

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos.: 50-206/93-37, 50-361/93-37, 50-362/93-37

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

Licensee: Southern California Edison Company (SCE)  
Irvine Operations Center  
23 Parker Street  
Irvine, California 92718

Facility Name: San Onofre Nuclear Generating Station (SONGS)  
Units 1, 2 and 3

Inspection at: SONGS Site, San Diego County, California

Inspection Conducted: November 29 - December 3, 1993

Inspector: Virgil L. Beaston 9 Dec 93  
V. L. Beaston, Reactor Radiation Specialist Date Signed

Approved by: James H. Reese for 12/10/93  
James H. Reese, Chief Date Signed  
Facilities Radiological Protection Branch

Inspection Summary:

Areas Inspected: Routine, announced inspection of the licensee's programs for solid radioactive waste management and transportation of radioactive materials, and review of followup items. Inspection procedures (IP) 86750, 92701, and 92702 were used.

Results: In the areas inspected, the licensee's programs appeared fully capable of meeting their safety objectives. The knowledge and technical proficiency of the individuals supervising the licensee's Radioactive Material Control organization and the licensee's methods for ensuring radioactive wastes are properly classified were considered program strengths. No violations or deviations were identified in the areas inspected. Five open items were closed. One unresolved item remains unresolved (Section 2.b).

## DETAILS

### 1. Persons Contacted

#### SCE Personnel

- \*T. Adler, Health Physics (HP) Supervisor Units 2/3
- P. Elliott, Radioactive Material Control (RMC) General Foreman
- \*S. Enright, Supervisor of Radioactive Material Control
- M. Farmer, Radioactive Material Control Supervisor
- \*J. Fee, Assistant HP Manager (Acting Manager Site HP)
- \*W. Frick, Assessment Supervisor
- \*G. Gibson, On-site Nuclear Licensing
- \*R. Krieger, Vice President, Nuclear Generation
- \*K. O'Connor, Construction Manager
- \*S. Schofield, Health Physics Engineering Supervisor
- \*R. Stoker, Independent Safety Engineering Group, Senior Engineer
- \*H. Wood, Quality Assurance Engineer

#### Others

- \*J. Russell, NRC Resident Inspector
- \*D. Solorio, NRC Resident Inspector

(\*) Denotes those individuals who were at the exit meeting on December 3, 1993. Additional licensee personnel were contacted and present at the exit meeting, but are not reflected in the above listing.

### 2. Followup of Previous Inspection Findings (IP 92701 and IP 92702)

- a. Enforcement Items 50-206/93-06-01 (Closed), 50-206/93-06-02 (Closed), 50-206/93-06-03 (Closed), 50-206/93-06-04 (Closed), and 50-206/93-06-05 (Closed)

These five inspection followup items resulted from an NRC special inspection conducted during the period March 1-5, 1993, and April 5-9, 1993 (NRC Inspection Report 50-206/93-06, dated May 24, 1993). This special inspection was conducted to review an unplanned extremity exposure that occurred when a worker picked up a highly radioactive metal object to examine it.

Item 50-206/93-06-01 concerned the licensee's failure to perform a survey of the highly radioactive object prior to the worker's handling of the object. The failure to survey constituted a violation of 10 CFR 20.201(b).

Items 50-206/93-06-02 and 50-206/93-06-03 concerned two examples of the worker not adhering to the requirements of Radiation Exposure Permit (REP) 71494. The first item involved the worker making a whole body Zone III entry into the lower refueling cavity without continuous health physics (HP) coverage as required by the REP. The second item involved the worker working on an item with

contact dose rates greater than 30 rem/hour (i.e., handling the highly radioactive object addressed in item 50-206/93-06-01). These two items together constituted one violation of the licensee's Technical Specifications (T.S. 6.8.1).

Item 50-206/93-06-04 concerned the licensee's failure to instruct workers on the proper placement and use of personal electronic dosimeters to minimize exposure to radioactive materials. This failure to instruct workers in how to minimize exposure to radioactive materials constituted a violation of 10 CFR 19.12.

Item 50-206/93-06-05 was an inspection followup item to review and verify any corrective actions the licensee identified in Health Physics Division Investigation Report 92-07 titled, "Unplanned Extremity Exposure," dated March 23, 1993.

The licensee had put together a corrective action plan for DIR 92-07 which consisted of 36 action tracking items. Several of these action tracking items contained dozens of subitems (e.g., one action item noted by the inspector contained 44 subitems). The inspector compared the licensee's corrective action plan for DIR 92-07 against the corrective actions listed in the licensee's "Reply to a Notice of Violation," dated July 7, 1993. Based on the comparison of these two documents, the inspector concluded the licensee's corrective action plan had incorporated all the corrective actions contained in the licensee's "Reply to a Notice of Violation."

The inspector reviewed the licensee's corrective action plan with the Health Physics Engineering Supervisor to determine the purpose of each of the action items. At the same time, the supervisor provided the inspector with documentation to verify that the action items in the plan had been completed. The inspector noted the licensee's staff had devoted a lot of time and effort to completing the corrective action plan and addressing contributing causes of the unplanned extremity exposure event. The inspector also noted that the corrective actions developed and implemented by the licensee were much more extensive and thorough than the planned corrective actions identified to the NRC in the licensee's "Reply to a Notice of Violation."

The inspector interviewed several health physics personnel and craft workers to determine if individuals in the plants perceived any changes in the way pre-job planning and briefings for work involving exposure to radioactive materials had been conducted since the licensee implemented its corrective action for the unplanned extremity exposure event. Based on these interviews, the inspector concluded all workers interviewed believed there had been a definite improvement in pre-job planning and briefings for work involving exposure to radioactive material as a result of the licensee's corrective action plan.

Finally, the inspector discussed an audit the licensee was conducting to evaluate the effectiveness of corrective actions from DIR 92-07 with the Health Physics Engineering Supervisor. The inspector learned the audit was reviewing 24 items, and that the audit should be completed near the end of the Unit 3, Cycle 7 refueling outage. The licensee planned to review the results of the audit against established benchmarks of success to determine whether the corrective actions implemented for the unplanned exposure event were effective.

Based upon a review of documents and records, discussions with the Health Physics Engineering Supervisor, and interviews with workers; the inspector concluded the licensee had been thorough in developing and completing its corrective actions identified in DIR 92-07. These five items are considered closed.

b. Item 50-361/93-18-02 (Unresolved)

This item concerned Division Investigation Report DIR-NC-93-03, Revision 1; titled, "Personnel Contamination," dated June 13, 1993. It involved workers who became contaminated while working on DCP 2-6863.01SN to install a flange on a spare six inch pressurizer nozzle.

The inspector was unable to obtain all the facts involved in this personnel contamination event prior to the end of the inspection. Therefore, this item will remain unresolved pending the completion of NRC's review of the event.

An unresolved item is a matter about which more information is necessary to ascertain whether it is acceptable, a violation, or a deviation.

3. Solid Radioactive Waste Management and Transportation of Radioactive Materials (IP 86750)

a. Audits and Appraisals

The inspector reviewed the following audit report and appraisal of the licensee's radioactive waste management and transportation programs:

- Audit Report SCES-314-93, "Packaging and Transport of Radioactive Material," October 1993; and
- Health Physics Appraisal 93-01, "Radioactive Material Control," June 21, 1993.

Both the audit and the appraisal were detailed, and it appeared that the licensee's Site Quality Assurance and its Safety and Licensing Department had been thorough in reviewing San Onofre's

radioactive waste management and transportation programs. The audit had identified three minor issues in the license's transportation program which were promptly addressed.

Based on a review of the above documents, interviews with individuals responsible for the license's radioactive waste management and transportation programs, and independent verification that corrective actions had been completed for the three minor issues identified in the audit; the inspector concluded the licensee's quality assurance and oversight of its radioactive waste management and transportation programs were adequate and effective at identifying program issues and correcting them. The inspector had no concerns in this area.

b. Training and Qualifications of Personnel

The training requirements for personnel involved in the transfer, packaging, and transport of radioactive material are contained in Training Procedure S0123-XXI-1.11.2. This procedure specifically identifies nine blocks of instruction and two "Study Time and Exam" blocks for a total of 100 hours of training and exam time intended to fulfill 49 CFR and NRC IE Notice 79-19 training requirements.

The training and exam blocks are divided into two modules, one for radioactive material handlers, and one for senior radioactive material handlers and radioactive material control technicians. Individuals complete either one or both of these biennial training modules depending on their jobs.

The inspector reviewed Audit Report SCES-314-93, "Packaging and Transport of Radioactive Material," dated October 1993. Audit Plan Item Four, "Personnel Qualifications," concluded based on interviews and training records that all but three contractor personnel involved in either packaging or shipping radioactive waste had completed all the required training for their jobs. The audit also stated the contractor personnel would go to the next scheduled training, and they were under the supervision of qualified personnel for the tasks not currently trained.

Based on the findings in Audit Report SCES-314-93, an interview with the Supervisor of Radioactive Material Control, and a review of Training Procedure S0123-XXI-1.11.2, the inspector had no concerns in this area.

c. Radioactive Waste Management Program

The inspector reviewed the following procedures with the Supervisor of Radioactive Material Control (RMC), the RMC General Foreman, and a RMC Supervisor:

- SO123-VII-8.1, Rev. 13, "Solid Radioactive Waste Sampling for Classification"
- SO123-VII-8.1.2, Rev. 3, "Radioactive Materials Curie Content Determination"
- SO123-VII-8.2.5, Rev. 3, "Shipment of Radioactive Waste for Land Disposal at Barnwell, South Carolina;" and
- SO123-VII-8.2.6, Rev.8, "Solid Waste Loading of the 14-190H (C of C #9159) and 14-210H (C of C #9176) Shipping Casks."

The inspector and the members of the RMC staff listed above reviewed these procedures in detail, and the RMC staff members explained to the inspector the purpose of each of the major steps in these procedures. The Supervisor of RMC also described all the waste streams and the sample points used to classify the waste streams for San Onofre Units 2/3 to the inspector.

The inspector reviewed the licensee's logbook for tracking its 10 CFR Part 61 sample program and noted, at the time of the inspection, the licensee had sent and received 27 waste classification samples to an offsite vender for isotopic analysis during 1993. The inspector also noted the licensee performed its own isotopic analysis for gamma emitting radionuclides on samples sent offsite, and compared the offsite vender's analysis with its own results as an additional quality control measure to ensure any radioactive waste leaving the site was properly classified.

Based on a review of records and procedures, interviews with personnel responsible for packaging and shipping radioactive material, and discussions with the Supervisor of RMC; the inspector concluded the licensee's radioactive waste management program was adequate. The technical proficiency of the individuals supervising the RMC and the licensee's methods for ensuring radioactive wastes are properly classified were considered program strengths. The inspector had no concerns in this area.

d. Shipping of Low-Level Wastes for Disposal, and Transportation

The inspector reviewed shipping paper documentation for compliance with NRC and DOT regulations for the following radioactive waste shipments made by the licensee:

- Shipment No. 93-1201, Dewatered Ion Exchange Bead Resin
- Shipment No. 93-1202, Dewatered Ion Exchange Bead Resin
- Shipment No. 93-1203, Dewatered Ion Exchange Bead Resin

- Shipment No. 93-1204, Dewatered Ion Exchange Bead Resin
- Shipment No. 93-1205, Dewatered Ion Exchange Bead Resin

The inspector also observed shipments No. 93-1204 and No. 93-1205 leave the licensee's facility. Prior to the departure of these two radioactive waste shipments, the inspector independently verified the licensee's dose rate survey's of the driver's compartment in the trucks, and the dose rates at the sides and the rear of the trailers used to haul the radioactive waste. No violations or deviations of regulatory requirements were noted by the inspector.

During an interview with the RMC Supervisor, Shipping and Receiving, the inspector learned the supervisor and the Supervisor of RMC had recently flown to Barnwell, South Carolina; just prior to making the radioactive waste shipments listed above; and met with members of the disposal site to ensure they had the latest requirements for disposal at Barnwell. The RMC Supervisor, Shipping and Receiving, had also taken along copies of all the documentation used by the licensee for radioactive waste shipments to Barnwell, and had members of the Barnwell staff verify the documentation was complete and appropriate.

Based on a review of procedures and records, observations of radioactive waste shipments leaving the licensee's facility, and discussions with the RMC Supervisor, Shipping and Receiving; the inspector concluded the supervisor was very knowledgeable about NRC and DOT shipping regulations, and ensured any radioactive waste shipments made by the licensee complied with federal regulations. The inspector considered the RMC Supervisor to be a strength in the licensee's radioactive waste shipment program. The inspector had no concerns in this area.

Overall, the inspector concluded the licensee's programs for solid radioactive waste management and transportation of radioactive materials was adequate in the areas reviewed. The knowledge and technical proficiency of the individuals supervising the RMC and the licensee's methods for ensuring radioactive waste is properly classified were considered to be program strengths. No violations or deviations were noted by the inspector.

#### 4. Tours

The inspector conducted tours of the licensee's facilities and the Unit 3 containment building. During the tour of the Unit 3 containment building, the inspector was accompanied by a member of the licensee's health physics staff. The inspector checked postings, labelings, and general housekeeping and working conditions. No violations or deviations were noted by the inspector.

5. Exit Interview

The inspector met with members of licensee management at the conclusion of the inspection on December 3, 1993. The scope and findings of the inspection were summarized. The licensee did not identify any of the material presented to the inspector as proprietary. The licensee acknowledged the inspector's observations.