

U. S. NUCLEAR REGULATORY COMMISSION  
REGION V

Report Nos.: 50-206/93-40, 50-361/93-40, 50-362/93-40

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

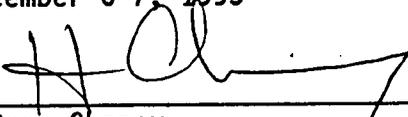
Licensee: Southern California Edison Company  
Irvine Operations Center  
23 Parker Street  
Irvine, California 92718

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

Inspection at: SONGS Site, San Diego County, California

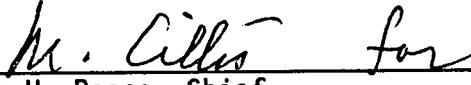
Inspection Dates: December 6-7, 1993

Inspector:

  
\_\_\_\_\_  
H. Dean Chaney,  
Senior Radiation Specialist

2/4/94  
Date Signed

Approved By:

  
\_\_\_\_\_  
James H. Reese, Chief,  
Facilities Radiological Protection Branch

2/8/94  
Date Signed

Summary:

Areas Inspected: A special announced inspection of the licensee's preparations for the January 1, 1994, implementation of changes to 10 CFR Part 20, as set forth in Federal Register 56 FR 23377, dated May 21, 1991.

Results: Overall, the licensee appears to be capable of implementing all the changes to 10 CFR Part 20 on January 1, 1994. No violations or deviations were identified.

## DETAILS

### 1. PERSONS CONTACTED

#### Licensee

- \*J. Fee, Assistant Manager, Health Physics Department
- \*C. Bostrom, Manager, Technical Training
- \*L. Bray, Health Physics (HP) Engineer
- \*R. Douglas, Licensing Engineer
- \*M. Farr, Licensing Engineer
- \*E. Goldin, Supervisor, HP & Environmental
- \*S. Jones, Quality Assurance Engineer
- \*R. Morgan, HP Engineer
- M. Russell, HP Engineer
- \*D. Warnock, Assistant Manager, Health Physics Department
- H. Wood, Quality Assurance Engineer

\*Denotes those attending the exit meeting.

### 2. OCCUPATIONAL RADIATION EXPOSURE (83750)

The licensee's preparations for the January 1, 1994, implementation of revisions to 10 CFR 20 were examined. This review focused on the following areas of licensee effort to implement the new 10 CFR 20 (renumbered Sections 20.1001-20.2402):

- Radiation Protection Program programmatic changes involving:
  - Annual radiation exposure limits (occupational and nonoccupational) and the total dose concept.
  - New radiation dose terminology.
  - Internal radiation exposure control and monitoring.
  - Planned Special Exposures.
  - Very High Radiation Area Controls.
  - Declared pregnant women and dose to the embryo/fetus.
  - Revised radioisotope exposure and effluent concentration limits.
  - Airborne radioactivity assessment and tracking.
  - Respiratory protection equipment use assessment.
  - Routine reports and event notifications.
- Also, previously existing RP Program attributes and supporting activities involving the following were reviewed:
  - Periodic RP Program reviews and assessments.
  - Employee radiation protection training.
  - RP instrument calibration.
  - ALARA program and prospective job dose assessments
  - Radioactive effluent release limits.
  - Radiological posting and monitoring.
  - High radiation area controls

- Enhancements to the radiation dose assessment and radiological controlled area access control computer system.

The inspector determined that the licensee had accomplished the following with regard to implementing the revisions to 10 CFR 20 (new Part 20):

- Established a dedicated team of various site staff members (all disciplines) for development of their new Part 20 implementing program. The licensee initially started the process in mid 1991, and in late 1992 established the Integrated Site Project Plan.
- Performed a detailed review of each Part 20 change and established an individual technical position for each change. These positions were developed in concert with a full nuclear power industry effort, including a concerted Region V nuclear power licensees review and development effort aimed at achieving implementation consistency among the Region V facilities.
- Actively participated in the NRC's question and answer program, aimed at establishing an NRC and industry consensus on Part 20 changes and their meaning. Review and comment on NRC draft Regulatory Guides was actively pursued.
- Established an in-house computer hardware and software development project team for creating an Integrated HP System (IHPS) that will interface with the other two major information system at the site (TRIMS & SOMMS).
- Converted their implementing positions into written requirements and identified specific portions of existing procedures and regulatory documents (FSAR, OCDM, RETS, etc.,) that would need modification.
- Established a training program for general employees, radiation workers, and the RP Staff to cover changes generated by the implementation program.

The above are only some of the licensee's activities directed at achieving the January 1, 1994, implementation date.

The Following observations were made by the inspector regarding the licensees implementing plans and procedures.

- The licensee elected to use a combination of revising and consolidation of existing radiation protection program procedures, and where necessary create new procedures in order to implement the new Part 20.
- Most program implementing procedures were found to be in final draft stage and ready for issue. Overall the procedures reflected

a great deal of effort, were of very good quality, and user friendly. The inspector found very few discrepancies with the licensee's implementation procedures, and those few comments were expediently resolved by the Task Force members responsible for a particular procedural area.

All procedures are reviewed and approved at the departmental level.

- The licensee's "Health Physics Program Description" is a very detailed and is an authoritative compendium of license and regulatory requirements that shape the licensee's individual HP programs (19). This procedure (SO123-VII-20) addresses all of the applicable revisions to Part 20. The licensee has in place a suitable proceduralized program for assessing the effectiveness of the Radiation Protection Program.
- Their exposure and personnel access control program (IHPS) was found to be in the final stages of post acceptance testing calibrations and appeared that it would be ready for use on January 1, 1994.
- The licensee is implementing the following administrative dose limits on TEDE:
  - Declared pregnant women: 200 mrem during the entire gestation period and at a rate no greater than 50 millirem per month.
  - Annual whole-body dose: 1 rem TEDE
  - Life-time dose: 1 rem TEDE x (n), where n = the workers age, and maintaining an individual's dose to less than 10 rem in 5 consecutive years.
  - 50 percent of other regulatory limits for occupational dose.

These licensee's "Lifetime Occupational Radiation Exposure Control Program" and "administrative dose controls" are based on a combination of the recommendations contained in NCRP Report 116 and ICRP Report 60.
- The licensee's procedures for implementing High and Very High Radiation Area controls of 20.1602 appear to adequately incorporate the guidance of NRC Regulatory Guide 8.38, "Control of Access to High And Very High Radiation Areas in Nuclear Power Plants." The licensee already had special access controls for areas with dose rates greater than 25 rem per hour and adjusted these to implement VHRA controls.

The licensee does not feel that posting of the reactor containment access door is necessary since the only entries into containment, when the reactor is at power, will be "authorized entries," and then, special procedures will be used to ensure appropriate controls and RP surveillances over any existing VHRAs are implemented at that time.

- The licensee has elected to monitor occupationally exposed workers for external exposure, and selectively monitor workers for internal dose, even though a prospective evaluation had shown that internal exposures would be below the required monitoring threshold.

The licensee does not plan on implementing a DAC based tracking system and will assess internal contamination potential on monitoring results from automated whole body monitoring systems located at exits to radiologically controlled areas. These systems (gas flow proportional monitors) can identify persons that have been exposed to potential internal exposure to radioactive materials at less than 0.5 percent of an ALI (Annual Limit of Intake). The licensee had also performed a complete assessment of their air sampling methods and analysis sensitivities and established effective DACs for screening of air samples.

- The inspector noted that the licensee had conducted a site characterization of possible doses to "members of the public" (20.1301).
- Development of training material and training of plant staff is progressing satisfactorily. Handout materials were found to be very well written and informative.
- The licensee's quality assurance department is actively involved in the review of new Part 20 implementing activities and will be performing a detail audit of SONGS's implementation and its effectiveness in early 1994.

The inspector reviewed with the SONGS's Part 20 implementation team his observations on the content of their implementing procedures. No technical errors involving terminology and implementation of regulatory guidance were noted by the inspector.

The inspector determined that the licensee was very capable of implementing all of the Part 20 changes on January 1, 1994, and that the licensee's Quality Assurance organization was deeply involved a continuing assessments of the Health Physics Department's efforts in this area.

3. Exit Meeting

An exit meeting was held on December 7, 1993, with members of the licensee staff identified in Paragraph 1 of this report. The items identified in this report were discussed at that time. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspector during the inspection.