U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos. 50-206/90-35, 50-361/90-35, 50-362/90-35

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

Licensee: Southern California Edison Company
Irvine Operations Center
23 Parker Street
Irvine, California

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

Inspection at: SONGS, San Clemente, California

Inspection conducted: October 9 through 12, 1990

Inspected by: _____ 11-9-90
L. C. Carson II, Radiation Specialist — Date Signed

_____ 11/7/90
H. D. Chaney, Senior Radiation Specialist — Date Signed

Approved by: _____ 11/9/90
G. P. Yuhas, Chief — Date Signed
Reactor Radiological Protection Branch

Summary:

Areas Inspected:

Special unannounced inspection by two regionally based inspectors of an allegation (RV-90-A-0049) involving the adequacy of the health physics program in the areas of respirator protection equipment (RPE) training, extremity dose tracking, health physics staff supervisory qualifications, Unit 1 Outage surveys, and the material release program.

Results:

Certain aspects of the allegations were substantiated. The essence of the concerns involving non-compliance with regulatory requirements were not substantiated. No violations or deviations were identified.

DETAILS

1. Persons Contacted

Licensee Personnel

H. Morgan, Vice President and Station Manager
L. Brevig, Supervisor, Onsite Nuclear Licensing
P. Knapp, Manager, Health Physics
S. Allen, Supervisor, Dosimetry
L. Bray, Supervisor, Health Physics Instruments
J. Thompson, Supervisor, Health Physics Planning & Performance
J. Fee, Superintendent, Health Physics Operations
R. Warnock, Superintendent, Health Physics Support
J. Madigan, Supervisor, Units 2 and 3 Health Physics
M. Farr, Engineer, Onsite Nuclear License
J. Jamerson, Engineer, Onsite Nuclear License
E. Gatto, Supervisor, Radioactive Materials Control
E. Bennett, Engineer, Quality Assurance
S. Jones, Engineer, Quality Assurance
A. Talley, Supervisor, Unit 1 Health Physics

NRC

C. Caldwell, Senior NRC Resident Inspector

The individuals listed above attended the exit interview on October 12, 1990. The inspectors contacted other members of the licensee's staff during the inspection.

2. Allegation No. RV 90-0049

On September 5, 1990, a worker from the San Onofre Nuclear Generating Station presented Region V NRC inspectors impressions regarding several health physics (HP) practices.

The following HP safety concerns were expressed by the individual during that meeting and telephone conversations with the NRC.

Concern (1)

Employees were required to wear self contained breathing apparatus (SCBA) without the proper training.

The individual alleged that personnel were issued Draeger SCBAs for containment entry when they had not been provided hands-on-training on the use of such equipment. The individual further alleged that HP supervisors authorized the issuance of Draeger SCBA systems for a May 1990 Post Accident Sampling System Drill to workers whose training records incorrectly reflected their RPE qualifications.

Findings

The inspectors examined the licensee's RPE training program, particularly instructions to the worker on how to use SCBAs. The inspectors also examined the HP department's program for the issuance of SCBAs. Typically the nuclear training department records were used to verify an individual's qualifications. Prior to the May 1990 Post Accident Sampling System Drill, Quality Assurance (QA) Activity Monitoring Report, QAMR-021-90, dated March 8, 1990, addressed concerns regarding the potential issuance of Draeger SCBAs to workers who had no hands-on-training with the aforementioned equipment. In May and August 1990 Problem Review Reports (PRR-SO-029-90 and PRR-SO-127-90), were issued by the HP department to correct the RPE deficiencies identified in QAMR-021-90.

QA found the program deficient in two areas:

1. The Training Records Information Managements System (TRIMS) did not have a computer code that differentiated the specific RPE a person was qualified to use.

2. The TRIMS could not specify whether or not an individual who met the RPE training requirements had received hands-on-training, computer retraining, or lectures.

The inspectors reviewed the licensee's corrective actions to the QA findings and found the following:

- Prior to being issued a SCBA, individuals were required to sign and date a letter stating they had received hands-on-training.

- If an individual could not sign the letter, the SCBA issuance was denied and his qualifications were removed from the TRIMS.

- Unqualified individuals requesting SCBAs were directed to obtain hands-on-training.

- The TRIMS program was being updated to provide the necessary specificity required to determine individual qualifications.

The licensee had appropriately responded to this issue and implemented corrective actions in a timely manner.

The inspectors examined SCBA issuance logs, RPE qualification lists, and SCBA hands-on-training letters of fifteen workers to assess whether SCBA protection factors were credited to unqualified workers. These workers used SCBAs for containment entries and other operations. The fifteen workers were qualified to wear Draeger SCBAs and there were no apparent violations of 10 CFR 20.103 requirements.

Resolution

This allegation was not substantiated.-

Concern (2)

Extremity exposures were not adequately tracked to ensure compliance with 10 CFR 20.101(a).

The individual alleged that workers could exceed radiation exposure limits when performing multiple work activities because extremity TLDs were routinely processed on a monthly cycle. The HP department did not required periodic or intermediate extremity exposure tracking using self-reading dosimeters (SRD). When SRDs were used for the interim tracking of extremity exposure monitoring the dosimetry group did not always record and update the Automated Access Computer System (AACS)/SONGS Radiation Control System (SRC). The individual's allegation was based on the Unit 1 non-routine work involving reactor coolant pumps (RCPs) and steam generator (SG) inspection requiring extremity TLDs and SRDs versus the routine work activities not requiring extremity SRDs.

Findings

The inspectors conducted interviews with the licensee's HP dosimetry group, examined the dosimetry procedures, records, and selected radiation exposure permits (REP) requiring extremity monitoring.

Procedure SO123-VII-4.8.1, "Dosimetry Issue," Section 6.5.3.1, states, in part:

> "If required by Operational HP on the REP, extremity dose tracking will be performed in part, using TLD badge set cards."

The HP staff explained that TLD extremity exposures associated the SG repair work were not being updated in the AACS/SRC and therefore, not tracked by the dosimetry personnel during the outage. However, the extremity exposures were being tracked by manual entries at the work station by the HP technician assigned to cover the REP function. The REP planning staff explained that intermediate tracking of extremity doses were not generally required during routine work employing extremity TLDs. The basis for such determinations is set forth in HP Procedure SO123-VII-4.8, "External Radiation Dosimetry Program," Section 6.2.3, which requires TLD extremity dosimetry when the quarterly dose is expected to exceed 4.7 Rem (25% of 10 CFR 20.101(a) limits).

The dosimetry supervisor explained to the inspectors that extremity TLDs issued for non-routine work were exchanged and processed within 36 hours of determining that a worker had received a whole body dose of 450 mRem by SRD or 600 mRem by TLD in one calendar quarter. Unit 1 HP planning personnel explained that based on ALARA pre-job surveys routine work with extremity exposure projections below 4.7 Rem may require special exposure monitoring per HP Job Coverage Plan. The inspectors examined the Job Coverage Plan for the SG manway work. The HP plan required the use of stay time calculations and exposure worksheets for tracking extremity exposures. The operational HP technician for the SG work was responsible for summing each exposure and recording the results in a log book. The Job Coverage Plan spelled out tracking requirements and responsibilities in adequate detail. The inspectors and Unit 1 HP planning personnel discussed the SG work ALARA prejob reviews, surveys,

and REPS (71078, 71080 & 71106). Logged extremity exposure data and processed TLD data examined by the inspectors were found to be consistent with procedural requirements. In the NRC Region V Inspection Report No. 50-206/90-33, it was noted that the licensee's coverage of Unit 1 work activities involving extremity exposure appeared to be adequate. Examination of other aspects of the licensee's extremity tracking program did not reveal any non-compliance with regulatory requirements. However, the inspectors did review several draft revisions to procedures that will more clearly define the extremity tracking program. The licensee's self-assessment of their problem with updating extremity exposure data into the AACS/SRC system in a consistent and timely manner, is not a violation of regulatory requirements set in 10 CFR 20.101(a).

Resolution

This allegation was not substantiated, although there was some merit for the perception.

Concern (3)

Certain individuals occupying supervisory positions in the health physics department were inadequately qualified.

The individual alleged that the following HP supervisory positions were occupied by unqualified personnel:

- HP Superintendent, Operations
- Dosimetry Supervisor
- HP Instrumentation (HPI) Supervisors
- ALARA Supervisor
- HP Planning & Performance Supervisor
- Units 2/3 Rerack Supervisor
- Units 2/3 Rerack General Foreman

As examples to support the question of qualifications, it was specifically alleged that radiation protection instruments (i.e. Teletectors and Dositecs) were in short supply and new instruments were not in use due to supervisory incompetence. Also, calibration of Teletectors did not satisfy the guidance contained in ANSI N323-1978, "American National Standard Radiation Protection Instrumentation Test and Calibration", regarding calibrating of all scales of the instrument.

Findings

The inspectors reviewed the qualifications of each person holding the positions listed above to verify compliance with the requirements in TS 6.3.1, that the individuals meet or exceed the minimum qualifications of ANSI N18.1-1971, "Selection and Training of Nuclear Power Plant Personnel". The licensee's procedure for maintaining the qualifications is SO123-VI-33, "Personnel Records Qualification Program". The inspectors examined the HP engineering job profile and guidelines that HP management uses on a case-by-case basis for hiring and promoting personnel. The inspectors conducted interviews with several personnel

in the positions listed above and concluded they all either met or exceeded the requirements of TS 6.3.1.

The inspectors interviewed the HP instrument (HPI) supervisor and other HPI technicians regarding the radiation protection instrument calibration program. Calibration records were examined and maintenance/calibration activities were observed by the inspectors. The licensee stated that Teletectors are used for high exposure rate measurements and are not calibrated on the lowest range 0-2 (milliRoentgen/hour) (mR/hr). The inspectors found this to be true as indicated by a red sticker denoting this fact on several Teletectors examined in the facility. The calibration records of Teletector No.19710 were examined by the inspectors and appeared to be in accordance with licensee procedures S0123-VII-5.2.1, "6112 Teletector, Eberline - Operation and Calibration", and S0123-VII-5.0, "Calibration Program", which incorporates ANSI N323-1978 guidance.

Regarding instrument shortages the licensee stated that the Unit 1 Outage only required ten Teletectors for HP operations. Eighteen Teletectors were in service at the time of this inspection. The inspectors observed three Teletectors being brought into the calibration shop for repair. The licensee explained that the Dositec shortages were due to procurement orders not being filled by suppliers. The licensee changed the original purchase specifications from Dositec model AR-21s to model PR-2s. Also, two of the Dositecs were out of service due to water leakage. There appeared to be a sufficient number of dositec's or other similar instruments to meet the licensee's needs.

There were no findings that supported regulatory non-compliance.

Resolution

This allegation was not substantiated.

Concern (4)

Documentation of radiation survey results were not accomplished in compliance with HP procedures when removing material from the Unit 1 Reactor.

The worker was concerned that a number of radiation surveys, which involved removing material out of the refueling pool for the Unit 1 Outage/Thermal Shield Support (TSS) repair work could not be documented as required by the work control plan (WCP 89/90-11).

Finding

The inspectors examined selected procedures, REPs and nine survey records associated with the TSS repair. Radiological controls for objects being moved within the refueling pool/TSS area were established in procedure S0123-VII-7.13, "Removal of Objects From Contaminated Pools" and WCP 89/90-11. Procedure WCP 89/90-11, Attachment 2, Section 1.2.1 required documenting exposure rates of objects if it was necessary to withdraw the object from the refueling pool, and when the exposure

rate exceeded 50 mR/hr at two feet below the water level surface or 5 R/hr on contact above the water level surface. The inspectors asked the Unit 1 HP foremen was it necessary to document survey results for all objects moved in and out of the refueling cavity. The foremen's reply was "No". The Unit 1 HP foremen emphasized that the guidelines for moving TSS objects around the refueling cavity allowed the HP technician latitude to evaluate the need to document a radiation hazard. The licensee explained that WCP 89/90-11, Section 6.9 required the installation of area radiation monitors that were set to alarm at 10 mR/hr. The purpose of the monitors was to warn personnel of increasing radiation levels in the work area. The licensee further explained that the monitors had not alarmed during TSS repair activities to date.

From the nine radiation and contamination surveys examined by the inspectors of TSS objects removed between September 22, 1990 and October 10, 1990, the licensee appeared to be meeting the requirements of WCP 89/90-11 and the intent of SO123-VII-7.13. The inspectors concluded that the licensee was performing reasonable measurements, evaluations and documentation of radiological surveys associated with the TSS repair, pursuant to 10 CFR 20.201 and 10 CFR 20.401.

Resolution

This allegation was not substantiated.

Concern (5)

Survey requirements for removing trash from restricted areas may be inadvertently causing the release of radioactive material to unrestricted areas.

It was alleged that vehicles leaving the restricted area through the Protected Area hold area did not receive 100% radiological surveying (frisks/surface contamination surveys). Also, the survey probe movement (frisking) criteria of 2 inches/second for materials being released from the Site was not being enforced by HP supervision.

Findings

The inspectors conducted interviews with HP personnel involved with the material release program. The inspectors examined, "Material Release Log Books" for the Unit 1 Hold Down Area and the Unit 1 HP Control Point. The log books appeared to be maintained in accordance with the requirements of procedure SO123-VII-7.3.1, "Material Release Program" (MRP). The inspectors evaluated the licensee's implementation of the MRP. The inspectors examined the results of three QA assessments of the material release program:

- QA Surveillance Report, SOS-182-90, dated 8/13/90 - 8/20/90
- QA Surveillance Report, SOS-076-90, dated 3/27/90 - 4/2/90
- QA Performance Evaluation Report, PER-032-90, dated 9/9/90

The above QA reports addressed areas of the MRP that were associated with the allegation. QA report SOS-182-90 said, in part, that the Release Program Contaminated Material Reports for August, September and October 1990 indicated an average of 100 findings per week where contaminated material was found in uncontaminated trash containers located within the restricted area. These challenges to the MRP did result in the licensee focusing additional attention in the area of clean trash receptacles. The licensee's MRP creates a series of barriers in order to prevent the uncontrolled release of contaminated material offsite. It appeared to the inspectors that the licensee's procedure (SO123-VII-7.3.1) for release of material for unrestricted handling was being responsibly and adequately implemented,

HP Technicians responsible for performing the MRP surveys must successfully completed the "Material Release Qualification Manual" training as required by procedure SO123-VII-7.3.1. The MRP procedure gave judgmental latitude to the technician for determining the depth of surveillance needed on materials being released. Technicians were also given latitude to evaluate whether the risk of materials with biological hazards out weighed radiological hazards. There were exemptions for radiological surveys in the MRP procedure that required only a 10% external area survey, e.g., drinking water bottles. Also, no surveys of food containers were required unless there were reasons to suspect the container had been in a radioactively contaminated area.

The inspectors observed an in progress release survey of a tractor and trailer in the Unit 1 Hold Down Area. The survey did not require a 100% evaluation since the tractor trailer had not been in a contaminated area. Licensee staff and supervision explained that some materials were not surveyed separately but aggregately. The inspector found no evidence of regulatory non-compliance in regards to the licensee's material free release program for unrestricted use. The inspectors concluded that the licensee is continuing to make improvements in the MRP based on their self-assessments. Several discrete observations to HP personnel performing frisking of materials and equipment did not identify any problems with frisking protocol.

Resolution

This allegation was not substantiated.

5. Exit Meeting

The inspectors met with the licensee representatives denoted in Section 1, at the conclusion of the Onsite inspection on October 12, 1990. The scope and findings of the inspection were summarized.