ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket No:	50-206
License No:	DPR-13
Report No:	50-206/96-06
Licensee:	Southern California Edison Co. P.O. Box 128 San Clemente, California
Facility:	San Onofre Nuclear Generating Station, Unit 1
Location:	San Clemente, California
Dates:	June 3 - 6, 1996
Inspectors:	Louis C. Carson II, Health Physicist Paul W. Harris, Project Manager/Reactor Inspector
Approved:	D. Blair Spitzberg, Ph.D., Chief Nuclear Materials Licensing Branch
Attachment:	Partial List of Persons Contacted; Inspection Procedures Used; Items Opened and Closed; and List of Acronyms Used.

EXECUTIVE SUMMARY

San Onofre Nuclear Generating Station
NRC Inspection Report 50-206/96-06

This routine announced inspection of Unit 1 included aspects of the licensee's fire safety review program, management organization and oversight, self-assessment program, auditing program, fuel storage and spent fuel pool (SFP), radiation protection program, unit material condition, maintenance program, and radiological effluent/environmental monitoring.

Plant Status and Operations Verification

- Facility material condition, housekeeping and cleanliness were excellent. In particular, a detailed tour of containment and the SFP areas verified that structures, systems, and components continue to contribute to the safe storage of spent fuel (Section 1).

- A review of the fire protection and prevention program indicated that the licensee had implemented a program that met license requirements. No abnormal fire loading conditions were identified (Section 1).

Occupational Exposure During SAFSTOR and DECONTAMINATION

- A high quality control room pre-job brief for entry into primary containment contributed to the safe and successful accomplishment of this infrequently performed activity. Activities within containment were well orchestrated and conducted safely illustrating the effectiveness of the preplanning (Section 2.1).

- The licensee's organization and lines of responsibility complied with their Permanently Defueled Technical Specifications (PDTSs). The organization and staffing were appropriate for Unit 1's shutdown and defueled condition (Section 2.2).

- The licensee's management controls, quality assurance, safety review processes and self-assessment programs were adequately implemented for the shutdown condition of the plant (Section 2.3).

- Inspectors concluded that the radiation protection program met requirements and were appropriate for Unit 1's shutdown and defueled condition. Radioactive materials, radiation work activities, and radiation areas were being controlled in accordance with the applicable requirements (Section 2.4).

Radwaste Treatment, Effluent, and Environmental Monitoring

- Inspectors concluded that the licensee's Annual Effluent Release Report, Radiological Environmental Monitoring Program, and effluent monitoring programs met the requirements of the PDTS and Offsite Dose Calculational Manual (Section 3.1).

- The plant vent flowrate indicator had not been functional since 1984. Another approved, but less accurate flowrate determination method had been in use since 1984. However, the failed flowrate indicator condition had been identified and scheduled for repair dating back to 1988. The Nuclear Regulatory Affairs Manager and Operations Manager committed to provide the NRC a schedule on resolving the design problems with the plant vent stack flow indication (Section 3.2).

Spent Fuel Pool Monitoring

- The licensee was in compliance with the limitations and operational requirements established in the PDTS, including SFP water level, temperature, and chemistry (Section 4.1).

- The licensee had implemented two plant modifications that enhanced their ability to assess the status of their facility while in SAFSTOR. These excellent initiatives provided the control room with on-line capabilities to ascertain the status of SFP leakage and the quantity of free standing water in the containment sump (Sections 4.3 & 4.4).

Report Details

I. Plant Status, Operation Safety Verification and Fire Protection/Prevention Program (IPS 64704 & 71707)

1 CONDUCT OF OPERATIONS

1.1 Summary of Plant Status

San Onofre Nuclear Generating Station (SONGS) is a three unit site of which Unit 1 had been permanently shutdown. Unit 1 began commercial operation on January 1, 1968, and was permanently shutdown on November 30, 1992. Since that date, the licensee had defueled the reactor, stored the spent fuel in the site's SFPs, and placed the unit in SAFSTOR. A possession-only license was issued for the unit in March 1993.

1.2 Facility Tour and Inspection

a. Scope

Inspectors toured the facility to assess the status of structures, systems, and components in SAFSTOR. This effort involved tours of the radiation control area, containment, control room, and the SFP building. Inspections included the assessment of housekeeping, fire hazards, radiation material control, access, and lighting.

b. Observations and Findings

Inspectors toured all accessible areas within containment except for the reactor annulus space due to radiation protection considerations. In areas inspected, unfettered access was afforded to all components and systems. Permanent lighting within containment was sufficient to support a thorough inspection of the areas toured. Transient materials such as scaffolding, tools, and waste containers were appropriately stored and segregated representing good material control. Floors, horizontal surfaces, and corners within containment were free of excessive dirt or waste. No excessive corrosion was identified on any systems, indicating that the surfaces had not been wet. Containment sump motors were in good material condition and sumps were dry and free of trash that could potentially clog the sump pumps during operations.

The inspectors and licensee representatives performed detailed inspections to identify water leakage from systems or free standing water, both of which would indicate a problem. Floors, systems, and components were observed to be dry; no standing water was observed. Also, there was no indication of residue from evaporated water. Observation of the fuel transfer chute blind flange and the horizontal surfaces adjacent to and surrounding the reactor head flange verified that surfaces were dry. Standing water in these areas or leakage from the transfer chute blind flange could possibly indicate a degradation in the SFP boundary integrity. The licensee conducted their inspection in accordance with Procedure SO1-4-25 which provided a checklist to assure that important considerations were inspected and assessed.

Inspectors observed that the containment contained low combustible loading. This included in-situ fire loading such as electrical cabling, some film oils on components and equipment, fire-resistant scaffolding, and miscellaneous pump and motor-operated valve oils. The only other combustibles in containment were plastic bags used for controlling radioactive contamination, tygon and plastic hoses, articles used for housekeeping, and other minor sundries. Inspectors noted that the licensee did not use containment as a radioactive storage location. Inspectors determined that materials left in containment were of a reasonable amount and did not represent an adverse fire loading.

The inspectors also toured the facility with an equipment operator performing watchstanding responsibilities. These areas included the 4160 volt and 480 volt switchgear rooms, auxiliary building, and equipment areas containing the SFP cooling and component cooling water (CCW) systems. Similar to the conditions identified in containment, the inspectors observed good material conditions, low combustible loading, unfettered access, and good housekeeping. The inspectors observed that the CCW system, which cools the SFP cooling water via a heat exchanger appeared to be in good operational condition. The pump motor bearings were not running excessively hot, bearing oil levels were appropriate, and internal motor air cooling was available.

c. Conclusions

Facility material condition, housekeeping and cleanliness were excellent. In particular, a detailed tour of containment revealed that structures, systems, and components continue to contribute to the safe storage of spent fuel and demonstrate appropriate material integrity. The fire protection and prevention program indicated that the licensee had implemented a program that met license requirements.

II. Occupational Exposure During SAFSTOR and DECONTAMINATION (MC 83100)

2 CONDUCT OF RADIATION PROTECTION AND SAFSTOR ACTIVITIES

2.1 Pre-Job Brief for Containment Entry

a. Scope

The inspectors reviewed the adequacy of the licensee's radiation protection program and operation's activities for inspecting the Unit 1 containment to determine whether the licensee was in compliance with the requirements of PDTS D6.11. The scope of this inspection effort included observing the Unit 1 containment entry tailboard and pre-job briefing meeting.

b. Observations and Findings

The licensee opens and inspects the Unit 1 containment at least annually to assess the material status of containment structures, systems, and components maintained in a SAFSTOR configuration. While in SAFSTOR, systems inside

containment are not active and not necessary for the safe storage of spent fuel. However, an inspection of containment is important to verify that conditions have not degraded to a point representing an unsafe radiological or facility situation. Inspectors observed the licensee's pre-job brief (i.e., tailboard) for containment entry to ascertain whether important personnel and equipment safety considerations were provided to the plant staff prior to containment entry. Inspectors observed health physics technicians and plant personnel conduct radiation protection practices. Systems that penetrate containment, such as fire water and CCW were permanently isolated with closed valves or blind flanges. Some containment systems, such as the reactor vessel and system low points, contain water; however, no volumetric or pressurized water exists. With the exception of telephone communication supply power, the licensee shuts off electrical power to containment when the containment is closed.

The licensee conducted the containment entry tailboard to assure that all personnel were briefed on procedural requirements, personnel safety considerations, and the scope of activities to be performed. The purpose of the containment entry was to perform a containment inspection, removal of pump motor oil from the new fuel elevator, installation of a containment sump level alarm, and a fire system alignment check. The control room Shift Supervisor (SS), the senior operator on shift, conducted the brief using Licensee Procedure S023-0-44 which provided guidance on the conduct of tailboards. Inspectors noted that appropriate attention was paid on the infrequent conduct of a containment entry. The SS also stepped through Procedure S01-4-44 focusing on precautions, prerequisites, and the procedures steps that would be conducted. A detailed review was conducted to assure all personnel understood entry and egress requirements, command and control responsibilities, and communications. The SS assured proper containment ventilation, purge duration, temperature, humidity prior to entry, and stressed the importance of both personnel and plant safety. Senior plant management observed the brief, questioned key personnel in their duties, and provided insight to the safe accomplishment of this activity.

For the containment activities noted above, the lead person responsible for the safe accomplishment of the activity provided a summary of the activity to be performed. These briefs were generally technical and added value to the tailboard. All personnel became familiar with other activities in case assistance was needed. Inspectors observed that all personnel performing and supporting the containment entry were in attendance at the tailboard.

c. Conclusion

The inspectors concluded that the tailboard contributed to the safe accomplishment of the containment entry. Activities within containment were well orchestrated and conducted safely illustrating the effectiveness of the preplanning. Appropriate management oversight was provided. Through the participation of senior management, members of the containment entry teams and the radiation protection staff, views and questions were discussed that encouraged thought, analysis, and reassessment of strategy. This included

specific considerations for the actual conduct of emergency egress, stop work provisions, and response to abnormal conditions.

2.2 Organization

a. Inspection Scope

Inspectors reviewed SONGS' organization with the requirements in Section D6.2 of the PDTS which define lines of authorities and responsibilities. The PDTS, Table D6.2-1, "Minimum Shift Crew Composition," lists the minimum shift composition required to ensure that personnel are available in case of an emergency.

b. Observations and Findings

Licensee representatives stated that 104 full-time equivalent individuals had been budgeted for Unit 1 for 1996. This figure included workers from the following departments: operations, maintenance, emergency preparedness, station technical, chemistry, health physics, security, training, site support, nuclear engineering and construction, nuclear oversight, nuclear regulatory affairs, and nuclear project management. Of the 104 budgeted individuals, 27 were totally dedicated to Unit 1. The other individuals also had responsibilities for the other two units.

A review of selected procedures indicated that the licensee had established an organization and defined responsibilities that were consistent with the PDTSs. Interviews with selected managers indicated that the procedures were being implemented in a manner that ensured the safety of the Unit 1's spent fuel. Interviews with licensee representatives indicated that SONGS still maintained much of its Unit 1 experienced staff. Cross-training was continuing on Unit 1 for Units 2 and 3 workers that had worked at Unit 1 to ensure a source of trained workers. As a result, SONGS would be able to maintain a large pool of Unit 1 expertise on each shift at Units 2 and 3.

During the inspection, unannounced entries were made into the control room, in part, to observe the number of on-site crew members present. Inspectors observed that at least one individual qualified to stand watch in the control room was in the control room area, in accordance with PDTSs. The actual number of personnel that were on duty during the inspection met or exceeded the minimum total established in the PDTS.

c. Conclusions

The licensee's organization and lines of responsibility complied with its PDTSs. The organization and staffing were appropriate for Unit 1's shut down and defueled condition.

2.3 Audit, Appraisal, and Self-Assessments

a. Inspection Scope

Inspectors reviewed the licensee's self-assessment and audit programs to verify that these programs were adequate to identify, evaluate, and document significant occurrences and implement timely corrective actions. This inspection consisted of selected interviews with plant personnel, reviews of audits, and independent verification of related unit activities.

Inspectors reviewed examples of the following types of self-monitoring corrective action reports for 1996:

- Action Requests (ARs)
- Non-Compliance Reports
- Operations Division Experience Reports
- Nuclear Safety Concerns Programs (NSCPs)
- Inter-Divisional Investigation Report (IDIRs)
- Event Reports

b. Observations and Findings

The AR program was established in December 1995 to document any observation or problem on matters that are important to safety involving degraded human or equipment performance and deficient procedures. The AR program was developed as a means for all plant workers to identify problems to management that may affect quality. The inspector's review of the equipment related AR report for Unit 1 in 1996 revealed that 235 ARs had been generated. Inspectors determined that the AR program was a useful tool for identifying Unit 1 equipment problems and safety issues.

Inspectors reviewed the licensee's NSCP to determine if any nuclear safety concerns had been identified regarding Unit 1. The NSCP program is administered through the licensee's senior management by Nuclear Organization Directive D-008, "Resolution of Nuclear Safety Concerns," and Procedure SO123-XV-50.2, "Nuclear Safety Concerns." The NSCP provided licensee employee's with a mechanism to identify safety issues anonymously. Licensee senior management independently reviewed and investigated such concerns. The only Unit 1 nuclear safety concern noted by the inspectors was identified in January 1994, which involved multiple issues raised about the integrity of the Unit 1 SFP and the fuel in the pool. The inspector determined that the licensee's file on the Unit 1 SFP concerns were extensive and thorough and included followup correspondence to the concerned employee.

Two IDIRs regarding Unit 1's activity were reviewed by the inspectors. IDIR 96-07 concerned four contaminated kittens that were discovered in the vicinity of Unit 1 on February 1, 1996, and IDIR 95-033 concerned Unit 1 discharging oily liquid effluents off site that exceeded the allowable site

limit of 15 parts per million. The root cause determinations and recommended corrective actions appeared adequate for both IDIRs.

Inspectors found that the SONGS Quality Assurance (QA) department had conducted 54 performance-based surveillances of Unit 1 activities since October 1995. These surveillances were in the areas of training and qualification, emergency plan implementation, procedure compliance, radiation protection, and chemistry/radiochemistry monitoring program. Also, the QA department had performed other performance-based observations related to Unit 1 SFP activities, foreign material exclusions around the SFPs, Unit 1 maintenance activities, Unit 1 material condition and housekeeping, and fire protection. The QA Department summarized their findings in Surveillance Report SOS-021-96 dated June 5, 1996, and their overall conclusions were that the implementation of Unit 1 programs was "Satisfactory," and no adverse trends were identified.

c. Conclusions

The licensee had complied with its PDTS, including management oversight, in areas of self-assessment. The inspectors' review of the QA activities indicated that the licensee had been performing self-assessment functions for activities specific to Unit 1. Recommended dispositions and corrective actions from self-assessment activities appeared adequate.

2.4 Radiation Protection and As Low As Is Reasonably Achievable (ALARA)

a. Scope

The inspectors reviewed licensee activities to determine the adequacy of the radiation protection program for Unit 1's defueled operations and to determine whether the licensee was in compliance with the requirements of PDTS D6.11. This included a review of the radiation protection procedures, survey records, and ALARA reviews.

b. Observations and Findings

Inspectors reviewed ALARA planning and Radiation Exposure Permit (REP) development for work activities conducted in late 1995 and in 1996. Inspectors noted that the Unit 1 collective personnel dose for 1995 was 5.6 person-rem. The collective dose through June 1996 was 0.75 person-rem. Inspectors reviewed three REPs that were issued for Unit 1 containment entries and maintenance activities in 1995 and 1996. Inspectors reviewed Unit 1 survey log records, area plot plans, and survey pre-job planning cards. Detailed periodic radiation and contamination surveys had been performed in accordance with the licensee's radiation survey procedures. A review of licensee records indicated that the licensee had conducted a Unit 1 radioactive source inventory and leak check as required by PDTS D4.3.

Additionally, the tailboard meeting discussed in Section 2.01(b) of this report covered radiation safety. Key radiological considerations were

provided by the lead health physics technician, such as known hot spots and expected loose surface contamination and general area radiation levels. The REP was reviewed in detail, and a good overall radiological perspective was provided which included ALARA considerations. The radiation exposure dose estimates were predetermined based on previous containment radiation surveys and provided at the tailboard for the participants to be used as reference values while performing their duties. Health physics technicians provided direct oversight of the activities within containment.

During the Unit 1 facility tour of the containment and SFP facilities, radiation exposure levels measured independently by inspectors were in agreement with the licensee's survey records and postings. Inspectors determined that detailed work planning, and radiation protection pre-job briefings were adequate for the tasks being performed. REP and ALARA evaluations had been conducted adequately by radiation protection staff.

c. Conclusions

The radiation protection program met requirements and were appropriate for Unit 1's shutdown and defueled condition. Radioactive materials, radiation work activities, and radiation areas were being controlled in accordance with the requirements of 10 CFR Part 20, PDTS D6.8.1, PDTS D6.8.4, PDTS D6.11, and PDTS D6.12.

III. Radwaste Treatment, Effluent and Environmental Monitoring (IP 84750)

3 CONDUCT OF RADWASTE TREATMENT AND EFFLUENT & ENVIRONMENTAL MONITORING

3.1 Compliance with the License

a. Scope

Inspectors reviewed the licensee's radwaste treatment, radiation effluent release, and environmental monitoring programs for compliance with the PDTS. Inspectors reviewed the licensee's compliance with the PDTS as related to the Offsite Dose Calculation Manual (ODCM), **radwaste system operations, radiation effluent monitoring systems, and unplanned radiological releases. Inspectors reviewed radiation effluent monitor calibration records to determine compliance with the 18-month calibration frequency identified in ODCM Tables 4.2 and 4.4. Inspectors reviewed the SONGS 1995 Radiological Environmental Monitoring Program (REMP) and the 1995 Annual Radioactive Effluent Release Report (ARERR) to determine compliance with PDTSs D6.8.1(i), D6.8.4(b), and D6.9.1.3.

b. Observations and Findings

The Operations Department Health Physics Division had responsibility for on-site contamination and release events. The Chemistry Division had responsibility for the monitoring of effluent release pathways to the environment and maintaining effluent radiation monitors operational.

Changes to the ODCM, the gaseous radwaste treatment system, and uncontrolled or unplanned releases at SONGS-1 were reported in the 1995 ARERR in compliance with the requirements of the PDTSs. Inspectors verified that reviews or evaluations were performed by qualified individuals and reviewed by appropriate managers. Inspectors reviewed the operational status of liquid and gaseous effluent radiation monitors. This review revealed that previously identified inaccurate ODCM statements had been corrected in the 1995 ARERR. According to licensee's records, the effluent monitors had been calibrated as required by the ODCM. Additionally, radiation effluent monitor surveillance and operability requirements had been maintained in compliance with the ODCM.

There were no major changes reported in the 1995 REMP that affected Unit 1. The REMP was implemented as described in the ODCM and PDTS. Environmental data analysis was appropriately explained and graphically trended within the 1995 REMP report. Inspectors reviewed the Land Use Census data that was included in the 1995 REMP report. Inspectors determined that the licensee had appropriately assessed the land use around the facility, which included documenting significant changes.

c. Conclusions

The licensee's Annual Radioactive Effluent Release Report and environmental and effluent monitoring programs met the requirements of the license and Offsite Dose Calculation Manual.

3.2 Plant Stack Air Flow Detection System

a. Scope

The inspectors reviewed licensee documentation and discussed the status and design of the stack radiation monitoring system with plant personnel to assess the status of repair of this system.

b. Findings and Observation

The licensee's ODCM Specification 4.2.1.B.2., as referenced by Unit 1 PDTS, requires that the Stack Radiation Monitor R-1254 shall be functional during all modes of plant operation. If R-1254 remains nonfunctional for more than 30 days, the licensee shall explain in the next ARERR why the nonfunctional status was not corrected in a timely manner. During the plant tour, the inspectors noted that the plant vent stack flowrate indicator for Radiation Monitor R-1254 was not functional, but the radiation monitor remained functional. The condition was logged in the control room and operators implemented license requirements to explain the nonfunctional status. Stack vent air flow is one parameter used to calculate off-site radiological releases. In lieu of actual measured flowrate data from the installed iso-kinetic system, the licensee has been calculating stack air flow based on the number of fans in operation. Inspectors verified that this methodology was allowable per the ODCM, Table 4-3, Note 24, whenever the normal measurement system was nonfunctional.

Plant staff pointed out that flow indication had been inoperable from 1984 to the cessation of power operations in 1992, and this configuration has continued since Unit 1 permanently shutdown. Limiting Condition of Operation Action Request 1-94-025 documented this problem and referenced Non-Conformance Report 1-5292 (dated October 26, 1988) which attributed this problem to poor design and recommended replacement of the pitot tube. In January 1988, the pitot tube was replaced; however, unstable velocity conditions were observed and could not be resolved. As described in licensee documentation, a design change was to be prepared for implementation during the Cycle XI outage. Documentation of subsequent licensee actions could not be located during the inspection. At the conclusion of the inspection, the licensee had not yet resolved the nonfunctionality of the Unit 1 system. Inspectors noted that SONGS Units 2 and 3 had experienced similar problems with stack air flow indication. The Units 2 and 3 systems had recently been repaired and declared operable.

Inspectors verified that the appropriate procedures were approved, maintained, and used to assure that stack flow values were obtained based on the number of operating ventilation fans. These flow rate values were also judged to be conservative, because: (1) the licensee over-estimated actual fan flow rates by using design flow values for the fans; (2) the licensee calibrated their radiation effluent monitors to Xenon-135, which makes the instrumentation more sensitive to Krypton-85, a predominant radioactive isotope of concern; and (3) the licensee analytically increases stack flow by 25 percent to add more margin to their off-site dose calculations. During periods when the licensee purges containment, a possible period in which stack flow rate could be higher than expected, the inspector verified that appropriate procedural steps assured proper system alignment and flow rates.

Despite confidence that the licensee provides a conservative margin in their analyses used to determine the radiological release rate from the plant stack, the inspector discussed with Unit 1 plant management the lack of timeliness in resolving this flow indication matter. Inspectors noted that although a limiting condition for operation is not assigned to the plant stack flow instrumentation, on-line systems discussed in licensing documentation should be in operation unless it is under repair. Additionally, a licensee should resolve the degraded condition within a reasonable amount of time. The licensee indicated their intent to provide a schedule for resolution of this matter.

c. Conclusions

The inspectors verified that the licensee stack radiological release rates were conservative based on the considerations reviewed. The licensee procedures were adequate to control the ventilation line-up used for containment purge and ventilation. The plant vent flowrate indicator had not been functional since 1984. Another approved, but less accurate flowrate determination method had been in use since 1984. However, the failed flowrate indicator condition had been identified and scheduled for repair dating back to 1988. At the exit meeting, plant management acknowledged this observation

and committed to describing their resolution of the problem in writing to the NRC staff.

IV. Spent Fuel Pool Monitoring (IP 86700)

4 CONDUCT OF SPENT FUEL OPERATIONS

4.1 Compliance with Technical Specifications for Spent Fuel Pool

a. Scope

The inspectors reviewed licensee compliance with the PDTS and plant procedures related to SFP operations.

b. Observations and Findings

During the SAFSTOR mode of plant operation, compliance with the PDTS is required by Condition 2.C.(2) of the Possession Only License DPR-13. The PDTS provides system parameters and limits to ensure safe operation of the unit. The primary activities in progress at Unit 1 during the inspection included maintaining the facility in a SAFSTOR configuration and SFP activities. Inspectors found the following regarding compliance with the limitations and requirements established in the PDTS:

- PDTS D3.1.1.A requires that the SFP coolant temperature be maintained less than 150 degrees Fahrenheit. Actual water temperature was noted to be 72 degrees Fahrenheit.

- PDTS D3.1.1.B requires that at least one SFP cooling train be functional. During the inspection, the SFP cooling system was operating with the primary pump in service; support systems were also in service.

- PDTS D3.1.2 requires that the water level be maintained in the an elevation not less than 40 feet, 3 inches. Actual level was 40 feet, 9.75 inches.

- PDTS D3.1.3 requires that the SFP water chemistry, specifically the chloride and fluoride concentrations, be maintained less than the limits specified in Table D3.1.3-1. Inspectors reviewed records of chemistry analyses of the water in the SFP for 1996. The licensee also performed analyses for pH, sulfates, boron, and radioactivity. Compliance with the PDTS limits was verified and no significant adverse trends were observed.

- The auxiliary feedwater storage tank served as a source of makeup water for the SFP. PDTS D3.1.3 requires that the water level in this storage tank be above plant elevation 50 feet, 9 inches (corresponds to a minimum volume of 50,000 gallons of water). Actual water level was noted to be about 2.5 feet above the minimum water level.

- PDTS D3.3 requires that loads in excess of 1500 pounds be prohibited from travel over fuel assemblies in the SFP. During the inspection, no loads were noted to be over or near the SFP.

c. Conclusion

The licensee was found to be in compliance with all limitations and requirements established in the PDTS.

4.2 Spent Fuel Pool and Area Tours

a. Scope

Inspectors toured the SFP building and systems to assess the status of structures, systems, and components in SAFSTOR. This effort involved tours of the radiation control area, containment, control room, and the SFP building. Inspections included the assessment of housekeeping, fire hazards, radiation material control, access, and lighting.

b. Observations and Findings

Within the SFP building, good housekeeping and foreign material controls were observed. Materials observed within the building were judged to be necessary for the operation of the SFP system and were appropriately controlled. Fire hazards were essentially nonexistent with the exception of radiological and material control signs. Water clarity was good; however, the inspectors could not make a complete assessment because the SFP underwater lights were inoperable. The licensee planned to resolve this material deficiency. Inspectors observed no buildup of boron on the SFP liner, level instrumentation, or other components. Foreign material controls were implemented and provided assurance that extraneous materials would not degrade the cooling of spent fuel.

c. Conclusions

The inspectors observed that the licensee maintained a clearly demarcated foreign materials exclusion area around the SFP. Facility material condition, housekeeping, and cleanliness were excellent. A detailed tour of the SFP areas verified that structures, systems, and components continued to contribute to the safe storage of spent fuel and demonstrated appropriate material integrity.

4.3 Spent Fuel Pool Liner Leak Detection System

a. Scope

The inspectors observed the operation of the SFP leak detection system in the control room and reviewed licensee documentation to assess the quality of this plant modification.

b. Observations and Findings

In April 1996, the licensee installed, tested, and declared operable a new SFP leak detection system (FCN F6353J). The water level transducer was installed into the SFP leak detection well that is located adjacent to and external of the SFP wall. The leak detection well collects the water interior to the SFP external diaphragm via trenches that run beneath the SFP concrete floor. The licensee also installed a well pumpdown system to facilitate ease in removing water from the leak detection well. Before the modification, the level of water in the leak detection well was visually determined and manually pumped down.

The inspector verified that the modification was installed in accordance with Plant Procedure SO1-XXIV-10.10, "Unit 1 Post Shutdown Configuration Control." Plant drawings were updated to reflect the water level instrument system configuration. Based on interviews, the operations staff was familiar with the system and its operation. The licensee's determination that this system was "not required to be operational," was in accordance with established licensee quality assurance definitions. In general, the designation of "not required to be operational" defines the level of quality assurance applied to structures, systems, and components not necessary to assure public health and safety. Inspectors verified that appropriate quality elements such as signature verifications, material controls and identification, and reviews were conducted. These reviews included management, QA, and an independent engineering review. The leak detection instrumentation was also benched tested and calibrated prior to installation. Instrumentation loop accuracy and setpoints were determined and verified.

The licensee had justified the installation of this system based on appropriate considerations. As described in licensee documentation, this justification included personnel safety, enhanced monitoring of water accumulation in the leak detection well, and a potential reduction in personnel radiation exposure. The licensee's safety evaluation (10 CFR 50.59) incorporated the guidance as described in NRC Staff Requirements Memorandum, dated January 14, 1994, which states, in part, that the proposed modification should not (1) foreclose the site to a decommissioning option, (2) substantially increase the cost of decommissioning, or (3) cause any significant unreviewed environmental impact. No unreviewed safety question or change to Technical Specifications were identified.

c. Conclusion

The installation of the SFP leak detection indication system represented an excellent initiative to enhance the quality of information provided to the operations staff in their assessment of safe spent fuel storage. The system was appropriately evaluated and installed, and the operators were knowledgeable of system operation. Appropriate quality elements were provided in the design package to provide confidence that the system would work as designed and contribute to assessment capabilities.

4.4 Containment Sump Level Detector

a. Scope

The inspectors observed and reviewed the licensee's installation of a containment sump level detector to assess the quality of this work.

b. Observations and Findings

The licensee installed a reed-switch level detector in the containment sump to provide control room alarm indication of a sump high water level condition. The power supply for this system was a telephone line, and a control room panel provided an alarm and indicating lights. The licensee had installed and tested this system using Work Order 9511-055-2000, and oversight of this project was provided by the QA staff. The inspectors observed that the sump level detector was installed as described in the work instructions. No significant installation problems were noted. Personnel performing the installation and system test communicated effectively with the control room staff.

Following the installation of the level detector, inspectors questioned the control room staff about the operation of the new indicating system. Inspectors noted that the staff was aware of the function of the system; however, they had not been instructed on the appropriate response to system alarms. In particular, an alarm response and operating procedure had not been established. Neither had guidance on the significance of a high level condition been explained nor instructions involving corrective actions to rectify the condition been given. The Unit 1 superintendent stated that he would expedite closure of the maintenance work package and provide instructions to the operating staff as appropriate.

c. Conclusions

Inspectors concluded that the installation of the containment sump level detector represented an excellent initiative by the licensee to enhance the information available to the control room staff regarding the status of sump levels within containment. Inspectors noted that the licensee had not provided the control room operating staff with information regarding the appropriate response to alarms from the new sump level system; however, plant management stated that such information would soon be provided.

V. Miscellaneous Spent Fuel Issues (IP 90712)

5 (Closed) Licensee Event Report (LER) 50-206/96003-00: Missed surveillance testing of security system tamper switches. The inspector reviewed this item and determined it to be a minor matter, and it was appropriately closed for Unit 1.

VI. Management Meetings

6 EXIT MEETING SUMMARY

The inspectors presented the inspection results to members of licensee management at the exit meeting on June 6, 1996. The licensee acknowledged the findings presented. The Nuclear Regulatory Affairs Manager and Operations Manager committed to provide the NRC a schedule on resolving problems that are associated with the plant vent stack flow indication. The licensee did not identify as proprietary any information provided to, or reviewed by, the inspectors.

ATTACHMENT

PARTIAL LIST OF PERSONS CONTACTED

Licensee

J. Custer, Unit 1 Plant Superintendent
P. Chang, Chemistry/Effluent Supervisor
J. Darling, Licensing Engineer
G. Gibson, Manager, Compliance
P. Knapp, Manager, Health Physics
T. Llorens, Unit-1 Licensing
W. Marsh, Manager, Nuclear Regulatory Affairs
R. Waldo, Manager, Operations

INSPECTION PROCEDURES USED

IP 71707:	Operational Safety Verification
IP 83100:	Occupational Exposure During SAFSTOR and DECON
IP 84750:	Radwaste Treatment, Effluent and Environmental Monitoring
IP 86700:	SFP Monitoring
IP 90712:	In Office Review of Licensee Event Reports

ITEMS OPENED AND CLOSED

Opened

None

Opened and Closed

None

Closed

50-206/96003-00	LER	missed surveillance testing of security system tamper switches

LIST OF ACRONYMS USED

ALARA	as low as is reasonably achievable
AR	action requests
ARERR	Annual Radioactive Effluent Release Report
CCW	component cooling water
IDIR	Inter-Divisional Investigation Report
IP	inspection procedure
LER	Licensee Event Report
NSCP	Nuclear Safety Concerns Program
ODCM	Offsite Dose Calculation Manual
PDTS	Permanently Defueled Technical Specification
QA	quality assurance
REMP	Radiological Environmental Monitoring Program
REP	radiation exposure permit
SCE	Southern California Edison
SFP	Spent Fuel Pool
SONGS	San Onofre Nuclear Generating Station
SS	shift supervisor