UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

September 19, 2000

Harold B. Ray, Executive Vice President
Southern California Edison Co.
San Onofre Nuclear Generating Station
P.O. Box 128
San Clemente, California 92674-0128

SUBJECT: NRC INSPECTION REPORT 050-206/00-12

Dear Mr. Ray:

An NRC inspection was conducted August 21-24, 2000, at your San Onofre Nuclear Generating Station, Unit 1 facility. The enclosed report presents the scope and results of that inspection.

Areas reviewed during this inspection included organization, management and cost controls, safety reviews, design changes and modifications, self-assessments and corrective action program, spent fuel pool safety, solid radwaste management, radiation protection program and verification of compliance with selected technical specifications (TS). No violations were identified; therefore, no response to this letter is required.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC web site at http://www.nrc.gov/NRC/ADAMS/index.html (the Public Electronic Reading Room).

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

Sincerely,

/RA/

Dwight D. Chamberlain, Director
Division of Nuclear Materials Safety

Docket No.: 50-206
License No.: DPR-13

Enclosure:
NRC Inspection Report
050-206/00-12

cc w/enclosure:
R. W. Krieger, Vice President
Southern California Edison Company
San Onofre Nuclear Generating Station
P. O. Box 128
San Clemente, California 92674-0128

Mr. Michael R. Olson
Senior Energy Administrator
San Diego Gas & Electric Company
P. O. Box 1831
San Diego, California 92112-4150

Robert A. Laurie, Commissioner
California Energy Commission
1516 Ninth Street (MS 31)
Sacramento, California 95814

Mayor
City of San Clemente
100 Avenida Presidio
San Clemente, California 92672

Chairman, Board of Supervisors
County of San Diego
1600 Pacific Highway, Room 335
San Diego, California 92101

Ed Bailey, Radiation Program Director
Radiologic Health Branch
State Department of Health Services
P.O. Box 942732 (MS 178)
Sacramento, California 94327-7320

Douglas K. Porter
Southern California Edison Company
2244 Walnut Grove Avenue
Rosemead, California 91770

Dwight E. Nunn, Vice President
Southern California Edison Company
San Onofre Nuclear Generating Station
P.O. Box 128
San Clemente, California 92674-0128

Mr. Truman Burns\Mr. Robert Kinosian
California Public Utilities Commission
505 Van Ness, Room 4102
San Francisco, California 94102

David Spath, Chief
Division of Drinking Water and
Environmental Management
California Department of Health Services
P.O. Box 942732
Sacramento, California 94234-7320

Mr. Steve Hsu
Radiological Health Branch
State Department of Health Services
P. O. Box 942732
Sacramento, California 94327-7320

Alan R. Watts, Esq.
Woodruff, Spradlin & Smart
701 S. Parker St. Suite 7000
Orange, California 92868-4720

Sherwin Harris, Resource Project Manager
Public Utilities Department
City of Riverside
3900 Main Street
Riverside, California 92522

E-Mail report to David T. Diec:
E-Mail report to Tony McMurtray:

bcc w/enclosure to DCD (IE01)

bcc w/enclosure (via ADAMS distrib):
EWMerschoff
WCHuffman, NRR/PDND (O 11 B 20)
MTMasnik, NRR/PDND (O 11 B 20)
DDChamberlain
LLHowell
DBSpitzberg
JSloan, SRI
John Kramer, RI
RSCarr
EMGarcia
FCDB
MIS System
RIV Files (4th floor)

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*RSCarr	EMGarcia	JASloan	DBSpitzberg	DDChamberlain
/RA/	DBSpitzberg for	RSCarr for	/RA/	/RA/
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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket No:	50-206
License No:	DPR-13
Report No:	50-206/00-12
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:	August 21-24, 2000
Inspector:	Rachel S. Carr, Health Physics Inspector Emilio M. Garcia, Health Physics Inspector James A. Sloan, Senior Resident Inspector
Accompanied and Approved:	D. Blair Spitzberg, Ph.D., Chief Fuel Cycle & Decommissioning Branch
ADAMS Entry:	IR0500206-00-12; on 08/21-08/24/2000; Southern California Edison Co., San Onofre Nuclear Generating Station; Unit 1. Decommissioning Report. No violations identified.

EXECUTIVE SUMMARY

San Onofre Nuclear Generating Station (SONGS)
NRC Inspection Report 50-206/00-12

San Onofre Nuclear Generating Station, Unit 1, was permanently shutdown on November 30, 1992. The Unit 1 spent fuel was stored onsite in Units 1, 2 and 3 spent fuel pools and at an offsite facility in Morris, Illinois. Under the post shutdown decommissioning activities report (PSDAR), which was submitted to the NRC on December 15, 1998, the licensee was proceeding with the DECON option. The licensee was progressing with scheduled activities, which began in late October 1999. During the inspection, the licensee's efforts were focused on relocating the control room, preparing for large component removal inside containment and making final preparations for converting Unit 1 to "cold and dark." Cold and dark is the terminology used to describe the process of using temporary electrical power in lieu of the electrical power which was originally supplied to the station. During cold and dark, the original electrical power source is deenergized to protect workers from potential accidents as a result of cutting into energized cables. Temporary power is used to maintain the active systems required during decommissioning. Relocation of the control room and transferring power to temporary systems were successfully completed on Friday, September 8, 2000.

The licensee continued to maintain good oversight of unit 1 decommissioning activities. Required technical specifications surveillances were being conducted. The licensee's staff was maintaining an alert attitude on the logical progression of decommissioning activities and any potential impacts on the spent fuel pool or the operational units.

The site resident inspectors were spending approximately 10 hours a month observing decommissioning activities.

Organization, Management and Cost Controls

- The decommissioning fund report met the reporting requirements of 10 CFR 50.75 (Section 1).

- The licensee implemented a safety concerns program as recommended by the nuclear regulatory commission in a policy statement issued May 1996, as documented in the federal register notice [FR 24336]. The employees interviewed had a working understanding of the licensee's safety concern program (Section 1).

Safety Reviews, Design Changes and Modifications

- Acceptable programs were being implemented to ensure that activities, changes, tests and experiments were properly evaluated for compliance with NRC requirements in 10 CFR 50.59 concerning safety evaluations and that no unreviewed safety questions were involved with such activities (Section 2).

Self-Assessments, Auditing and Corrective Actions

- The licensee had a formal self-assessment and corrective action program that documented problems, brought the problems to the attention of management and tracked the resolution and completion of corrective actions. Management of the issues and corrective actions were considered satisfactory (Section 3).

Decommissioning Performance and Status Review

- The licensee had maintained an adequate level of control over safety hazards, fire loading, housekeeping and posting of radiologically controlled areas and maintenance of field detection equipment (Section 4).

- The inspectors concluded that the evolution for transferring the control room and transitioning power to cold and dark was well controlled. Plant monitoring from the new control room location in Building A52 was acceptable (Section 4).

Internal Exposure Control and Assessment

- The licensee's internal exposure control program and total effective dose equivalent - as low as is reasonably achievable (TEDE-ALARA) evaluations were adequate (Section 5).

Solid Radwaste Management

- The licensee conducted a comprehensive audit of their solid waste management program for the period of April 1998 through March 2000. The audit did not identify any violations or other significant deficiencies; however, four improvement opportunities were identified and documented in the licensee's corrective action program (Section 6).

Spent Fuel Pool Safety

- The licensee was maintaining the spent fuel pool water temperature, level and water quality in accordance with the applicable technical specifications. The auxiliary feedwater storage tank water level was being maintained in accordance with TS D3.2 (Section 7).

Occupational Radiation Exposure

- The licensee had an effective program to control and minimize internal and external exposure of personnel (Section 8).

Report Details

1 Organization, Management and Cost Controls (36801)

1.1 Inspection Scope

The decommissioning fund report, which was submitted to NRC on March 31, 2000, was reviewed against the requirements in 10 CFR 50.75. The methods in which the licensee resolved employee/safety concerns and provided information to employees were reviewed.

1.2 Observations and Findings

The decommissioning fund report was reviewed against the reporting requirements of 10 CFR 50.75 and found to meet the requirements of the regulations. It was observed that there was more money in the fund than was estimated to meet the NRC decommissioning requirements. The licensee had included the funds necessary to meet the estimated costs for removal and disposal of spent fuel and non-radioactive structures and materials beyond what was necessary to reduce residual radioactivity to required levels. As of June 1999, the licensee's decommissioning funds were no longer being collected.

In May 1996, the nuclear regulatory commission issued a policy statement on the "Freedom of Employees in the Nuclear Industry to Raise Safety Concerns Without Fear of Retaliation," which set forth the expectation that NRC licensees would establish and maintain a safety-conscious work environment. The licensee's administrative procedure SO123-XV-50.2, "Nuclear Safety Concerns," Revision 9, and nuclear organization directive, D-008, "SONGS Safety Conscious Work Environment and Resolution of Nuclear Safety Concerns," Revision 7, were reviewed. These documents established and implemented the licensee's safety conscious work environment. The licensee's program encouraged and expected workers to raise safety concerns without fear of discrimination, harassment, intimidation or retaliation. The licensee implemented an independent nuclear safety concerns program as an alternate means for a worker to raise safety concerns, in lieu of, or in addition to contacting their own management or the NRC.

Several nuclear safety concerns were reviewed. The concerns were documented and dispositioned in accordance with SO123-XV-50.2. The nuclear safety concerns program made a concerted effort to review the resolution and recommended corrective actions for each concern. The feedback to the submitter followed the suggested guidelines in the procedure.

The licensee included a training module in general employee training which covered a safety conscious work environment. Retraining was conducted annually using a video and computer based training. Annually, the licensee distributed information on the safety concerns program to all employees, contractors and supervisors. Additionally,

the licensee had recently offered a training course on partnership for nuclear safety to all health physics technicians, including contractors and house-technicians. A 1-week course was also offered to all licensee's supervisors, in which a 1.5-hour module was included on managing nuclear safety.

Another benchmark which the licensee used was a biennial safety culture survey. The licensee was in the process of collecting the final results from the latest survey. This survey will be the first one conducted in which Unit 1 will be evaluated as a separate unit.

While independently touring the protected area, brief interviews were conducted with approximately 12 individuals. The individuals represented a cross-section of departments, as well as, contractor and company positions. The inspector inquired how they would handle any safety concerns that they may have. All individuals stated that they had received training on how to bring up safety concerns. Most stated that if they had any safety concerns that they would first bring them up to their supervisor. A few individuals stated that they could drop a note of their concerns at one of the drop boxes maintained by the nuclear safety concern (NSC) program. A few stated that they could call the NSC 800 number. Few had actual experience with the system. Two stated that although they had been told that they would not be discriminated for raising safety concerns, they still wondered if discrimination might still occur. One stated that he had seen corrective actions as a result of the concerns he or she had brought up. Several stated that the recent 4-hour training presented by an outside contractor was very useful. Others stated that they were already familiar with the program and wondered why they had received an additional 4 hours of training. Several mentioned receiving a survey questionnaire about the NSC program.

1.3 Conclusions

The decommissioning fund report met the reporting requirements of 10 CFR 50.75.

The licensee implemented a safety concerns program as recommended by the nuclear regulatory commission in a policy statement issued May 1996, as documented in the federal register notice [FR 24336]. The employees interviewed had a working understanding of the licensee's safety concerns program.

2 Safety Reviews, Design Changes and Modifications (37801)

2.1 Inspection Scope

The facility change report as required by 10 CFR 50.59(d)(2) was reviewed to verify the submittal met the 24-month requirement. Selected safety screens and safety evaluations conducted since May 2000, were reviewed to verify proper evaluations were completed for compliance with NRC regulations in 10 CFR 50.59, concerning safety evaluations and that no unreviewed safety questions were involved with such activities.

2.2 Observations and Findings

The facility change report was submitted on November 8, 1999, for the period July 21, 1997, through May 9, 1999. The report contained a brief description of 10 CFR 50.59 safety evaluations which included facility changes, procedure changes and any tests and experiments which were performed.

Fourteen screening actions were selected since the last inspection and were reviewed. Three of the screening actions resulted in the determination that safety evaluations were required. Specifically, the screening process determined that: (1) FCN F8298J, installation of Unit 1 wide range gas monitor was a change to the facility as described in DSAR 5.0 “Radioactive Waste Management,” (2) FCN F21855C, construction of GTCC waste cans, racking in lower cavity, labeling and delivery of cans to the reactor cavity prior to start of segmentation was a change to the facility as described in DSAR 3.4.5.2, “Interfaces with Spent Fuel Storage Facility,” (3) FCN F8297J, installation of Unit 1 area radiation monitors was a change to the facility as described in Section 3.0, "Facility Description” of the DSAR and Section 5.0, “Radioactive Waste Management,” of the DSAR. An additional safety evaluation for FCN F23080 was reviewed which documented the siting of eight remote transmitter units and radio linking to the new plant information system which provided status and alarms of key Unit 1 parameters in the new control room. The screening evaluations and safety evaluations were adequate and in compliance with applicable NRC regulations.

2.3 Conclusions

The facility change report which was submitted on November 8, 1999, met the requirements of 50.59(d)(2). Acceptable programs were being implemented to ensure that activities, changes, tests and experiments were properly evaluated for compliance with NRC requirements in 10 CFR 50.59 concerning safety evaluations and that no unreviewed safety questions were involved with such activities.

3 Self-Assessments, Auditing and Corrective Actions (40801) & (40500)

3.1 Inspection Scope

The licensee conducted periodic self-assessments and investigations into events that occurred during operations, maintenance and surveillance activities. These events were formally tracked and evaluated by management, under the action request program. Several selected action requests were reviewed to determine whether the licensee’s program for tracking, evaluating and dispositioning potential problems was being effectively implemented.

3.2 Observations and Findings

The licensee conducted periodic self-assessments and investigations into events that occurred during operations, maintenance and surveillance activities. These events were

formally tracked and evaluated by management. Several selected items were analyzed to determine whether the licensee's system of tracking, evaluating and dispositioning potential problems was being effectively implemented.

The health physics self-assessment report for the second quarter 2000, which was issued on July 27, 2000, was reviewed. The report provided an analysis of health physics trends and performance indicators. The report also documented strengths and weaknesses of the program, as well as the effectiveness of the self-assessment program. The licensee indicated that the second quarter performance indicators showed satisfactory results. The quarterly self-assessment was thorough and comprehensive. The report was a good review of the program health.

Three action requests were selected for review. The issues addressed in the action requests were as follows.

- Review of activities associated with unit 1 radioactive material release program (AR# 000200873)
- Review of health physics processes associated with follow-up whole body counts (AR# 000801374)
- Evaluation of work activities associated with Unit 1 decommissioning upender work, which created unanticipated high airborne levels (AR# 000101782).

Each action request computer record provided a chronological account of the identification of the problem, subsequent reviews and assignment of corrective actions to appropriate plant staff or management. Upon completion, the corrective actions and final disposition(s) were documented in the action request records.

On January 27, 2000, the licensee experienced unanticipated high airborne levels during segmentation of the upender for disposal. The segmentation utilized plasma-arc cutting technology which was performed in a tent enclosure inside Unit 1's containment building. Two portable ventilation units were used and exhausted into containment through high-efficiency filters. Additionally, the workers used NIOSH approved particulate half-masks respirators. The workers also wore lapel air samplers. The licensee performed both gamma and alpha analyses of the lapel air sample(s) and determined that the limiting factor was alpha with a DAC calculation of 670 DACs. An internal dose of 5 rem would result from 2000 DAC-hours. The licensee was expecting a 3 to 1 ratio for the alpha to gamma DAC, but found a 67 to 1 ratio. This significant difference in ratios prompted the licensee to initiate Action Request 000101782 to determine whether additional radiological controls were necessary due to the higher contribution from the alpha radiation.

The licensee had completed corrective actions to close the action request 000101782. The following closure items were reviewed during the inspection.

- Whole body counting procedures, SO123-VII-209.7, “Internal Occupational Exposure Monitoring Program,” Revision 2 and SO123-VII-20.7.2, “Canberra Accuscan Whole Body Counter,” Revision 3.
- Procedure SO123-III-4.36, Health Physics Sample Handling,” Revision 6, which clarified when to perform an alpha count on filters.
- Procedure SO123-VII-20.9, Radiological Surveys, which incorporated steps for performing timely field checks on filters, for alpha airborne radioactivity.
- Training objectives provided to all employees, including craft personnel.
- Memorandum for file entitled, “Analysis of Airborne Radioactivity During Upender Segmentation Work Conducted January 27, 2000", dated May 25, 2000, ITA# 00-030, which verified alpha to gamma ratios and calculated alpha scaling factors, which were used for internal dose assessment.
- Procedures SO123-VII-20.4.3, “ALARA Job Reviews,” Revision 1 and SO 123-VII-20.10, “Radiological Work Planning and Controls,” Revision 4, which incorporated adequate evaluation for TEDE-ALARA reviews.

The licensee had implemented the lessons learned into the new work effort as documented in the reactor coolant system loop cut package, WCP #00-01, which was reviewed. For example, during the job evolution of cutting the reactor coolant system piping, the air sample on steam generator #B hot leg indicated less than 0.30 DAC and during breach of the piping, the air sample analysis indicated 4.8 DACs. There was a significant reduction in airborne contamination as a result of the corrective actions and implementation of engineering controls.

3.3 Conclusions

The licensee had a formal self-assessment and corrective action program that documented problems, brought the problems to the attention of management and tracked the resolution and completion of corrective actions. Management of the issues and corrective actions were considered satisfactory.

4 Decommissioning Performance and Status Review (71801)

4.1 Inspection Scope

A facility tour was conducted with the licensee to observe housekeeping, potential safety hazards, fire loading problems, structural condition of facilities and adequacy of radiological controls. The licensee’s relocation of the control room and transition to cold and dark were evaluated.

4.2 Observations and Findings

A plant tour was performed of the licensee's facility, including the radiologically controlled area and spent fuel pool. The licensee had moved the secondary side into the radiologically controlled area for ease of removal and control of equipment. There were good housekeeping controls in place throughout the facility. Containment was maintained clean for the work being performed. The licensee had "cool area" postings for low dose waiting areas to support locations of high exposure work. There were good radiological work practices observed throughout the facility. Decommissioning activities were being planned, conducted and supervised with appropriate considerations for occupational and radiological safety.

There was minimum work being conducted inside containment. Primarily the licensee was removing the remaining staged plant equipment, such as encore drives and heating, ventilation and air-conditioning (HVAC) system. Containment had essentially been cleared of the remaining interference equipment in preparation for large component removal and vessel internals segmentation projects. The licensee explained that the missile shield would be placed over the lower cavity. This would protect the blind flange on the transfer canal to the spent fuel pool as well as the greater than class "C" (GTCC) waste, which will be stored in the lower cavity until transfer to the dry cask storage system. [GTCC waste is defined by 10 CFR 61.55.] The GTCC waste will be generated as a result of the vessel internals segmentation project. Asbestos and lead abatement was still being performed in the plant.

The spent fuel pool had good water clarity. There were adequate radiological postings around the spent fuel pool. The licensee controlled the spent fuel pool area as a foreign material exclusion zone.

On September 8, 2000, the resident inspectors observed the transfer of the control room from Building A73 to A52. The evolution was conducted in conjunction with opening the 220 kV switchyard breakers to deengergize the Unit 1 reserve auxiliary transformer "C" and performing some additional 480 volt switching, to achieve "cold and dark" conditions. The evolution was conducted in accordance with special operating procedure SO1-SPOP-80, "Electrical Distribution System Operation and Transition to Cold & Dark," Temporary Change Notice 1-1, and was further controlled by general order SO123-IT-1, "Infrequently Performed Tests and Evolutions," Temporary Change Notice 5-1. The inspectors attended the onsite review committee meeting on September 5, 2000, in which the evolution was reviewed and approved.

At approximately 2:49 p.m., the licensee disconnected the plant information monitoring system in the A73 control room, and approximately 15 minutes later, reestablished the monitoring system in the A52 control room, with a shutdown control room operator stationed in both locations. The communications systems were verified to function from the A52 control room. At 3:17 p.m., the control room command function was officially transferred to the A52 control room. At 3:22 p.m., the operators opened the 220 kV switchyard breakers that had been feeding the permanent electrical distribution

system, deenergizing that system. Operators in the A73 control room verified that the annunciators received, because of the electrical system realignment, were as expected.

The resident inspectors verified that the operating components for cooling the spent fuel pool remained in operation following the electrical distribution changes. These and other components were being powered from a temporary 12 kV system that were unaffected by the change. The inspectors also confirmed that the annunciators on the plant information system in the A52 control room were functioning and that the emergency procedures and controlled drawings had been transferred to the new control room.

4.3 Conclusions

The licensee had maintained an adequate level of control over safety hazards, fire loading, housekeeping and posting of radiologically controlled areas and maintenance of field detection equipment. The inspectors concluded that the evolution for transferring the control room and transitioning power to cold and dark was well controlled. Plant monitoring from the new control room located in Building A52 was acceptable.

5 Internal Exposure Control and Assessment (83725)

5.1 Inspection Scope

Radiological controls and TEDE-ALARA evaluations were reviewed to determine whether process or other engineering controls were used to the extent practicable to limit concentrations of airborne radioactive materials. In addition, personnel internal exposures received during the year 2000 were reviewed.

5.2 Observations and Findings

Procedures SO123-VII-20.4.3, “ALARA Job Reviews,” Revision 1, and SO123-VII-20.10, “Radiological Work Planning and Controls,” Revision 4, were reviewed. The procedures incorporated adequate evaluation for TEDE-ALARA reviews. The procedures incorporated pre-planning and review limits for jobs in which respiratory protection was being considered or the internal dose estimate met the planning criteria.

The work package for reactor coolant system loop cuts, WCO #00-01, Revision 1, was reviewed. The items reviewed in the package were the ALARA estimate, pre-job meeting checklist, job review meeting attendance record and lessons learned. The TEDE-ALARA evaluation was included in the work package and followed the applicable procedure guidance. The work package was adequate and met the procedure guidance requirements.

Whole body counting procedures, SO123-VII-209.7, “Internal Occupational Exposure Monitoring Program,” Revision 2, and SO123-VII-20.7.2, “Canberra Accuscan Whole Body Counter,” Revision 3, were reviewed. The procedures were revised to clarify when an initial whole body count was required. In addition, the procedures were clarified for

when followup actions were required in the event a whole body count indicated greater than 0.1 percent of annual limit of intake.

There were three planned internal dose assessments performed during 2000 with subsequent internal dose calculations assigned to the individuals. The licensee had performed TEDE-ALARA evaluations for the respective jobs. The calculated alpha ratios and scaling factors for the internal dose assessment were based on cobalt-60 and were supported by plant data.

5.3 Conclusions

The licensee's internal exposure control program and TEDE-ALARA evaluations were adequate. Recent changes had been incorporated into the whole body counting program which ensured the initial whole body count was performed as required by procedure.

6 Solid Radwaste Management (86750)

6.1 Inspection Scope

The licensee's radwaste activities audit for Unit 1 was reviewed.

6.2 Observations and Findings

Audit SCES-006-00, "Radioactive Materials Controls," which covered the period April 1998 through March 2000, was reviewed. The audit team consisted of nuclear oversight personnel and included a peer evaluator from another company. The audit reviewed the implementation and compliance with applicable regulations in 10 CFR Parts 20, 61.55 and 61.56; 10 CFR Part 71, including Subpart H; Unit 1 permanently defueled technical specification; Unit 2/3 licensing control specifications; and the quality assurance program described in the licensee's topical quality assurance manual as related to the processing, packaging and shipping of radioactive materials.

The licensee had not identified any violations or deficiencies during the audit. However, the audit revealed four improvement opportunities for which the licensee initiated four action requests.

6.3 Conclusions

The licensee conducted a comprehensive audit of their solid waste management program for the period of April 1998 to March 2000. The audit did not identify any violations or other significant deficiencies; however, four improvement opportunities were identified and documented in the licensee's corrective action program.

7 Spent Fuel Pool Safety (60801)

7.1 Inspection Scope

The spent fuel pool water temperature, level monitoring and water quality were reviewed for compliance with applicable technical specifications. In addition, the auxiliary feedwater storage tank water level was verified for compliance with applicable technical specifications.

7.2 Observations and Findings

Spent fuel pool safety was reviewed for compliance with TS D3.1, which states the water temperature shall be maintained below 150°F and the water level shall be maintained greater than 40 feet and 3 inches. The inspector reviewed "Control Room Daily Log Sheet" records for the period of March 1 through August 22, 2000. The records were documented in accordance with procedure SO1-12.1-4, "Control Room Shift and Daily Log Readings," Revision 7. The values of the temperature and water level had been recorded for each shift and had not exceeded the applicable technical specification limits for the period reviewed. The highest temperature noted for this period was 78 degrees Fahrenheit and the lowest water level was 40 feet 8.25 inches.

Spent fuel pool water quality was maintained in accordance with TS D3.1.3, which states the concentration of chloride and fluoride ions shall be maintained at less than 150 parts per billion (ppb) and be analyzed at least once per month. Electronic records of sample analysis results for the period, January 1 through August 22, 2000, were reviewed. During this period, the highest recorded concentration of chloride was 22.2 ppb and for fluoride it was 3.0 ppb. The licensee had met the technical specifications requirements for both the concentration limit and the frequency of sample analysis.

The auxiliary feedwater storage tank water level was reviewed for compliance with TS D3.2, which states the water level shall be maintained at 50 feet 9 inches, and be surveyed weekly. The inspector reviewed records for the period, March 1 through August 16, 2000. For the period reviewed, the records indicated that the surveillance had been conducted weekly and the level of the auxiliary feedwater storage tank was above the required 50 feet 9 inches.

7.3 Conclusions

The licensee was maintaining the spent fuel pool water temperature, level and water quality in accordance with the applicable technical specifications. The auxiliary feedwater storage tank water level was being maintained in accordance with TS D3.2.

8 Occupational Radiation Exposure (83750)

8.1 Inspection Scope

The licensee's efforts towards external exposure reduction and posting and labeling requirements were reviewed during observations of the radiologically controlled area and by direct measurements of radioactive material.

Licensee evaluations of personal contamination events were reviewed to determine whether the evaluations properly identified the cause(s) and whether corrective actions were adequate to prevent recurrence.

8.2 Observations and Findings

The inspectors conducted several tours of the protected area and radiologically controlled area, including containment. During these tours, the radiation exposure permit (REP) program was observed. The radiation exposure permit program was utilized to control and minimize personnel exposures. Radiological controls were established for each respective REP and the worker had to acknowledge his/her understanding of the REP, prior to being authorized on its use. There was adequate electronic verification(s) and HP control points in place to ensure the workers were assigned to the correct REP and had an understanding of their exposure.

Independent and confirmatory measurements were conducted to verify posting of areas and labeling of containers. The measurements were conducted using Ludlum Model 3 radiation survey meter, Serial Number 45729, with a Model 44-6 side window GM, Serial Number 031940. The confirmatory measurements made were comparable to those documented by the licensee. The independent measurements did not identify any radioactive material in unexpected locations or containers with radioactive material that was not labeled.

The licensee used an independent system to track personnel contamination events. At the time of the inspection, there had been 93 contamination events generated since the beginning of the year. The contamination events were not significant and no trends were documented.

The licensee had used several types of fixative agents at various locations in the plant to reduce the spread of radioactive contamination. One type of coating was used throughout the reactor cavity. The coating was used as a sealer for the liner to prevent water leaks in preparation of filling the cavity with water to perform vessel internals segmentation.

The licensee had made a concerted effort to reduce external exposure inside of containment. Procedure SO123-VII-20.2.4, "Temporary Shielding," Revision 5, was reviewed. The temporary shielding procedure was updated to reflect Unit 1, which was not subject to seismic controls except for the spent fuel pool system and piping.

All hot spots in Unit 1 had been identified and evaluated. There were nine hot spots in containment and 14 hot spots in other areas of the Unit 1 power block. The licensee indicated the identified hot spots would be removed or shielded in order to reduce external exposure. Other sources in containment have been identified as dose contributors. The licensee was evaluating and removing the respective sources, such as the pressurizer surge line (SI-RCS-5013). The licensee was proactive in identifying and reducing external exposures.

8.3 Conclusions

The licensee had an effective program to control and minimize the internal and external exposure of personnel.

9 Exit Meeting Summary

The inspector presented the inspection results to members of licensee management at the exit meeting on August 24, 2000. The licensee did not identify as proprietary any information provided to, or reviewed by, the inspector.

ATTACHMENT

PARTIAL LIST OF PERSONS CONTACTED

Licensee

D. Brevig, Manager, External Regulation
T. Cooper, HP Engineering Supervisor
J. Custer, Unit 1 Plant Superintendent
J. Darling, Shift Supervisor
G. Fausett, HP ALARA Coordinator
W. Frick, Manager, Nuclear Safety Concerns
J. Madigan, Manager, Health Physics
M. McBrearty, Compliance Engineer
J. Morales, Project Manager, Dry Fuel Storage
J. Posik, Health Physics
M. Russell, Nuclear Oversight Regulatory Affairs
E. Scherer, Manager, Nuclear Oversight Regulatory Affairs
J. Sills, Project Manager, Unit 1HP
D. Spiker, Manager, Nuclear Construction & Decommissioning
R. St. Onge, Manager, Decommissioning Project
J. Wambold, Vice President, Business and Financial Services
H. Wood, Quality Assurance Engineer, Nuclear Oversight

INSPECTION PROCEDURES (IP) USED

IP 36801	Organization, Management, and Cost Controls at Post-Shutdown Reactors
IP 40801	Self Assessment, Auditing, and Corrective Actions
IP 60801	Spent Fuel Pool Safety
IP 62801	Maintenance and Surveillance
IP 71801	Decommissioning Performance and Status Review at Post-Shutdown Reactors
IP 83750	Occupational Radiation Exposure
IP 84750	Radioactive Waste Treatment, and Effluent and Environmental Monitoring
IP 86750	Solid Radioactive Waste and Transportation of Radioactive Material

ITEMS OPENED AND CLOSED

Opened

None

Closed

None

Discussed

None

LIST OF ACRONYMS USED

ALARA	As Low As is Reasonably Achievable
AR	Action Request
DSAR	Decommissioning Safety Analysis Report
PDTS	Permanently Defueled Technical Specification
PSDAR	Post Shutdown Decommissioning Activities Report
QA	Quality Assurance
TEDE	Total Effective Dose Equivalent