UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION V
1450 MARIA LANE, SUITE 210
WALNUT CREEK, CALIFORNIA 94596-5368

JUN 16 1989

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

Southern California Edison Company
P. O. Box 800
2244 Walnut Grove Avenue
Rosemead, California 91770

Attention: Mr. Kenneth P. Baskin, Vice President
Nuclear Engineering, Safety and Licensing Department

Gentlemen:

SUBJECT: NRC INSPECTION SAN ONOFRE UNITS 1, 2 AND 3

This refers to the inspection conducted by Mr. J. E. Russell of this office on May 8 through 26, 1989, of activities authorized by NRC License Nos. DPR-13, NPF-10 and NPF-15 and to the discussion of our findings held by Mr. Russell with Messrs. C. McCarthy and H. Morgan and other members of your staff at the conclusion of the inspection.

Areas examined during this inspection are described in the enclosed inspection report. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

No violations of NRC requirements were identified as a result of this inspection.

In accordance with 10 CFR 2.790(a), a copy of this letter and the enclosure will be placed in the NRC Public Document Room.

Should you have any questions concerning this inspection, we will be glad to discuss them with you.

Sincerely,

Gregory P. Yuhas, Chief
Emergency Preparedness and
Radiological Protection Branch

Enclosure:
Inspection Report Nos. 50-206/89-15, 50-361/89-15 and 50-362/89-15

cc w/enclosure:
D. J. Fogarty, SCE
C. B. McCarthy, SCE (San Clemente)
H. E. Morgan, SCE (San Clemente)
State of CA

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos. 50-206/89-15, 50-361/89-15 and 50-362/89-15

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; San Clemente, CA

Inspection conducted: May 8 through 26, 1989

Inspector: J. Russell
J. Russell, Radiation Specialist — Date Signed: 6-15-89

Approved by: Carlos M. Garcia
E. Garcia, Acting Chief
Facilities Radiological Protection Section — Date Signed: June 16, 1989

Summary:

a. Areas Inspected:

This was a routine, unannounced inspection covering in-office review of licensee events, written reports of non-routine events; followup of unresolved and open items; in-office review of periodic and special reports; occupational exposure; and radwaste systems and radiological environmental monitoring. The inspection included tours of the licensee's facilities. Inspection procedures 90712, 92700, 92701, 90713, 83750, 84750, and 30703 were covered.

b. Results:

In the areas inspected, the licensee's programs appeared adequate to the accomplishment of their safety objectives. Strengths were exhibited in the occupational exposure control, radioactive waste and environmental monitoring programs, as detailed in paragraphs 7 and 8. However, weakness was evident in the Post-Accident Sampling program, as detailed in paragraph 4. An unresolved item involving a hot particle exposure was identified, as detailed in paragraph 7.

DETAILS

1. Persons Contacted

Licensee Personnel

C. McCarthy, Vice President and Site Manager
H. Morgan, Station Manager
P. Knapp, Health Physics (HP) Manager
R. Waldo, Assistant Technical Manager
R. Reiss, Quality Assurance (QA) Supervisor
D. Brevig, Onsite Nuclear Licensing (ONL) Supervisor
R. Plappert, Compliance Supervisor
J. Fee, Assistant Operational HP Manager
E. Goldin, Acting Assistant Technical HP Manager

All the above noted individuals were present at the exit interview on May 26, 1989. In addition to the individuals identified, the inspector met and held discussions with other members of the licensee's staff.

2. In-Office Review of Licensee Events

Item 50-361/89-03-LO (Closed). This event involved a spurious Control Room Isolation System (CRIS) actuation due to a component failure within a monitor which resulted in an instrument failure alarm. The licensee appeared to have taken expeditious action to identify and replace the failed switch. The switch was also sent to a laboratory for additional analysis. The inspector had no further questions in this matter.

3. Followup of Written Reports of Nonroutine Events (92700)

Item 50-206/89-09-LO (Closed). This event involved the failure to complete several 31-day surveillances for determining cumulative and projected doses from liquid and gaseous effluents in accordance with the requirements of Technical Specification (TS) 4.0.2. The inspector determined that the delinquent surveillances, when subsequently performed, were within the TS limits. Chemistry Procedure SO123-III-5.10, Liquid and Gaseous Effluent Dose Determinations (Manual Method), was revised to address the need to perform the surveillances and the effluent engineers were briefed on the event. These actions appeared sufficient to prevent recurrence.

Item 50-361/87-02-LO (Closed). This event involved the Turbine Building Sump Monitor, 2RE-7821, sample line which was found plugged with debris. The inspector determined that a temporary modification to the sample line had maintained flow to the monitor since the problem was discovered and Proposed Facility Change (PFC) 2-88-6747 had just been approved to install a permanent modification to assure flow. These actions appeared sufficient to prevent recurrence.

Item 50-361/87-22-LO (Closed). This event involved a spurious Fuel Handling Isolation System (FHIS) actuation due to an electrical noise

spike. The inspector verified that a root cause evaluation had been completed which determined that these noise spikes were caused by induced currents from adjacent monitor cabling. PFC 2/3-88-048 had been approved to install electronic noise suppression networks on all susceptible monitor circuitry. These actions appeared adequate to prevent recurrence.

Item 50-361/88-07-LO (Open). This event involved the discovery that the Containment Purge Isolation System (CPIS) radiation monitors were nonlinear in the upper portion of their range. The inspector determined that the root cause evaluation for this event was still in process.

Item 50-361/88-13-LO (Closed). This event involved a spurious FHIS actuation during restoration testing for return to service of the monitor. The inspector determined that the root cause evaluation for this event had been completed and that it identified component failures as the cause. These components were replaced. As these electronic components are normally dependable, no further action appeared necessary.

Item 50-361/88-16-LO (Closed). This event involved a spurious CPIS actuation due to induced current from a FHIS cable. This event was equivalent to that identified in item 50-361/87-22-LO, above, and was correspondingly resolved.

Item 50-361/88-18-LO (Closed). This event involved the inadvertent discarding of Turbine Building Sump samples contrary to the requirements of TS 4.11.1. The inspector determined that Chemistry Procedures SO123-III-0.5, -0.9.23 and -5.1.23 had been revised to provide additional labelling instructions, increased guidance for completion of Shift Requirements Sheets and instruction for maintenance of the effluent logs. This event was also reviewed with appropriate Chemistry personnel. These actions appeared sufficient to prevent recurrence.

Item 50-361/89-06-LO (Closed). This event involved a spurious Control Room Isolation System (CRIS) actuation due to an interruption in power during a transfer from Unit 2 to 3. Operations Procedure SO23-3-2.24.6, Control Room Airborne Process Radiation Monitoring System Operation (ESF), failed to identify that such an actuation was to be expected if the monitor was in the bypass position. The inspector verified that the procedure had been changed to provide guidance on the use of the bypass switch. This action appeared sufficient to prevent recurrence.

4. Followup of Licensee Action on Unresolved and Open Items (92701)

Items 50-206, 361, & 362/IN-88-63 (Closed). The inspector verified that the licensee had received, reviewed and taken action on Information Notice 88-63.

Items 50-206, 361, & 362/IN-88-79 (Closed). The inspector verified that the licensee had received, reviewed and taken action on Information Notice 88-79.

Item 50-206/85-29-01 (Open). This inspector identified, followup item involved the completion of efforts to dispose of high level waste

resulting from the decontamination of a NRC certified cask. The inspector determined that the licensee's corporate office was still pursuing approval for disposal with NRC headquarters.

Item 50-361/87-18-01 (Closed). This inspector identified, followup item involved the validation and verification of safety affecting, computer software used for HP applications. The inspector verified that the project to validate and verify the software had been successfully completed and interviewed the responsible personnel in Nuclear Information Services. The project's scope and substance were examined and appeared complete and thorough. The inspector had no further questions in this matter.

Items 50-206, 361 & 362/89-PS-01 (Closed). These supervisor directed items required the review of the functional status of the Post-Accident Sampling Systems (PASSs). The responsible system engineer, appropriate Chemistry personnel, and ONL representatives were interviewed; the PASS skids and associated equipment were examined; and applicable procedures, system diagrams, reports, records and surveillances were reviewed.

Licensee Technical division representatives noted that there have been continuing problems with the PASS inline instrumentation regarding both instrument operability and maintenance of calibration. The following outstanding Site Problem Reports (SPRs) were reviewed:

Unit 1	#860492	Surge vessel level reads 6% when empty.
"	#861149	Sample station has insufficient isolation, vent and drain capability.
"	#870287	Instrument air tubing to PASS skid has insufficient isolation.
"	#880824	Draining of the liquid sample vessel to less than 20% appears to partially drain the transmitter reference leg.
"	#881228	Replace containment atmosphere sample flow transmitter.
"	#890119	Conflict in pH meter acceptance criteria.
Units 2/3	#871290	H_2 meter cell fills with service water when placed in operation.
"	#870848	Control Room has no controled PASS skid drawings.
"	#881001	Level and pressure transmitters improperly mounted; no practical way to fill and vent; no test tees available; and isolation and bypass valves inaccessible.
"	#880492	pH meter routinely fails monthly operability test.
"	#880957	Sample isolation valves position indicators routinely fail.

Other licensee reports also noted that the last successful operation of the Units 2/3 inline Boron analyzer was 8-13-87 and the RCS activity analyzer was 5-11-88. Additionally, Site Work Request (SWR) #3521 stated that the Unit 1 Boronometer has provided acceptable (+ or - 100 ppm)

Boron readings only 50% of the time due to extreme temperature sensitivity; that the dissolved Hydrogen and Oxygen meters are sensitive to pressure spikes and require replacement; and that plant makeup water is supplied to the skid is at excessive pressure causing PSV-2031 to lift and discharge water into the sample station sump. SWR #6751 indicates identical problems with the Boronometer and Hydrogen and Oxygen analyzers at Units 2/3. Both SWRs were prepared in August 1988.

A review of P & I diagrams revealed that both PASS skids are down stream of air and solenoid operated valves which fail closed on loss of instrument air or non-vital power, respectively. These failure modes and results are detailed in the Safety Analysis Reports (SARs).

The PASS program is defined in the following procedures:

SO123-PS-1, PASS Program

SO123-III-8, Post-Accident Sampling Program and Analytical Requirements

SO123-III-8.1, Post-Accident Sampling System and Unit 1 Dedicated Safe Shutdown System Routine Surveillances

SO123-III-8.8, Alternate Methods of Post-Accident Parameter Analysis

These were reviewed as well as select surveillances performed since October 1988. The Alternate Methods involved both grab sampling and calculations based on various other instrument readings, e.g. those from containment dome monitors, various tank levels, containment H_2 monitors, etc. It was noted that; if a particular paramater was unobtainable, e.g. Units 2/3 Boron concentrations; it has been the licensee's practice to note on the surveillance record that alternate methods were available and not to perform any of the alternate methodologies such as grab sampling. A representative of the Chemistry department stated that this practice was changed in May 1989 to actually perform one of the calculational alternates should inline instrumentation be unavailable.

SO123-III-8.1 provided instructions should the PASS be declared inoperable due to the unavailability of the primary and all alternate methodologies. Such an eventuality appeared extremely unlikely since this would entail, for the requisite analyses as defined in NUREG-0737, the loss of TS required containment Hydrogen and radiation monitoring, RCS temperature and pressure indication and the absence of knowledge of previous RCS Boron concentrations.

Design basis documentation which verified compliance with the time and dose criteria of NUREG-0737 was requested of the licensee. Adequate supporting documents could be provided only for operation of and doses associated with the inline systems. The undiluted grab sample calculations failed to provide an estimate of extremity doses although sufficient information was available to provide assurance of meeting the whole body dose criterium. Also, a "dose rate" and "allowable time" calculation was provided for use of the dilute Reactor Coolant System (RCS) sampling syringe but no cumulative doses were calculated for the

actual performance of the analyses. Indeed, no time or dose calculation were available which indicated any of the alternate sampling procedures could be performed within the NUREG-0737 criteria. It was clear, however, that the calculational methodologies could easily meet the time and dose criteria.

Licensee submittals, dated February 24, March 4, and April 14 and 19, 1983, delineated their PASS program. These provided the alternate methodologies, a specialized definition of system operability and variable surveillance criteria. These were accepted and issued as Ammendments 17 and 5 for Units 1 and 2/3, respectively, with various qualifications including the specific revision that:

"...The PASS is considered operable if:

"1. Routine surveillances described in Surveillance Procedure (S0123-III-8.1) are conducted at the prescribed intervals when plant conditions permit and any necessary actions are taken expeditiously to make the system meet the approved acceptance criteria.

"2. In the event of a PASS component malfunction, the specific alternate method of sampling listed in the 'Alternate Methods of Post-Accident Parameter Sampling' procedure (S0123-III-8.8) is available and measures are being taken to effect repairs to the component that has malfunctioned.

"3. Calibration of PASS Instruments is current...."

These and other exceptions and considerations were specified in the Safety Evaluation of the referenced ammendments. No TS requirement for operability or surveillance of the PASSs were incorporated into the TS. However, TS 6.8, Procedures and Programs, required the establishment, implementation and maintenance of a PASS program, specifically, TS 6.8.4 reads, in part:

"The following programs shall be established, implemented, and maintained:

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.
.

"d. Post-Accident Sampling

A program which will ensure the capability to obtain and analyze reactor coolant, radioactive iodines and particulates in plant gaseous effluents, and containment atmosphere samples under accident conditions. The program shall include the training of personnel, the procedures for sampling and analysis and the provisions for maintenance of sampling and analysis equipment."

The SONGS PASS programs were subsequently reviewed during routine inspections and found to be acceptable.

Lacking specific operational requirements in the TSs and noting the latitude allowed by the Safety Evaluation, the SONGS PASS program appeared to meet the requirements of TS 6.8.4 and to be operable as defined by the above noted Safety Evaluation. However, it was clear that some of the PASS inline instrumentation was seldom operational, that sampling may not be possible on loss of instrument air or non-vital power, that alternate grab sampling may not be possible within the time and dose limitations specified in NUREG-0737, and that the alternate methods which actually maintain the system operational do not involve sampling. These observations were brought to licensee management attention during the inspection and at the exit interivew.

The inspector had no further questions in this matter.

Item 50-206/89-08-02 (Closed). This unresolved item involved problems identified during the backflush of the letdown demineralizers and the need to determine whether the use of Operations Procedure SO123-0-23, Control of System Alignments, for such evolutions is in accordance with the requirements of TS 6.5 and 6.8 and the licensee's QA and Administrative procedures.

The following documents were reviewed:

Topical Quality Assurance Manual (TQAM) Chapter 1-C, Quality Planning (Instructions and Procedures)

TQAM Chapter 5-A, Procedures and Instructions

Administrative Procedure SO123-VI-1, Documents - Review and Approval Process for Site Orders, Procedures and Instructions

Operations Procedure SO123-0-20, Uses of Procedures

The use of the Attachment to SO123-0-23 to perform the demineralizer backflush operation appeared to be in compliance with the letter of the requirements of the above documents and TS 6.5.2, Technical Review and Control. It was also noted that a Temporary Change Notice (TCN) had been issued to SO123-0-23 on April 20, 1989, to require interdisciplinary review for evolutions that require the participation of other departments.

The inspector had no further questions in this matter.

5. Semiannual Effluent Release Reports (90713)

An in-office review of the July-December 1988 Semiannual Effluent Release Report, submitted in accordance with the requirements of TSs 6.9.1.8 and 6.9.1.9, was performed. Radioactive releases and resulting doses for the period appeared to be below the limits of TSs 3.15, 3.16 and 3.17, Unit 1, and 3/4.11, Units 2/3, and in accordance with design predictions. Liquid and gaseous releases were low. Quarterly summaries of hourly meteorological data, providing a listing of wind speed and wind direction by stability class, were supplied in the report. The assessment of doses to offsite members of the public appeared to be performed in accordance

with the methodology specified in the Offsite Dose Calculation Manuals (ODCMs) and were within the specified limits. No changes to the Units 1 and 2/3 ODCMs were documented. A change to the Process Control Program (PCP) was documented and appeared to have been appropriately accomplished. No unplanned releases were noted. Radioactive waste shipments were documented and included nine of dewatered resin. Thirteen effluent monitors were noted as having been out of service for greater than thirty days, many of these were due to flow monitor problems. No information contained within the report appeared to be classifiable as an abnormal occurrence.

The licensee seemed to be maintaining their previous level of performance in this area and their program appeared adequate to the accomplishment of its safety objectives. No violations or deviations were identified.

6. Annual Radiological Environmental Operating Report (90713)

An in-office review of the timely 1988 Annual Radiological Environmental Operating Report, submitted in accordance with the requirements of TSs 6.9.1.6 and 6.9.1.7, was performed. The report provided data, interpretations and analyses of radiological environmental samples and measurements, made during the period, in accordance with the program described in Unit 1 TSs 3.18 and 4.18 and Units 2/3 TS 3/4.12. Comparison with preoperational data and previous environmental surveillance reports supported the conclusion that airborne radioactivity, direct radiation and food crops contamination; among other dose pathways from the environment to man; did not significantly impact on plant environs. The report summarized data in accordance with the format of Regulatory Guide (RG) 4.8 (1975).

However, two direct radiation monitoring locations, just inside the site boundary adjacent to the Multi-Purpose Handling Facility (MPHF), recorded doses which exceeded the control location doses by greater than 25%. These doses were investigated and attributed to packaged radioactive materials stored adjacent to the monitoring locations. These doses appeared to have had a negligible impact offsite. The presence of plant related activity was found in indicator samples which in some cases; i.e. soil, kelp and marine animals; exceeded the levels of activity in control samples. Their dose impact appeared negligible and there seemed to be no indication of build-up. All reported sample results were below regulatory limits.

The annual report included maps of the monitoring locations and results of licensee participation in the interlaboratory comparison program. Sample analyses appeared to achieve LLDs at or below the levels required by the TSs. The land use census noted two areas as having changed from the 1987 report. Deviations from sampling requirements were tabulated; these appeared to have been minor in nature and to have had a negligible impact on the sampling results.

The licensee seemed to be maintaining their previous level of performance in this area and their program appeared adequate to the accomplishment of its safety objectives. No violations or deviations were identified.

7. Occupational Exposure (83750)

SCE QA Audit Reports SCES-016-88 and 030-88 and QA Surveillance Reports SOS-002-88, 009-88, 014-88, 039-88, 042-88, 066-88, 088-88, 108-88, 112-88, 113-88, 141-88, 151-88, 161-88, 168-88, 198-88, 251-88, 263-88, 271-88, 279-88, and 022-89; were reviewed. These covered areas of occupational exposure control and were performed during the last year. Corrective Action Requests (CARS) involving high radiation area control, assignment of airborne radioactivity exposures, contamination control, and posting of radiation areas were issued as a result of these reviews as well as numerous Problem Review Reports (PRRs) which detailed minor deficiencies. These appeared to have been appropriately addressed and corrective actions appeared timely and technically correct. Personnel performing the audits appeared experienced and qualified in accordance with the requirements of ANSI/ASME N45.2.23-1978, Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants.

Changes in the organization, personnel, facilities, equipment, programs and procedures were discussed with the cognizant area supervisors, and assistant HP managers. It was noted that a new crew system was being implemented in Operational HP which would assign specific areas of responsibility to each crew for extended periods. A new, controlled storage area was also being prepared in parking lot #1, next to the MPHF, for storing material with a high probability for having low levels of contamination and as a staging area for extended surveys of items leaving the protected area. Also, a Performance Enhancement Team, composed of four HP engineers, had recently been instituted to perform in-house audits and surveillances directed at reducing exposures and improving the way the HP organization does business. A number of new pieces of equipment were being examined for possible use in the HP program including an ionized air shower for removing noble gas from personnel, tool contamination monitors and bag monitors. A new thermoluminescent dosimeter (TLD) irradiator had been put into service.

Plans for the upcomming Unit 2 outage were discussed with the Unit 2/3 HP supervisor, the Dosimetry supervisor, the ALARA supervisor and the RMC supervisor. Estimated manning needs, contractor support, training and scheduled tasks were reviewed. It was noted that a new Site Integrated Scheduling System had been instituted at Units 2/3 in an effort to improve scheduling efficiency. This computer based system tracks all work on both a long and short term basis and separately follows radiological work. The input to this system is generated by a Radiological Work-In-Progress meeting between the maintenance supervisors and an operational HP representative from the Planning and Performance Group (PPG). The PPG, as noted in previous inspections, is the responsible interface group within HP which coordinates HP support and it will again perform this function for the upcomming Unit 2 outage.

The HP training and qualification program did not appear to have changed significantly from that delineated in previous inspection reports. The SONGS training program has been fully accredited by INPO in all areas. There were two junior HP technicians in training at the time of the inspection. Contract technician training was indicated to be essentially as previously described, involving Red Badge and Hot Particle training as

well as the required completion of a qualification manual. Approximately a dozen technicians were interviewed during the course of the inspection and all appeared knowledgeable, familiar with the radiological conditions in their various areas, and cognizant of responsibilities.

The external exposure control program was examined by observation, discussion with responsible personnel and review of select documents. The SONGS Dosimetry organization was fully NVLAP accredited, as noted in previous reports, and was recently recertified subsequent to a June 1988 on-site assessment.

The criteria for utilization and placement of personnel monitoring are specified in:

SO123-VII-4, Personnel Monitoring Program

SO123-VII-4.1, Personnel Monitoring Records

SO123-VII-4.7, Red Badge Zone Access Control

SO123-VII-4.8, External Radiation Dosimetry Program

Current copies of the procedures were reviewed. The Dosimetry supervisor, HP foremen, various HP technicians and Dosimetry personnel were interviewed. Select daily Personnel Radiation Exposure Monitoring Summary (REMS) Reports, External Dosimetry Investigations and dose evaluations, Exposure Limit Extentions, licensee equivalents to Forms NRC-4 and 5 and termination letters were reviewed covering the period of the inspection except for the dosimetry investigations and dose evaluations which covered the period of June 1988 to date. No exposures in excess of 10 CFR 20.101, Radiation dose standards for individuals in restricted areas, limits were noted. It was also noted that no minors have been permitted to work in the restricted area.

During the course of the inspection; the Unit 2 containment, the Units 2/3 Radwaste Building, the Safety Equipment Buildings, the Fuel Handling Buildings, the Penetration Buildings, the Unit 1 Containment and backyard area and various radioactive material storage and processing areas were toured. Housekeeping in these areas appeared good. Radiation and high radiation areas appeared to be appropriately posted in accordance with the requirements of 10 CFR 20.203, Caution signs, labels, signals and controls, and licensee HP procedure SO123-VII-7.4, Posting. General area and maximum contact dose rates were specified which corresponded with the readings obtained by the inspector using a model RO-2 ionization chamber, serial number 4042 calibrated on 4-18-89 and due for calibration on 10-18-89, with two minor exceptions which were expeditiously corrected when brought to the licensee's attention by the inspector. Select Maintenance Orders, Radiation Exposure Permits (REPs), REP requests, surveys, ALARA reviews, and ALARA Pre-Job Exposure Estimates were reviewed. All appeared to have been completed in accordance with the applicable site procedures.

The inspector observed work in the areas indicated above and noted personnel were appropriately wearing dosimetry. Workers interviewed were

generally aware of the requirements of the REP's under which they were working, their personal exposure totals and limits and the need to perform work such that radiation exposures are ALARA.

The licensee's internal exposure control program was examined by review of select documents and interviews with responsible personnel. The log of the top 100 personnel with calculated exposures to airborne radioactivity, airborne radioactivity surveys, vendor calibrations of the whole body counters and the placement of air sampling equipment was reviewed for the period of the inspection and appeared to have been completed in accordance with program requirements. Also reviewed were the currently implemented versions of the following procedures:

SO123-VII-4.2, Internal Dosimetry Program

SO123-VII-4.2.1, Operation of the Analytical Whole Body Counting System

SO123-VII-4.2.1.2, Operation of Quicky Model III Whole Body Counter

No overexposures to airborne radioactive material in excess of the 40 MPC-hr investigation level were noted. Program implementation appeared to be in compliance with the requirements of 10CFR20.103, Exposure of individuals to concentrations of radioactive materials in air in restricted areas.

During the tours noted above, all radioactive material appeared to be labelled in accordance with SO123-VII-7.4.1, Radioactive Material Container Labeling and 10 CFR 20.203. Monitoring instrumentation observed was in current calibration and had been performance checked. Current contamination surveys were also reviewed and appeared complete. As delineated in Inspection Reports 50-206, 361 & 362/88-23, 88-24 & 88-26 and 50-206, 361 & 362/89-08, 89-08 & 89-08; the licensee QA organization had previously identified a problem with the control of radioactive material in that some items with low levels of contamination were getting out of the controlled area and some had been found in an uncontrolled area at the "Mesa" storage facilities. Since the conclusion of the last inspection, approximately fifteen additional slightly contaminated items have been identified by a team of four HP technicians assigned to perform continuous surveys of suspect materials at the Mesa. The most highly contaminated of these had 3000 corrected counts-per-minute fixed on one item and 3000 corrected counts-per-minute removable on another. A 2.8E-2 microcurie particle of mixed fission products was also found on the clothing of one of the technicians while performing surveys at the Mesa on March 18, 1989.

In response to CARs SO-P-1171, 1177 and 1208; extensive corrective actions have been instituted including extensive procedure revisions, establishment of quarantine areas both within and without the Red Badge Zone for frisking all materials to be removed from the protected area, increasing the number of technicians assigned to surveying materials to fifteen, and revision of training programs. It was evident that these additional contaminated items had been identified due to the circumspection and intensity of the licensee efforts to control their

release of materials and that further contaminated items may well be found in the future. The release and subsequent recovery of slightly contaminated items was identified as a non-cited violation in the previous inspection reports. No further action appeared warranted as a result of the current events. However, in the case of the hot particle found on the technician, the licensee's investigation was incomplete at the close of the inspection. This matter requires further review to determine whether it is acceptable, a violation or a deviation and it is, therefore, considered unresolved (50-206/89-15-01).

The ALARA program was discussed with the ALARA supervisor to determine their involvement in the current Unit 1 outage, in particular, and the current state of program implementation, in general. Select ALARA Pre-Job Exposure Estimates (Form 57s), ALARA Pre-Job Checklists (Form 58s), ALARA Job Review Records (Form 59s), and Temporary Shielding Authorizations (Form 260s) were reviewed for the period of the outage. The following current procedures were also reviewed:

SO123-VII-3, ALARA Job Review

SO123-VII-3.2, Temporary Shielding Installation

SO123-VII-3.3, Methods for Establishing ALARA Goals

SO123-VII-3.5, ALARA Program

Outage exposure goals by job and by work group were reviewed as well as the exposures expended to date. The issuance of weekly, monthly and quarterly exposure reports were also reviewed. An outage exposure goal of 375 person-rem had been established for the Unit 1 cycle X refueling outage which had been revised to 387 person-rem due to additional work. The outage was essentially complete at the time of inspection and a total of 327 person-rem had been accumulated. It was noted that all major outage projects had been accomplished for less than the expected exposure. Of particular note were refueling, which was projected to expend 75 person-rem and was accomplished for 54 person-rem, and fuel transshipment, which was projected to expend 69 person-rem and was accomplished for 9.3 person-rem.

Several projects were noted as being under review and development by the ALARA group. These included: the utility of ultra-filtration for liquid decontamination, the use robotics for various projects including fuel pool reracking, chemical decontamination of select components including the Unit 1 regenerative heat exchanger (which was performed during the cycle X outage), and participation in EPRI research into full system decontamination.

The record reviews revealed that the above noted procedures were being followed and plant and contractor personnel interviewed during tours appeared cognizant of the need to minimize exposure and observe ALARA requirements.

The licensee seemed to be maintaining their previous level of performance in this area and their program appeared fully adequate to the

accomplishment of its safety objecitves. This program area requires further review and evaluation and is considered to be unresolved in that an incompletely quantified hot particle exposure was identified and the particle involved may have been carried off site.

8. Radioactive Waste Systems and Environmental Monitoring (84750)

SCE QA Audit Reports SCES-006-88, 021-88, 024-88, 025-88, 004-89 and 009-89 and QA Surveillance Reports SOS-267-88 and 020-89 were reviewed. These covered aspects of the radioactive waste systems and implementation of the environmental monitoring program. They were performed during the last year. Several PRRs, which detailed minor deficiencies, were issued as a result of these reviews. The PRRs appeared to have been appropriately addressed and corrective actions appeared timely and technically correct. Personnel performing the audits were experienced and appeared to be qualified in accordance with the requirements of ANSI/ASME N45.2.23-1978, Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants.

Changes in the organization, personnel, facilities, equipment, programs and procedures were discussed with the cognizant area supervisors. It was noted that preplanned alternate monitors are being installed in Units 2/3 on the Condenser Air Ejectors and Plant Vent Stacks. These will allow continued plant operation when fewer than the minimum number of required monitors are available. These were both particulate, iodine and noble gas (PING) and accident range effluent monitors. A new computerized meteorological data system was also being installed and was undergoing quality checks, validation and verification at the time of the inspection. This system is being considered for replacement of the contract services currently in use by SONGS. The Chemistry Department was also involved in validating and verifying new radioactive effluent software which will input multichannel analyzer results directly into the software which generates the pre-and post-release calculations. Also the installation of a new meteorological tower, to replace the current tower, had begun.

The licensee's program for determining the quantity and radionuclide composition of solid radioactive wastes was reviewed during the last inspection. (See Inspection Reports 50-206, 361 & 362/89-08, 89-08 & 89-08.) The licensee still employs a vendor supplied Process Control Program, should any particular waste require solidification; but wastes are routinely dewatered rather than solidified.

The last available Semiannual Radioactive Effluent Release Report was reviewed as noted in paragraph 5, above. Select radioactive liquid and gaseous effluent permits for both batch and continuous releases were reviewed from February 1989. These included pre- and post-release dose and dose rate calculations, monitor alarm setpoint determinations, and sample analyses. A dose calculation from Xe-133 for a containment purge was verified.

The major sources of radioactive solid, liquid and gaseous waste appeared to be as previously identified. No unmonitored release paths were identified. Select process and effluent monitors were observed and all

appeared to be operating properly. Records of the most recent 18 month channel calibrations and 92 day channel functional tests for the containment purge monitors R-1219, Unit 1, and 2 & 3RT-7828, Units 2/3, were reviewed. These appeared to be complete and timely and to comply with the requirements of TSs 3.5.9, Unit 1, and 3/4.4.3.3.9, Units 2/3.

Records of the Control Room emergency ventilation system di-octyl-phthalate and iodine removal tests performed from 1988 to date for the Units 1 and 2/3 were reviewed. The records appeared complete and timely. No recurrent problems were identified. The tests appeared to conform to the recommendations of RG 1.52, Design, Testing, and Maintenance Criteria for Post Accident Engineered-Safety-Feature Atmosphere Cleanup System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants, and to comply with the requirements of TSs 3.12 and 4.11, Unit 1, and 3/4.7.5, Units 2/3.

The PASSs were reviewed as detailed in paragraph 4, items 50-206, 361 & 362/89-PS-01, above.

The licensee's Annual Radiological Environmental Operating Report for 1988 was reviewed as described in paragraph 6, above. The Environmental Monitoring Program Plan and Procedures Manual; specific Environmental Procedures, series SO123-IX; and the Offsite Dose Calculation Manuals were reviewed and appeared to be in compliance with the requirements of TSs 3.18 and 4.18, Unit 1, and 3/4.12, Units 2/3.

Radiological Environmental Monitoring Program (REMP) site facilities and select environmental sampling and survey locations were toured. All monitoring equipment including environmental thermoluminescent dosimeters (TLDs), air samplers, and pressurized ion chambers were in good order and functional. The responsible corporate personnel were interviewed relative to program implementation and annual report preparation. No substantive program changes were noted since the program was last reviewed.

The meteorological monitoring tower was toured and select calibration and operational reports were reviewed. The meteorological tower is on a bluff north of Unit 1 and is maintained by a contract vendor. The contractor performs quarterly onsite inspections, daily interrogations of the equipment and semi-annual calibrations. The site Instrumentation and Control division also checks the equipment weekly and changes chart paper. All observed equipment was operational and the records appeared complete and indicated no anomalies or unsatisfactory trends. The instrumentation appeared to be in compliance with the requirements of TSs 3/4.3.3.3.4 and 3/4.4.3.3.4, Units 2/3.

The QA program as implemented for the REMP is specified in TQAM chapter 8-B, Quality Assurance Program Requirements for Radiological Effluent and Environmental Monitoring. The QA program as reflected in the above noted program procedures, environmental procedures and audits appeared adequate and in compliance with the guidance provided in Regulatory Guide 4.15, Quality Assurance for Radiological Monitoring Programs.

The licensee seemed to be maintaining their previous level of performance in this area and their program appeared fully adequate to the

accomplishment of its safety objectives. No violations or deviations were identified.

9. Exit Interview (30703)

The inspector met with the licensee representatives, denoted in paragraph 1, at the conclusion of the inspection on May 26, 1989. The scope and findings of the inspection were summarized. The inspector noted that some of the PASS inline instrumentation was seldom operational, that sampling may not be possible on loss of instrument air or non-vital power, that alternate grab sampling may not be possible within the time and dose limitations specified in NUREG-0737, and that the alternate methods which actually maintain the system operational do not involve sampling. Licensee management acknowledged these observation and noted that efforts had begun to attempt to remedy the instrument operational problems. The inspector also noted that an unresolved item, involving a hot particle exposure, had been identified.