existing plant equipment and install new equipment to support "SFP islanding." As part of SFP islanding, the licensee will install temporary SFP cooling skids, SFP purification skids, SFP makeup subsystems, and develop mitigating strategies for SFP makeup and spray schemes. The licensee also plans to install new instrumentation to monitor SFP operations.

The licensee plans to keep the existing pool level, temperature, and radiation monitoring equipment in service. In accordance with commitments made in its letter to the NRC dated August 26, 2013, the licensee plans to install pressure gauges on the original SFP cooling pump suction lines. These pressure indicators (one per unit with spares available) would be calibrated to provide indications of pool level, based on the height of the water columns in the suction lines. The indicators would provide local indication near the makeup pump control stations. The level indicators will help operators determine when makeup water must be added to a SFP to restore or maintain normal water level, and provide indication when makeup flow must be stopped to prevent overflow.

The licensee's representatives noted that these new local level indicators would meet the intent of NUREG-1738, Technical Study of Spent Fuel Pool Accident Risk at Decommissioning Nuclear Power Plants, Table 4.1-1, "Industry Decommissioning Commitments," because the SFP instrumentation would include readouts in areas where personnel are stationed. Operations staff would be stationed at the makeup pump

control stations, in addition to other local control stations, because the operational functions in the control room will be reduced as part of decommissioning. In its letter to the NRC dated August 26, 2013, the licensee committed to install the level gauges by the end of 2016. At the time of the inspection, the licensee had not completed the level indication changes in the plant; although, the licensee had developed engineering change packages for the proposed changes.

In addition to the installation of local pressure/level indications on the SFP cooling suction lines, the licensee was considering a fourth pool level indicator with transducer connections at the spent fuel transfer pool suction lines. If installed, these connections will provide SFP level indications to the control room (command center) computer.

The licensee also plans to make several changes to the existing SFP temperature indications. As noted earlier, the existing temperature indicators in the SFPs will continue to remain in service providing local temperature indication and high temperature alarms in the control room. The licensee plans to install new temperature elements in the SFP cooling skids which will provide the control room with water temperature information when the skids are in service. These new temperature elements will replace the temperature elements that were connected to the original SFP cooling pumps. Further, the licensee plans to permanently discontinue use of temperature indicators on the replacement SFP purification pumps because the new purification skids will be interconnected to the SFP cooling skids which will have temperature elements already installed.

### 1.3 Conclusions

The licensee's maintenance staff conducted the diesel fire pump battery surveillance in accordance with fire protection program requirements and approved written procedures. The licensee and its contractors were conducting work specified in the Post-Shutdown Decommissioning Activities Report in the main switchyard area with an emphasis on industrial safety. The inspectors reviewed the licensee's future plans for spent fuel pool level indication and noted that the licensee plans to install additional level indicators in accordance with commitments previously made to the NRC.

## **2 Decommissioning Performance and Status Review (71801)**

### 2.1 Inspection Scope

The inspectors evaluated whether the licensee and its contracted workforce were conducting decommissioning activities in accordance with license and regulatory requirements. In particular, the inspectors reviewed the licensee's progress towards implementing cold & dark modifications, equipment abandonment, and site characterization surveys. In addition, the inspectors conducted site tours, in part, to observe the licensee's control of radioactivity and radiation areas within the radiologically restricted areas.

## 2.2 Observations and Findings

### a. Review of Cold & Dark Modifications

Section II of the PSDAR provides an overview of the planned decommissioning activities. These activities include site modifications as necessary to support future decommissioning and decontamination efforts. The licensee plans to implement a series of cold & dark modifications to support future plant decommissioning work. To dismantle and dispose of the permanent plant equipment, temporary equipment must be installed to provide the electrical power, water, and ventilation needed to support decommissioning activities within the plant structures. The licensee's cold & dark modifications primarily consist of two main types of work, namely electrical and mechanical modification changes.

The electrical modifications include installation of a 12-kilovolt ring bus around the power block. From the ring bus, power will be distributed to all electrical loads needed to support decommissioning as well as temporary support equipment (ventilation, cooling). The electrical modifications will include installation of 480-volt load centers and motor control centers. Two backup diesel generators will be installed to provide power to essential loads during loss of offsite power events. One 1500-kilowatt diesel generator will be used to support the SFP cooling systems and other essential loads. A 500-kilowatt diesel generator will provide power to telecommunications equipment.

With regards to mechanical modifications, the licensee planned to install fire detection equipment, in part, to meet the requirements of 10 CFR 50.48(f). These changes will include installation of new or repurposing of existing plant equipment as fire alarm control units, fire detection monitors, and fire suppression equipment (water sources, pumps, and tanks as necessary). Power for the modified fire protection equipment will be provided by the ring bus. Other mechanical modifications include new and/or repurposed radioactive and non-radioactive water sumps, building ventilation, salt water dilution pumps (for dilution of liquid releases as necessary to comply with license/Offsite Dose Calculation Manual requirements), and SFP water makeup. With regards to SFP makeup, the licensee plans to repurpose plant equipment, including pumps and tanks, to provide sources of makeup water to the SFPs as necessary in response to abnormal operations. In addition to the SFP makeup system modifications, the licensee plans to implement modifications to support SFP islanding and liquid radioactive waste processing.

A command center is planned to be constructed in the Units 2/3 control room to provide a centralized location for monitoring spent fuel cooling as well as instrumentation necessary to support emergency preparedness activities. The command center will also include communication capabilities with offsite government agencies. The licensee was considering the idea of relocating the health physics checkpoint, the location where site workers entered and exited the radiologically restricted area, and the chemistry laboratory.

At the time of the onsite inspection, the licensee continued to conduct engineering analyses and some limited field work to support the cold & dark changes. The licensee delayed full implementation of the cold & dark work, in part, to procure equipment, issue contracts, and obtain vendor-supplied drawings. The licensee planned to accept bids in the next few weeks from qualified vendor who will conduct the majority of the work, and

the licensee plans to select a contract vendor by March 2015. (The licensee plans to select a decommissioning general contractor as discussed in the PSDAR at a later date.) After mobilization, the vendor is expected to start construction work in April-May 2015. The licensee plans to retain control of operations and radiation protection, while the selected vendor will provide quality assurance, welding, rigging, work planning, and tools for the work to be accomplished. The licensee also plans to develop procedures and protocols for providing oversight of the vendor's work activities.

The licensee currently plans to implement cold & dark by early 2016. At that time, the licensee also plans to have retired all permanent plant equipment from service. Finally, the licensee has delayed major building demolition work from mid-2015 to late-2016 or early 2017, including demolition of the K buildings as well as the two turbine buildings.

b. Review of Equipment Abandonment Activities

Since the licensee elected to discontinue operations in June 2013, the licensee established and implemented a program to remove all permanent plant systems from service. The licensee implemented procedures to abandon systems no longer required to be in service. At the time of the site inspection, the licensee had removed 41 systems from service. The licensee drained water, oil, and radioactive resins from these systems, although some residual material may remain within the systems. The licensee also disconnected these systems from their electrical power sources.

Another 57 systems continued to remain in service for various reasons. During the previous inspection, the licensee was reassessing the preventive maintenance requirements for the systems still in service. During the current inspection period, the licensee continued to prepare for cold & dark activities through reviews and assessments; little field work was being conducted. The licensee plans to transition the remaining systems to the cold & dark program.

The licensee's representatives stated that it would continue to implement the requirements of the license and emergency plan for systems that must remain in service, and to implement system maintenance and surveillance activities as necessary to support systems still in service. The licensee plans to remove additional systems from service upon NRC approval of the licensee's proposed revisions to the plant defueled technical specifications and emergency plan. In addition, the licensee plans to abandon systems in the future by area versus by system. The inspectors concluded that the licensee continued to implement a system abandonment program as described in site procedures.

c. Site Characterization Surveys

Section II.D.6 of the PSDAR provides the site characterization requirements. During the inspection, the licensee continued to conduct site characterization surveys to help identify, categorize, and quantify the radiological, regulated, and hazardous wastes at the site. The results of the site characterization will be used, in part, to develop controls and procedures for removing and disposing of the radioactive and non-radioactive waste material from the plant. The inspectors reviewed the licensee's implementation of its site characterization program.

The licensee's contractor developed a site characterization survey plan to control work activities related to characterization of the SONGS site. To conduct the site characterization, the site was divided into 15 survey areas. At the time of the inspection, the licensee had completed the characterization surveys in nine areas. The nine areas included the land around the site, turbine buildings, and switchyard. The licensee's contractor was conducting preliminary walk-downs and surveys in three areas during the inspection including the Unit 2 area, auxiliary building, and north industrial area. The contractor still has to conduct walk-downs and surveys in the Unit 3 area, storm/yard drains, and south yard facility.

The licensee was conducting characterization surveys of the auxiliary building during the inspection period. The inspectors observed the contractors conducting the surveys, and compared the work to the instructions provided in the survey plan and work instructions. In summary, the licensee's contractor was conducting the characterization surveys in the auxiliary building in accordance with guidance provided in the site characterization plan and implementing procedures. The licensee plans to complete the site characterization surveys by April 2015 and finalize the site characterization report about a month later. The inspectors will review the licensee's historical site assessment and final site characterization survey results at a later date, after the documents have been finalized and approved by the licensee.

San Diego Gas & Electric plans to install a synchronous condenser in the southern portion of the main switchyard. The licensee's contractors developed a final status survey plan and cross-contamination prevention plan for the area where the synchronous condenser will be located. The proposed final status survey of the switchyard areas includes collection of surface and subsurface soil samples, walk-over scan surveys for gamma emitting radionuclides, and static measurements for gamma emitting radionuclides. The survey packages, the instructions for performing the final status survey in the field, were under development at the end of the onsite inspection. After completion of the surveys, the licensee's contractor plans to issue a survey report that includes the switchyard general area, Mechanical and Electrical Equipment Room footprint, and synchronous condenser footprint.

d. Site Tours

During site tours within the radiologically restricted areas, the inspectors conducted independent gamma radiation measurements using a Thermo Scientific Model RadEye B20 survey meter (NRC No. 12398, calibration due date of September 24, 2015). The inspectors also observed the status of boundaries, postings, and labeling to determine compliance with regulatory and procedural requirements. In addition, the inspectors' survey measurements were comparable to the survey results presented on area maps created by the licensee's health physics staff. The licensee placed hand-held survey instruments at selected locations in the plant for personnel exiting certain areas. The inspectors noted that licensee's radiation survey instruments selected for review were within required calibration frequencies. In the areas toured, the licensee had implemented radiation protection controls, including postings and labeling, that were in compliance with regulatory and procedure requirements.

## 2.3 Conclusions

The licensee continued to prepare for future decommissioning activities, including cold and dark operations, in accordance with PSDAR requirements. The licensee continued to implement system abandonment activities in accordance with approved procedures. The licensee continued to implement site characterization surveys, as discussed in the PSDAR, in accordance with the approved site characterization survey plan. The inspectors conducted site tours and concluded that the licensee was maintaining the areas toured in accordance with radiation protection procedures and related regulatory requirements.

## 3 **Maintaining Occupational Exposures ALARA (83728)**

### 3.1 Inspection Scope

The inspectors attempted to determine whether the licensee had established and was maintaining adequate programmatic controls and procedures that reasonably ensure compliance with the requirements of 10 CFR Part 20.

### 3.2 Observations and Findings

#### a. Implementation of ALARA Program

The inspectors reviewed the licensee's As Low As Reasonably Achievable (ALARA) program to ensure that the licensee was aggressively reducing occupational radiation exposures. The projected dose for each department was based on the specific tasks assigned to the department for the year, the measured radiation levels in the work area, and the projected time to complete the task. The projection also takes into account the time spent in areas near the work site with lower radiation levels, and the transit time for workers going to and from the work area.

The inspectors reviewed the licensee's 2014 ALARA dose goals and compared the department goals to the final departmental exposure. The projected dose budget for calendar year 2014 was 1,527 millirem. The actual collective exposure for 2014 was 1,221 millirem. Total radiation exposure for each department was below the goal established at the beginning of the year. The inspectors also reviewed the licensee's 2015 ALARA goals and noted that the goal for radiation exposure was 1,347 millirem, 180 millirem lower than the 2014 goal. In summary, the inspectors concluded that the licensee continued to implement an ALARA program in an effort to monitor and control occupational exposures.

#### b. Annual Program Reviews

Regulation 10 CFR 20.1101(c) stipulates that licensees shall periodically (at least annually) review the radiation protection program content and implementation. The licensee used its quality assurance audit program to conduct these regulation-required program reviews. The inspectors reviewed audits of the radiation protection program which were performed by the licensee as required by the site quality assurance program. The licensee's Radiation Protection & Radioactive Materials Control audit, SCES-007-13, was completed on August 22, 2013. The Environmental and Offsite Dose Calculation Manual audit, SCES-009-14, was completed on November 20, 2014. In

summary, the inspectors concluded that the licensee was conducting annual program reviews in accordance with regulatory requirements.

In addition, the inspectors reviewed the audits for the identification of problems, weaknesses, and the quality of the radiation protection program and its subprograms, and that the corrective actions, as required, were timely and technically acceptable. The inspectors reviewed the following Nuclear Notifications to assess the licensee's ability to identify, resolve, and prevent problems: 202523890, 202534417, 202492083, 202527318, 202497771, 202257316, 202527317, 202516047, and 202514382. The inspectors did not identify any regulatory issues. The inspectors concluded that the licensee was implementing its corrective action program in the radiation protection program area in accordance with regulatory, license, and procedural requirements.

### 3.3 Conclusions

The licensee implemented its radiation protection program in accordance with 10 CFR Part 20, license, and procedural requirements. In particular, the inspectors concluded that the licensee continued to implement an ALARA program in an effort to monitor and control occupational exposures. The licensee also conducted annual program reviews in accordance with regulatory requirements. Further, the licensee was implementing its corrective action program in the radiation protection program area in accordance with regulatory, license, and procedural requirements.

## 4 **Solid Radioactive Waste Management and Transportation of Radioactive Materials (86750)**

### 4.1 Inspection Scope

The inspectors reviewed the licensee's waste management and radioactive material transportation programs to ensure compliance with license and regulatory requirements.

### 4.2 Observations and Findings

The inspectors reviewed records for shipment of "legacy" wastes from the site. Legacy wastes were considered to be wastes that had accumulated during plant operations or resin-type material that was in the plant during the final operation period. For the period of January 1, 2014, through December 31, 2014, the licensee made 48 shipments containing approximately 55,000 cubic feet of material to the EnergySolutions facility in Clive, Utah. For the same time period, the licensee made seven shipments of waste with a volume of approximately 15,000 cubic feet to the Waste Control Specialists facility in Andrews, Texas.

To ensure compliance with applicable NRC and Department of Transportation (DOT) regulations, the licensee utilized approved shipping procedures. The procedures require that the licensee have documentation on file that certifies that any container used for shipment meets package qualifications and that vendor-provided procedures for use of the container were followed. The shipment paperwork included documentation that manifested information was consistent with the approved waste profile. Documents indicated that the container had been inspected by the licensee and determined to be in compliance with DOT packaging requirements. Radiation/contamination survey data

sheets were noted to verify compliance with applicable limits as outlined in regulation 10 CFR 71.47. Emergency response information was supplied with all shipments.

The inspector reviewed shipping checklists and documentation for two shipments of waste to the disposal site in Utah and two shipments of waste to the disposal site in Texas. The shipments to the Utah site, RMS-14-128 and RMS-14-147, consisted of wastes containing low levels of radioactivity. The shipments to the Texas site, RMS-14-128 and RMS-14-147, were shipments of low specific activity resin from the plant systems. The inspectors noted that documentation confirmed that the disposal site criteria and classification were determined by established procedures. Required direct radiation and contamination surveys were conducted and results were acceptable for this shipment. A vehicle inspection checklist was completed prior to approval for the vehicle to depart the site. A review of documents for these selected shipments indicated that license and regulatory requirements were met. The inspectors also verified that individuals involved in the approval of the shipments were properly trained and that training was maintained within regulatory requirements. Prior to departure, a signature by the licensee, in their oversight role, was required. The signature indicated that all documents associated with the shipment have been completed in accordance with licensee procedures, and that the material is packaged, characterized, classified, marked, labeled, placarded and transported in accordance with regulatory requirements of both the NRC and DOT.

#### 4.3 Conclusions

The licensee was characterizing, packaging, and shipping radioactive wastes in accordance with regulatory and procedure requirements.

#### 5 **Exit Meeting**

On January 15, 2015, the inspectors presented the final inspection results to 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.



## **SUPPLEMENTAL INSPECTION INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee Personnel

T. Adler, Principle Manager, Nuclear Engineering Programs  
C. Ahola, Radiation Protection Manager  
L. Bosch, Manager, Oversight and Nuclear Safety Concerns  
J. Brabec, Manager, Regulatory Affairs and Emergency Preparedness  
J. Carey, Supervisor, Radiation Protection  
S. Collins, Supervisor, Shipping  
J. Davis, Manager, Operations and Training  
D. Evans, Senior Nuclear Engineer, Regulatory Affairs and Emergency Preparedness  
K. Gallion, Manager, Emergency Preparedness Planning  
S. Hoque, Manager, Chemistry and Hazmat  
J. Janke, Manager, Radiological Control and Chemistry  
J. Madigan, Director, Technical Advisor to Chief Nuclear Officer  
B. Metz, Fire Marshall  
M. Moran, Manager, Engineering  
J. Peattie, Manager, Maintenance and Work Control  
M. Reitzler, Manager, Work Control  
R. Quam, Manager, Security  
S. Sarver, Manager, Security Operations  
M. Shackelford, Manager, Training  
R. Sholler, Shutdown Plant Manager  
A. Sterdis, Manager, Regulatory Affairs

### **INSPECTION PROCEDURES USED**

IP 62801 Maintenance and Surveillance at Permanently Shutdown Reactors  
IP 71801 Decommissioning Performance and Status Review at Permanently  
Shutdown Reactors  
IP 83728 Maintaining Occupational Exposures ALARA  
IP 86750 Solid Radioactive Waste Management and Transportation of  
Radioactive Materials

## ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

None

Discussed

None

## LIST OF ACRONYMS

ADAMS	Agencywide Documents Access and Management System
ALARA	As Low As Reasonably Achievable
CFR	Code of Federal Regulations
DOT	U.S. Department of Transportation
IP	Inspection Procedure
NRC	U.S. Nuclear Regulatory Commission
PSDAR	Post-Shutdown Decommissioning Activities Report
SFP	spent fuel pool
SONGS	San Onofre Nuclear Generating Station