U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos. 50-206/88-04, 50-361/88-04 and 50-362/88-04

Docket Nos. 50-206, 50-361 and 50-362

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

Licensee: Southern California Edison Company
2244 Walnut Grove Avenue
Rosemead, California 91770

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

Inspection at: San Onofre Nuclear Generating Station

Inspector: M. Gillis for — 3/1/88
J. E. Russell, Radiation Specialist — Date Signed

Approved by: M. Gillis for — 3/1/88
G. P. Yuhas, Chief — Date Signed
Facilities Radiological Protection Section

Summary:

Inspection on January 19 through 22, February 1 through 5 and a telephone conversation on February 8, 1988, (Report Nos. 50-206/88-04, 50-361/88-04 and 50-362/88-04)

Areas Inspected:

Routine, unannounced inspection of licensee action on unresolved and open items; allegation follow-up; Units 1, 2 and 3 - solid, liquid and gaseous waste; Units 1, 2 and 3 - transportation; Units 1,2 and 3 facilities and equipment; Unit 1 occupational exposure during extended outages; and including tours of the licensee's facilities. Inspection procedures 30703, 83727, 83729, 84722, 84723, 84724, 86721, 92701 and 92712 were addressed.

Results:

In the eight areas inspected, one violation was identified in one area, involving the execution of the quality assurance program for radioactive waste packaging and transportation activities (paragraph 9) and two open items were identified concerning the release of materials from the restricted area (paragraph 4) and posting of radiation areas (paragraph 5).

DETAILS

1. Persons Contacted

Licensee Personnel

C. McCarthy, Vice President and Site Manager
H. Morgan, Station Manager
P. Knapp, Health Physics (HP) Manager
D. Schone, Site Quality Assurance (QA) Manager
D. Stonecipher, Site Quality Control (QC) Manager
M. Wharton, Assistant Technical Manager
R. Warnock, Assistant HP Manager
J. Madigan, HP Supervisor
K. Helm, Effluent Engineer
S. Brooks, Radioactive Material Control (RMC) General Foreman
C. Couser, Compliance Engineer

NRC Personnel

J. Tatum, Resident Inspector

All of the above noted individuals were present at the exit interview on February 5, 1988. In addition to the individuals identified, the inspector met and held discussions with other members of the licensee's staff.

2. Licensee Action on Reportable Events

Item 50-206/87-02-LO (Closed). The licensee reported that the Yard Sump monitor, RIT-2101, had been isolated and that the required 12 hr sample had been missed. The inspector verified that corrective action, as indicated in the licensee's timely report, was complete and appeared to be effective to prevent recurrence.

Item 50-361/87-17-LO (Closed). The licensee reported that a spurious Fuel Handling Building Isolation System (FHIS) actuation occurred due to condensation in the sample line. The inspector verified that work requests had been issued to provide heat-tracing for both the Unit 2 and 3 monitors. This action appeared to be effective to prevent recurrence.

Item 50-361/87-26-LO (Closed). This event was reviewed and documented in Inspection Report Number 50-361/87-25.

Item 50-362/87-04-LO and L1 (Closed). The licensee reported that effluent samples had not been taken during Steam Generator blowdown to the outfall. The inspector verified that the corrective action indicated in the licensee's report had been taken, personnel had been briefed about the event and procedure S023-9-4.1, Release of the BPS Neutralization Sump to Outfall, had been revised. This appeared to be effective to prevent recurrence.

Item 50-362/87-09-LO (Closed). The licensee reported a spurious Containment Purge Isolation System (CPIS) actuation due to cable movement of monitor 3RT-7856. The inspector verified that cable restraints had been installed to prevent excessive cable movement when the monitor is opened. This appeared to effective to prevent recurrence.

3. Licensee Action on Inspection and Enforcement (IE) Information Notices

The inspector verified that the licensee had received, reviewed and had taken action on IE Information Notices Nos. 87-03, 87-07, 87-31, 87-32 and 87-39.

4. Followup of Allegation RV-88-A-0001 (Closed).

An allegation was received by the Region V office that the licensee had failed to properly survey thermoluminescent dosimeters (TLDs) during the badge exchange on January 4, 1988, after activity had been detected during a "body count" of the bagged dosimeters.

Inspection revealed that an engineering evaluation had been completed on November 9, 1987, which assessed the use of the SCE analytic whole-body counting system and the multi-channel analyzer for surveying TLDs for contamination. The purpose of the evaluation was to find an expeditious method for the survey of TLDs other than the tedious hand frisking method. A change to SO123-VII-7.3.2, Release of Potentially Contaminated Items from the Restricted Area, was approved on November 30, 1987, to use these new methods to release the TLDs. Interviews with licensee personnel indicated that the procedure was first used on December 31, 1987, and January 4, 1988, during the exchange of the "December" badges.

Whole-body counting records revealed that four of the five counts on December 31 and one of the four counts on January 4 indicated plant related isotopes. Statements by involved Dosimetry personnel indicated that the TLDs were placed in plastic bags and counted. Those which indicated activity were taken to operational HP and each TLD individually hand frisked. However, statements by the Assistant HP Manager indicated that the TLDs from January 4 had not been individually frisked but had been improperly released after a frisk of the bags. The Assistant Manager also stated that a change to SO123-VII-7.3.2 had been initiated shortly after the event and that this action had been taken to assure that these problems with improperly releasing TLDs were corrected.

A review of whole-body counting records for the January 29 exchange revealed that two of the four counts indicated plant related isotopes and four of the six multi-channel analyzer counts indicated plant related isotopes although one indicated only Xenon-133. Discussions with Dosimetry personnel indicated that the two batches of bagged TLDs which exhibited activity were taken to operational HP and that these were not individually frisked but only the exterior of the bags were frisked and then released. Also, discussions with the HP Instrumentation technician that operated the multi-channel analyzer revealed that no device had been used to fix the geometry of the bagged TLDs when the counts were made, as would be necessitated by the original engineering analysis which used a

four liter Marinelli flask, but that "a couple of bags were just placed in the counter" and a 300 second count taken.

Discussions with the Dosimetry personnel also indicated that the instructions they had been given on the use of the new methodology had involved only brief verbal instructions to bag the TLDS and count them in the body counter and if activity was indicated to take them to HP for release. Some individuals were unclear as to the requirements for surveying the TLDs and some were unfamiliar with the proper operational methodology for use of the body counter and the multi-channel analyzer.

A review of monthly surveys of the TLD Lab for the last four months indicated no detectable loose activity or external radiation levels above background. Also, the amounts of activity indicated in the whole-body counts and in the multi-channel analyses were low and might not have been detectable by a hand frisk. The problems indicated during the January 29 badge exchange were discussed with the HP Manager and the Dosimetry Supervisor and they indicated that they would take action to assure that personnel were properly instructed on the new procedure and that subsequent batches of TLDs would be released properly. The licensee's action on these problems will be reviewed during a subsequent inspection. This is an open item (50-206/88-04-01).

The allegation that TLDs were improperly surveyed during the January 4 badge exchange was substantiated.

5. Occupational Exposure During Extended Outages, Unit 1

Plans for the upcoming Unit 1 mid-cycle outage were discussed with the Unit 1 HP supervisor, the Unit 1 HP general foreman, the Dosimetry supervisor and the acting RMC supervisor. Estimated manning needs, contractor support, training and scheduled tasks were reviewed. The plans for the Unit 1 spent fuel transshipment to the Units 2/3 spent fuel pools were also reviewed. The unit turbine building, "backyard," fuel handling building and control room were toured.

The inspector attended two transshipment meetings, reviewed the draft transshipment procedure, observed cask pool decontamination work, observed the IF-300 cask which is to be used for the transfers and discussed the transshipment with the responsible Operations and Maintenance Support supervisor. The inspector also attended the pre-job "tailboard" and observed the initiation of a power entry to repair the emergency hatch gasket and perform a local leak rate test.

During a tour of the the Unit 1 "backyard" on January 20, the radiation level at the head level of the inspector adjacent to the water shield around monitor tank RWL-D-21A was found to be a maximum of 4 mrem/hr as indicated on the inspector's Eberline RO-2 ionization survey instrument, serial no. 837, calibrated on November 30, 1987, and due for calibration on February 29, 1988. There was no posting or barrier to indicate that there was a radiation area at this location. Licensee HP procedure SO123-VII-7.4, Posting and Access Control, paragraph 6.1.2.1, states, in part:

"Each accessible area having radiation levels of 2.5 mrem/hr (penetrating i.e., gamma, x-ray or neutron) or greater, shall be identified as a Radiation Area and shall be conspicuously posted with a sign or signs bearing the radiation caution symbol ... and the words:

"CAUTION RADIATION AREA"

The radiation level around tank RWL-D-21A was brought to the attention of licensee HP representatives and prompt action was taken to properly post the area prior to the inspector's departure on January 22. The inspector was informed by the HP Manager during the exit interview that action had been initiated to change survey and posting procedures to assure that surveys allow for the varying heights of individuals. The licensee's actions in this matter will be reviewed during a subsequent inspection. This is an open item (50-206/88-04-02).

No violations or deviations were identified.

6. Solid Waste

The inspector interviewed select RMC personnel including the RMC Supervisor, and was provided a copy of the 1987 Radioactive Waste Summary Report. The report indicated that the total solid radioactive waste production for the three units was 14,961 cubic feet as compared to a goal of 22,500 cubic feet as designated in their PRIDE program. This was compared to more than 19,000 cubic feet produced in 1986 and more than 26,000 cubic feet produced in 1985.

The inspector also reviewed meeting minutes of the Mixed Waste Task Force which has been constituted to determine the types of mixed wastes being produced and develop means for dealing with the wastes. Currently, there are many drums of contaminated waste oil in storage at the Multi-Purpose Handling Facility (MPHF) as well as approximately fifty drums of various contaminated solvents and fluids in storage outside the Units 2/3 truck bay.

The MPHF was toured during the inspection and its implementation as a waste storage and shipment preparation area was discussed with cognizant RMC personnel. The Unit 2/3 30' elevation storage and processing area, the Unit 1 storage and processing areas and the storage and processing areas below A-40 were also toured. On-the-job training of new waste compacting personnel was observed at the Unit 2/3 compacting area.

SCE has not solidified wet radioactive waste since 1985 but maintains a contract to assure that this option will be maintained should it be needed. Currently, resins are dewatered and shipped to Hanford. Observed operations appeared to be in compliance with the requirements of Technical Specification (TS) 3.19 and 4.19 for Unit 1 and TS 3/4.11.3 for Units 2/3.

No violations or deviations were identified.

7. Liquid Waste

The inspector interviewed select HP and Chemistry personnel and was informed that there had been no significant changes to the liquid waste program since the last inspection. Select liquid batch release permits, monitor set-point calculations, sampling records, and pre- and post-release calculations from 1987 were reviewed. Calculations appeared to have been made in accordance with the methodology of the Offsite Dose Calculation Manual (ODCM) and the sampling records and release permits appeared to be complete and in accordance with Unit 1 TSs 3.5.8, 3.15 and 4.15 and Units 2/3 TSs 3/4.11.1 and 3/4.11.4.

Select liquid waste monitor channel checks, source checks, channel calibrations, channel tests and surveillances were reviewed. The records appeared to be complete and in accordance with the requirements of Unit 1 TS 4.1.2 and Units 2/3 TS 3/4.3.3 paragraph 4.3.3.8.1.

Select chemical and radiochemical analyses for both primary and secondary water were reviewed and appeared to be complete and accomplished in accordance with Unit 2/3 TSs 3/4.4.6, 3/4.4.7, and 6.8.4.

More than a dozen select monitors in the Units 2/3 turbine building and radwaste building and the Unit 1 controlled area and control building were examined and their control room readouts observed.

No violations or deviations were identified.

8. Gaseous Waste

The inspector interviewed select HP and Chemistry personnel and was informed that there had been no significant changes to the gaseous waste program since the last inspection. Select gaseous batch and continuous release permits, monitor set-point calculations, sampling records, and pre- and post-release calculations were reviewed. Calculations appeared to have been made in accordance with the methodology of the ODCM and the sampling records and release permits appeared to be complete and in accordance with Unit 1 TSs 3.5.9, 3.16 and 4.6 and Units 2/3 TSs 3/4.11.2, 3/4.11.4 and 3/4.12.

Select instrument isotopic and electronic calibrations, flow calibrations, channel checks, channel functional tests, source checks, and surveillances were reviewed. All records appeared to be complete, timely and in accordance with Unit 1 TS 4.1.3 and Units 2/3 TS 3/4.3.3. Problems with the various fuel handling building and containment purge isolation monitors at Units 2/3 are continuing as are efforts to resolve these.

Select monitors in the Units 2/3 turbine building and radwaste building and the Unit 1 controlled area and control building were examined and their control room readouts observed.

Records of control room and fuel handling building emergency air cleaning system HEPA and charcoal filter testing from 1985 to the present were reviewed. The records appeared to be complete, timely and in accordance

with the requirements of Unit 1 TSs 3.12 and 4.11 and Units 2/3 TSs 3/4.7.5 and 3/4.9.12.

No violations or deviations were identified.

9. Transportation

An unresolved item was identified in Inspection Report 50-362/87-32 to determine the extent to which the QA program was in noncompliance with the requirements of 10CFR71 Subpart H (item 50-362/86-32-02).

The QA Audit and Surveillance Reports indicated below, which covered some areas of radioactive material packaging and transportation, were reviewed.

QA Audit Reports	QA Surveillance Reports	
SCES-040-84	HP-455-84	HP-480-84
SCES-095-84	HP-532-84	HP-619-84
SCES-053-85	HP-793-84	HP-1054-84
NUPAC-I-85	HP-1237-84	HP-201-85
SCES-038-86	HP-290-85	HP-413-85
SCES-026-87	HP-424-85	HP-425-85
SCE-7-87	HP-434-85	HP-042-86
	HP-332-86	HP-362-86
	HP-387-86	HP-542-86
	HP-553-86	G-112-87
	PR-132-87	HP-212-87
	HP-297-87	CH-391-87

In the areas associated with the licensee's packaging and transportation of radioactive waste, one problem requiring the issuance of a Corrective Action Request (CAR) was identified, involving the overfill of a spent resin container. This appeared to have been adequately corrected.

Records of the packaging and transportation of the radioactive waste shipments indicated below, which involved greater than Type A quantities, were reviewed.

II-R-84-1	II-SW-85-1	I-R-86-1	II-R-87-1
II-WS-84-2	II-SW-85-4	II-R-86-1	II-R-87-2
II-R-84-9	II-R-85-5	II-R-86-2	II-R-87-4
	II-R-85-6		
	II-R-85-8		
	II-R-85-9		
	II-R-85-10		

The documentation of these shipments appeared to have been completed in accordance with the requirements of 49 CFR.

The licensee procedures indicated below, which relate to the packaging and transportation of greater than Type A quantities of radioactive material, were reviewed.

SO123-VII-8.2.6	Solid Waste Loading of 14/210H (C of C #9176) Shipping Cask
SO123-VII-8.2.8	Solid Waste Loading of NUPAC 10-142 Shipping Cask
SCE-1-A	Topical Report-Quality Assurance Program
TQAM	San Onofre Units 1, 2 & 3 Quality Assurance Program (Chapters 1, 3, 4, 5, 7 and 8)
QAP N18.04	QA Organization Audits - Scheduling, Planning, Performance, Documentation and Follow-up
QAP N2.19	Qualification of Quality Assurance Organization Auditors

Discussions with licensee QA management representatives relative to the licensee's program to implement the requirements of 10 CFR 71 Subpart H revealed the following. There were no specific procedures or specific requirements within procedures which established QA organization responsibilities for implementation of each of the applicable Subpart H criteria for transport packages. SCE-1-A specifies SCE's QA program but it does not address the applicable criteria for transport packages and there is no subsection which specifically applies to packages, such as exists for fire protection. It was noted that Chapter 8-F of the TQAM established responsibilities for the HP Manager and the Nuclear Fuel Supply Manager but did not clearly establish specific QA organization responsibilities for implementation of each of the specific 10 CFR 71 Subpart H criteria. There were no specific procedures which required the conduct of comprehensive, planned and periodic audits to verify compliance with all aspects of the quality assurance program and to determine the effectiveness of the program in regard to the Subpart H criteria. The QA Manager stated that he believed their Appendix B program covered the general areas of concern of the specific Subpart H subsections and that a specific procedure or a specific periodic audit of those subsections was not required.

The inspector brought to the QA representatives' attention IE Information Notice 84-50 which states in part that the utility QA program must include and address all of the applicable elements for transport packages to meet the regulation, and that they should not assume that the implementing procedures for Appendix B are adequate unless such procedures address transport packages. The QA Manager also stated that he had reevaluated their previously stated position on the applicability of the various Subpart H subsections with respect to packaging of radioactive material (see Inspection Report Nos. 50-206/87-30, 50-361/87-32, and 50-362/87-32) and that they now considered all subsections to be applicable to packaging.

The QA Manager reiterated that, not withstanding the applicability of the subsections, they still considered specific procedures or audits not to be required. He also stated that in their graded approach to auditing, he did not feel that the return from such audits merited their inclusion

in the periodic program. He stated that the Quality Control (QC) division inspectors provided continuous oversight of the packaging and transportation of greater than Type A quantities of radioactive material and that this provided sufficient assurance that the regulations were met. The inspector reviewed training records of those QC inspectors involved in inspections of greater than Type A quantity packages over the last four years. These revealed that the vast majority of QC inspections performed on the packages were done by inspectors that had not received any training in 10CFR71 or 49CFR requirements.

The inspector's review of the above noted audits and surveillances revealed that only three of the Subpart H criteria had ever been reviewed during the audits and that only four of the surveillances had addressed an area involving the packaging and transportion of greater than Type A quantities of radioactive material.

10 CFR 71.101, "Quality assurance requirements" reads, in part:

> "...Each licensee shall establish, maintain, and execute a quality assurance program satisfying each of the applicable criteria of this subpart, and satisfying any specific provisions which are applicable to the licensee's activities including procurement of packaging...."

10 CFR 71.103, "Quality assurance organization" reads, in part:

> "...The licensee shall clearly establish and delineate in writing the authority and duties of persons and organizations performing activities affecting the safety-related functions of structures, systems and components...."

10 CFR 71.105, "Quality assurance program" reads, in part:

> "(a) The licensee shall establish, at the earliest practicable time consistent with the schedule for accomplishing the activities, a quality assurance program which complies with the requirements of this section. The licensee shall document the quality assurance program by written procedures or instructions and shall carry out the program in accordance with those procedures throughout the period during which packaging is used. The licensee shall identify the material and components to be covered by the quality assurance program, the major organizations participating in the program, and the designated functions of these organizations."

10 CFR 71.137, "Audits" reads, in part:

> "The licensee shall carry out a comprehensive system of planned and periodic audits to verify compliance with all aspects of the quality assurance program and to determine the effectiveness of the program. The audits must be performed in accordance with written procedures or checklists by appropriately trained personnel not having direct responsibilities in the areas being audited."

The failure of the licensee's Quality Assurance program procedures to specifically address each of the applicable Subpart H criteria for

execution of their Quality Assurance program for transport packages is an area needing improvement. This is an open item (50-362/88-04-01). The lack of specific procedures or checklists to assure that a comprehensive system of planned and periodic audits, to verify compliance with all applicable aspects of the Quality Assurance program and to determine the effectiveness of the Quality Assurance program for the use of transport packages, is an apparent violation of 10CFR71.137 (50-362/88-04-02).

Subsequent to presenting these findings to the QA management representatives, the inspector was informed that, although the organization believed that they were in compliance with the regulations, it was also believed that a comprehensive review of this area might be beneficial. The inspector was provided a copy of Problem Review Report GO-014-88 which requests that an in-depth audit, specifically addressing the adequacy of QA program procedures to implement Part 71 provisions, be performed during 1988. The inspector was also informed that action will be taken to assure that audits of the Subpart H criteria will be performed on a periodic basis. The QC Manager also informed the inspector that he had requested that material on the requirements of 49 CFR be included in an upcoming training class on high level radwaste shipments.

In this area one violation was identified.

10. Exit Interview

The inspector met with the licensee representatives, denoted in paragraph 1, at the conclusion of the inspection on February 5, 1988. The scope and findings of the inspection were summarized. During the interview the Site QA Manager reiterated his position that, although they intended to perform a review of the 10 CFR 71 criteria this year, they believed that their current program met the requirements of the regulations.