UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005

June 1, 2005

Mr. James Shetler, Assistant General Manager
Energy Supply
Sacramento Municipal Utility District
6201 'S' Street
P.O. Box 15830
Sacramento, California 95852

SUBJECT: NRC INSPECTION REPORT 050-00312/05-002

Dear Mr. Shetler:

An NRC inspection was conducted on April 11 through May 5, 2005, at your Rancho Seco Nuclear Generating Station. On May 5, 2005, at the conclusion of the inspection, an exit briefing was conducted with Mr. Mike Bua, Acting Plant Manager, and other members of your staff. The enclosed report presents the scope and results of that inspection.

The inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection included reviews of your auditing and corrective action program, plans and preparations for the reactor vessel internals segmentation, the status of other decommissioning activities, and occupational radiation exposures. No violations of NRC regulations were identified during the inspection.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/Adams.html. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction.

Should you have any questions concerning this inspection, please contact Mr. Emilio Garcia, Health Physicist, at (530) 756-3910 or the undersigned at (817) 860-8191.

Sincerely,

/RA/

D. Blair Spitzberg, Ph.D., Chief
Fuel Cycle and Decommissioning Branch

Docket No.: 050-00312
License No.: DPR-54

Enclosure:
NRC Inspection Report
050-00312/05-002

cc w/enclosure:
Thomas A. Baxter, Esq.
Shaw, Pittman, Potts & Trowbridge
2300 N. Street, N.W.
Washington, DC 20037

QA/Licensing Superintendent
Rancho Seco Nuclear Generating Station
14440 Twin Cities Road
Herald, CA 95638-9799

Sacramento County Board
of Supervisors
700 H. Street, Suite 2450
Sacramento, CA 95814

Assistant General Counsel
Sacramento Municipal Utility District
6201 S Street
P.O. Box 15830
Sacramento, CA 95852-1830

Radiation Program Director
California Radiologic Health Branch
State Department of Health Services
P.O. Box 997414 (MS 7610)
Sacramento, CA 95899-7414

Site Document Control Supervisor
Sacramento Municipal Utility District
Rancho Seco Nuclear Generating Station
14440 Twin Cities Road
Herald, CA 95638-9799

Commissioner's Office
California Energy Commission
1516 Ninth Street (MS 34)
Sacramento, CA 95814-5512

bcc w/enclosure (via ADAMS distribution):
LDWert
CLCain
JBHickmnan, NRR/DLPM/PDIV-2
ACMcMurray, NRR/DSSA/SPLB
DBSpitzberg
EMGarcia
KEGardin
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U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket Nos.:	050-00312
License Nos.:	DPR-54
Report Nos.:	050-00312/05-002
Licensee:	Sacramento Municipal Utility District
Facility:	Rancho Seco Nuclear Generating Station
Location:	14440 Twin Cities Road Herald, California
Dates:	April 11 through May 5, 2005
Inspector:	Emilio M. Garcia, Health Physicist
Approved By:	D. Blair Spitzberg, Ph.D., Chief Fuel Cycle and Decommissioning Branch
Attachments:	Supplemental Information Partial List of Documents Reviewed
ADAMS Entry :	IR 05000312-05-002 on 04/11-05/05/05; Sacramento Municipal Utility District; Rancho Seco Nuclear Generating Station. Decommissioning Report; No Violations.

EXECUTIVE SUMMARY

Rancho Seco Nuclear Generating Station
NRC Inspection Reports 050-00312/05-002

The licensee was actively conducting dismantling activities in the reactor building, auxiliary building, spent fuel building and other exterior areas. All spent fuel had been removed from the spent fuel pool and placed in the Independent Spent Fuel Storage Installation (ISFSI). The reactor vessel head, pressurizer, pressurizer drain tank and the two steam generators had been removed from the reactor building and shipped to an offsite disposal facility. The segmentation of reactor vessel internals was started.

Self-assessment, Auditing and Corrective Action

- The licensee was effectively maintaining their Rancho Seco Corrective Action Program to control the identification, evaluation, and resolution of problems. Audits conducted in calendar year (CY) 2004 and scheduled for CY 2005 addressed all facility activities required to be audited. All lead auditors for CYs 2004 and 2005 audits met qualification requirements (Section 1).

Decommissioning Performance and Status Review

- Dismantlement activities continued in the reactor building, auxiliary building, spent fuel building and other exterior areas. The reactor vessel head, pressurizer, pressurizer relief tank and steam generators had been removed from the reactor building and shipped for disposal. Additionally, all major components in the auxiliary building had been removed and shipped for disposal. Characterization radiation surveys had been initiated in the auxiliary, turbine, and fuel handling buildings (Section 2.1).

- The licensee and contractors had made plans and preparations and had initiated the segmentation of the reactor vessel internals. The inspector concluded that the licensee and contractor staff were cognizant of their responsibilities and duties and aware of facility conditions and activities (Section 2.2).

Occupational Radiation Exposure

- The audit and surveillance of the occupational radiation exposure program were performance-based, and their overall quality was very good. The inspector concluded that the licensee had an effective program for identifying and correcting deficiencies or weaknesses related to the control of radiation or radioactive materials (Section 3.1).

- Changes made to the occupational radiation protection program did not decrease its effectiveness (Section 3.2).

- The inspector concluded that the licensee had made adequate planning and preparations for the segmentation, packaging and transportation of the reactor vessel internals, a job with potentially significant radiation exposures (Section 3.3).

- The licensee was maintaining an effective program to monitor occupational radiation exposures. Occupational exposures for CY 2004 were below regulatory limits (Section 3.4).

- Although the as low as reasonably achievable (ALARA) goals had not been achieved for 2004, the total exposures were below the estimates. The inspector concluded that the licensee had established and maintained an ALARA program that included assigned responsibilities, procedures, training, planning, dose estimates, and dose goals (Section 3.5).

Report Details

Summary of Facility Status

The Rancho Seco Nuclear Generating Station was permanently shut down in June 1989. All spent reactor fuel has been moved to an onsite Independent Spent Fuel Storage Installation (ISFSI). At the time of this inspection, the licensee was conducting decommissioning activities at the site. Decommissioning was being performed under the provisions of the incremental decommissioning option of Rancho Seco's Post Shutdown Decommissioning Activities Report, dated March 20, 1997.

Decommissioning work activities included the auxiliary building, reactor building, spent fuel building and exterior areas. All major components in the auxiliary building had been removed, packaged and shipped for disposal. In the reactor building, the major piping, the four reactor coolant pumps, the core flood tanks, reactor vessel head, pressurizer, pressurizer drain tank, and the two steam generators had been removed, packaged and shipped offsite for disposal. In the fuel handling building, the spent fuel pool water had been processed and released offsite. Most of the pool liner plates had been cut, removed and shipped for disposal. During this inspection, the licensee initiated the reactor vessel internals segmentation project.

1 Self-assessment, Auditing and Corrective Action (IP 40801)

1.1 Inspection Scope

The inspector reviewed the licensee's administrative procedures that control the identification, evaluation, and resolution of problems, and the Quality Assurance (QA) Plan, and other controlled document for the conduct of QA audits and surveillances. The inspector also reviewed the licensee's QA audit organization, staffing, and qualifications.

1.2 Observations and Findings

a. Identification, Evaluation, and Resolution of Problems

The licensee's program for the resolution of non-conformances, material or programmatic deficiencies, or conditions adverse to quality or safety remained as described in Section 1.2a of Inspection Report 50-312/2002-004 and that was again examined in Section 2.2a of Inspection Report 50-312/2003-004. This program was called the Rancho Seco Corrective Action Program. Table 1 lists the applicable procedures of the Corrective Action Program. None of these procedures had been revised since this area was last inspected in December 2003.

Table 1
Rancho Seco Corrective Action Program Procedures

Number	Title	Rev.	Effective
RSAP-0102	Stop Work Order	6	Mar 03, 1994
RASP-0260	Commitment Management Review Group and Commitment Tracking Systems	12	Sep 04, 2003
RSAP-1301	Corrective Action Program	5	May 26, 1994
RSAP-1305	Corrective Action Request	3	Dec 09, 1993
RSAP 1308	Potential Deviation from Quality	17	Feb 13, 2003
RSAP-1310	Deviation from Quality	8	Sep 24, 2002

In CY 2004, 36 Potential Deviation from Quality reports (PDQs) were initiated, of these, 13 were determined to be Deviations from Quality (DQs). No Corrective Action Request or Stop Work Orders were initiated in CY 2004. As of May 5, 2005, five PDQs were initiated, of these two were determined to be Deviations from Quality, and no Corrective Action Request or Stop Work Orders had been initiated. The inspector reviewed the list of PDQs and DQs that remained open. There were nine open items, including two opened in 2005. The oldest item was from CY 2003. The commitment tracking records data base provided information on each of these items. The inspector concluded that the licensee was appropriately addressing the timely resolutions of these open items.

The inspector reviewed selected records of recent Commitment Management Review Group (CMRG) meetings and noted that the meeting frequency and group membership was as described in procedure RSAP-0260, Commitment Management Review Group and Commitment Tracking Systems. These records indicated that the CMRG was conducting initial reviews and characterizations of new PDQs. The CMRG was also assigning tasks, establishing priorities and reviewing proposed resolutions for PDQs and other identified problems. The inspector concluded that the licensee was effectively maintaining their Rancho Seco Corrective Action Program to control the identification, evaluation, and resolution of problems.

b. QA Audit Organization, Staffing, and Qualifications

The licensee's Quality Assurance Audit Organization, Staffing and Qualifications remained as described in Section 1.2b of Inspection Report 50-312/2002-004, and that was again examined in Section 2.2b of Inspection Report 50-312/2003-004. The QA audit group consisted of three auditors reporting directly to the quality assurance/licensing/administration/training (QALAT) superintendent. The QALAT superintendent informed the inspector that with the advanced state of decommissioning of the plant, his position would be eliminated as of the end of May 2005, and that he intended to retire. Responsibilities for leading the QA audit group would likely be assigned to one of the lead auditors.

The procedures applicable to the QA group, remained as described in Inspection Reports 50-312/2002-004 and 50-312/2003-004. No changes had occurred with the Audits and Audit Frequencies described in the Rancho Seco Quality Manual (RSQM) Section XVIII.

The inspector reviewed records of audits conducted since this area was last inspected in December 2003. The licensee had conducted 10 audits in CY 2004 and had completed 1 audit in CY 2005, with 2 more underway. A total of 15 audits were scheduled to be performed in CY 2005. None of the reports of CY 2005 audits had been issued as of the time of the inspection. Audits conducted in CY 2004 and to be conducted in CY 2005, addressed all 34 facility activities listed in RSQM Section XVIII at the required frequency. Records indicated that all lead auditors for audits in CYs 2004 and 2005 were qualified as lead auditors.

In CY 2004, the licensee had conducted 49 surveillances and of April 18 2005, the licensee had conducted 7 surveillances in CY 2005. The inspector selected audit reports 04-A-006, 04-A-010, and surveillance reports 04-S-018, 04-S-020, 04-S-043, 05-S-004 and 05-S-005 for review. The inspector confirmed that the audit and surveillances were conducted per the commitments in the Rancho Seco Quality Manual. The individuals that conducted the audit and surveillances were independent of the areas being audited. The audits used approved checklists. The audit team personnel were qualified and were authorized to perform the audits or surveillances in the areas audited. The audits and assessments were conducted in a timely manner.

1.3 Conclusion

The licensee was effectively maintaining their Rancho Seco Corrective Action Program to control the identification, evaluation, and resolution of problems. Audits conducted in CY 2004 and scheduled for CY 2005 addressed all facility activities required to be audited. All lead auditors for CYs 2004 and 2005 audits met qualification requirements.

2 Decommissioning Performance and Status Review (IP 71801)

2.1 Facility Tours

a. Inspection Scope

Tours of the site were conducted to observe work activities underway, including observation of housekeeping, safety practices, fire loading and radiological controls.

b. Observations and Findings

Tours of the reactor building, auxiliary building, spent fuel building and other areas of the plant were conducted to observe dismantling and decommissioning activities in progress. The work observed was being conducted in a safe and orderly manner. Radiological controls, including postings and barriers, were in place. The inspector also noted good housekeeping and fire protection practices in all areas.

The reactor vessel head, pressurizer, pressurizer relief tank and steam generators had been removed from the reactor building and shipped for disposal. This left only the reactor vessel and reactor internals as the last major components. The missile shields had been relocated to the bottom of the "D" ring to permit better access to the reactor vessel. Fire extinguishers were located at each elevation in the reactor building. The fire extinguishers had been serviced within the last year. Emergency kits were also located at each elevation and included eye wash, emergency horns and a flash light. All of these kits were complete and operable.

All "major" components had been removed from the auxiliary building. The licensee was now removing the electrical equipment, cabling, and the heating, ventilation and air conditioning ducts from various elevations in the building. The licensee was also conducting characterization radiation surveys at the minus 20-foot elevation.

All the liner plates had been removed from the walls of the spent fuel pool.

c. Conclusion

Dismantlement activities continued in the reactor building, auxiliary building, spent fuel building and other exterior areas. The reactor vessel head, pressurizer, pressurizer relief tank and steam generators had been removed from the reactor building and shipped for disposal. Additionally, all major components in the auxiliary building had been removed and shipped for disposal. Characterization radiation surveys had been initiated in the auxiliary, turbine, and fuel handling buildings.

2.2 Reactor Vessel Internals Segmentation

a. Inspection Scope

The inspector reviewed the licensee's and contractors plans and procedures for the segmentation of the reactor vessel internals (RVI). The inspector observed initial segmentation activities.

b. Observations and Findings

Since 2001 the licensee had been evaluating and planning for the transport and disposal of the RVI. The licensee decided in January 2004, to award a contract for the segmentation and packaging of the RVI. The RVI segmentation process selected uses milling techniques as opposed to abrasive water jet cutting used at other recent RVI segmentation projects. The licensee expects that the larger particles generated by milling as opposed to abrasive water jet cutting will make debris collection and handling easier and thus not experience the clarity and personnel radiation exposures problems seen at other sites. The contract was awarded to a team led by Transnuclear Corporation. The two subcontractors were Duratek, responsible for the collection and packaging of the waste and MOTA Corporation responsible for the actual segmentation.

The contractors provided six major tools for the segmentation which are listed in Table 2.

Table 2
MOTA Corporation Tools
for the Rancho Seco Reactor Vessel Internals Segmentation

Tool Name	Description	Abbreviation
Small Bolt Shearing Tool	Hydraulic cylinders push against the core barrel until each of the bolts are sheared in place	BeaST-4
Large Bolt Shearing Tool	Hydraulic cylinders push against the core barrel until each of the bolts are sheared in place	BeaST-6
Bolt Milling Tool	Three axis optically guided milling head using roughing end mill bit.	BMT
Circumferential Hydraulically Operated Rotating Cutting Equipment	Remotely controlled, 70-100 RPM circular milling tool	C-HORSE
Internal Casing Cutters	Commercial tools designed for cutting tubing, casing or drill pipe	ICC
Reciprocating Machine Tool	Hydraulically powered guillotine-type saw	RMT

The MOTA Corporation had developed procedures for the use of these tools in the segmentation of various RVI. The concept was to be able to segregate segmented RVI components into the waste classifications. The licensee expected to generate one greater than Class C (GTCC) basket, 14 liners with Class B or C waste, 7 liners with Class A waste and 11 boxes with Class A waste for a total of 33 waste containers. The liners to be used were modified Duratek 8-120 spent fuel pool liners designed specifically for this RVI project.

The GTCC basket was planned to be packaged and eventually stored in the ISFSI. On July 29, 2004, the licensee had requested a license amendment from NRC for the storage of the GTCC waste in the ISFSI. On April 1, 2005, the NRC issued an environmental assessment and finding of no significant impact for this proposed action.

The licensee planned to store the Class B and C liners at their interim onsite storage building (IOSB). The Class A waste liners and waste boxes would be directly shipped to a low-level radioactive waste disposal site using Duratek's 8-120B transportation cask. For onsite handling of Class B and C liners, Duratek had also provided the use of 8-102A transfer cask, an 8-120 transfer bell and a liner transfer grapple.

During the April 11-14, 2005, site visit, the inspector observed preparations and actual segmentation activities during the May 2-5, 2005, site visit. During the inspection the only segmentation equipment in actual use was the Reciprocating Machine Tool (RMT). The contractor had encountered some difficulties in maintaining the continuous operation of this tool and was trouble shooting the software. The inspector interviewed licensee and contractor personnel and noted that they were aware of their safety responsibilities and actions to take in case of emergencies. The inspector observed the use of effective controls in place to limit the spread of contamination or the undetected removal of highly radioactive discrete particles from the water.

The inspector observed part of the practices and calibration of the Bolt Milling Tool (BMT) with the licensee providing an underwater video camera. The licensee and contractor were experiencing problems with water clarity and were working on resolving it during the inspection. The inspector observed that the licensee was using their Tri-nuclear and ALPS filter systems to assist with the water clarity issue. The contractor personnel interviewed stated that they wanted to make sure they had sufficient water clarity before submerging the BMT.

c. Conclusion

The licensee and contractors had made plans and preparations and had initiated the segmentation of the reactor vessel internals. The inspector concluded that the licensee and contractor staff were cognizant of their responsibilities and duties and aware of facility conditions and activities.

3 Occupational Radiation Exposure (83750)

This area was last inspected in June 7-10, 2004, see Inspection Report 050-00312/2004-02.

3.1 Audits and Surveillances

a. Inspection Scope

The inspectors reviewed audit Report 04-A-010, Radiological Safety and Control and ALARA Program, issued on November 17, 2004, and Surveillance Reports 04-S-043 and 05-S-005. These were the only audits and surveillances conducted in 2004 and 2005, as of April 14, 2005, in the area of occupational radiation exposure. The audit report was reviewed to determine implementation of the commitments made in the Section XVIII, Audits, of the Rancho Seco Quality Manual, as it relates to the occupational radiation safety. The inspector also reviewed the qualification records for the individual involved in the audit and surveillance.

The inspector reviewed Radiation Protection Occurrences (RPOs) prepared in 2004 and 2005 as of the time of the inspection.

b. Observations and Findings

Audit 04-A-010 was conducted September 16 through October 21, 2004, and the report was issued on November 17, 2004. The inspector confirmed that the audit was conducted per the commitments in the Rancho Seco Quality Manual. The individual that conducted the audit was independent of the function being audited. The audit included the use of an approved checklist. The auditor was qualified and authorized to perform the audit in the area audited. The audit did not identify any item that constituted a PDQ. The audit was conducted in a timely manner and was overall of very good quality. The next audit in this area is scheduled for October 2005.

Surveillance 04-S-043 was conducted on October 6-13, 2004, and included observations of activities related to instrument calibration, radiation protection "frisking" activities, establishment and maintaining contamination control points, signs and posting, documentation of "smears," radiological characterization, ALARA techniques, radioactive waste management, industrial safety and free release surveys of materials. The surveillance identified some minor posting problems that were addressed by the radiation protection organization. The surveillance report was issued on November 7, 2004.

Surveillance 05-S-005 was conducted on February 9, 2005, and addressed the implementation and performance of the Commitment Management Review Group. The surveillance report concluded that the ALARA committee review function is adequately addressed in plant procedures; that the CMRG routinely performs its ALARA committee review function and that management consistently and effectively maintains oversight of its ALARA program. The surveillance report was issued on February 10, 2005. The inspector noted that the auditor performing this function also functions as the CMRG secretary and thus is independent of the function being examined. However, the applicable licensee procedure, RSAP-1306, Quality Audits and Surveillance Reports, does not require that individual performing surveillances have no direct responsibility for activity being review as it does require for audits.

The individuals that performed these audits and surveillances were trained, qualified and currently certified to audit these functional areas as Lead Auditors.

Radiological Protection Occurrence Reports are used by the licensee to document the identification, immediate actions, investigation, and corrective actions of any radiological deficiency or violation noted by any plant worker. The RPO Report does not replace the PDQ process. In some cases, the RPO will be the basis for initiating a PDQ. Procedure RP.305.36, Radiological Protection Occurrence Report, was the procedure controlling this process.

The inspector reviewed the RPO log and noted that there had been five RPOs initiated in 2004 and none in 2005 as of May 3, 2005. The five RPOs had been processed in accordance with the requirements of procedure RP.305.36. For each of these RPOs, the licensee had investigated the occurrence and initiated corrective actions to prevent recurrence. One of the five RPOs in 2004 resulted in a Deviation from Quality Report.

c. Conclusions

The audits and surveillances of the occupational radiation exposure program were performance-based, and their overall quality was very good. The inspector concluded that the licensee had an effective program for identifying and correcting deficiencies or weaknesses related to the control of radiation or radioactive materials.

3.2 Changes

a. Inspection Scope

The inspector discussed and reviewed major changes since the last inspection in the areas of organization, personnel, facilities, equipment, programs and procedures with cognizant licensee staff to determine if these changes negatively affected occupational radiation protection.

b. Observations and Findings

The major change that had occurred since the last inspection was that the position of senior decommissioning chemistry/radiation technician had been established. Four individuals were promoted from decommissioning chemistry/radiation technician to senior decommissioning chemistry/radiation technician. These changes did not result in a change in the total number of technicians, only a change in their classification.

The number of radiation work permits (RWPs) were reduced from 11 in 2004 to 8 in 2005. The reduction in RWPs was the result of changes in plant status due to completed decommissioning work and consolidation of some of the RWPs. In 2005, only one RWP permitted access into the radiological control area (RCA) without wearing digital alarming dosimeters (DAD). RWP 05-101 permitted access to the RCA without a DAD as long as access to a radiation area or high radiation area was not required. Individuals would still need to wear optically stimulated luminescent dosimeters (OSL). The licensee used OSLs as the dosimeter of record.

The licensee deployed a new-to-the-site whole body counter. The vendor for the previous whole body counter had gone out-of-business and was no longer providing support for the unit. The new whole body counter was put in service on April 25, 2005.

The licensee had made some minor changes to the information in the unfettered access training manual based on comments made by the inspector during a previous inspection. These comments corrected the location of the technical support center, clarified emergency dose limits and description of high radiation areas controls. These changes would also be made in the general employee training as appropriate.

The inspector concluded that these changes would not have a negative effect on occupational radiation protection.

c. Conclusions

Changes made to the occupational radiation protection program did not decrease its effectiveness.

3.3 Planning and Preparation

a. Inspection Scope

The inspector reviewed the licensee's preparation for the RVI segmentation project.

b. Observations and Findings

The licensee had conducted a number of the usual preparations for a major project including preparation of a specific radiation work permit and conducting an ALARA evaluation. In addition, the licensee had contracted with the Electric Power Research Institute (EPRI) to conduct an review of the ALARA plan for the segmentation of the RVI. Members of this review team included individuals with experience in reactor vessel segmentation at other locations. Members of the review team were involved in similar projects at Connecticut Yankee, Maine Yankee, Yankee Rowe and San Onofre. The team reviewed the technical approach to be used and participated in a 1-day meeting at Rancho Seco. During this meeting, key licensee and contractor personnel discussed the elements of the ALARA plan and worker exposure management with members of the EPRI team.

The EPRI team provided the licensee with a report documenting their findings and suggestions. This report was supplemented with response to each comment by the licensee and contractor personnel and was discussed during a licensee management meeting on April 12, 2005, that the inspector observed. During this meeting a number of questions were raised by the licensee's management.

The licensee also prepared a report that listed selected identified risks and the actions to mitigate these risks. This report was also presented and discussed during the April 12, 2005, licensee management meeting.

The licensee had developed a new procedure, RP 309.1.12, Reactor Vessel Internals Packaging Plan, to provide radiological directions for packaging and transporting the reactor vessel internals to the IOSB for storage.

c. Conclusions

The inspector concluded that the licensee had made adequate plans and preparations for the segmentation, packaging and transportation of the reactor vessel internals, a job with potentially significant radiation exposures.

3.4 External and Internal Exposure Control and Other Radiation Protection Inspection Areas

a. Inspection Scope

The licensee's personnel radiation monitoring program and associated reports submitted were inspected for compliance with applicable requirements and commitments.

b. Observations and Findings

The licensee was continuing to use OSL dosimeters for evaluating beta/gamma external doses, and neutron dosimeters provided by a vendor which was accredited under the National Voluntary Laboratory Accreditation Program (NVLAP) for the type of dosimeters used. In addition, the licensee used electronic dosimeters for controlling the day-to-day personnel exposures. The licensee continued to use a vendor supplied computerized dose tracking system for reading the electronic dosimeters and automatically assigning the estimated dose to the individual. Electronic dosimeters were no longer required for entries into the radiologically controlled area that did not involve entries into radiation or high radiation areas.

During calendar year 2004 and as of April 13, 2005, no individual had been classified as a declared pregnant worker, and no planned special exposures had been conducted.

On February 17, 2005, the licensee submitted its annual report of individual monitoring for calender year 2004, to the NRC as an electronic data file. The inspector noted that the report was submitted on a timely basis as required by 10 CFR 20.2206(c). The inspector reviewed the dosimetry files of selected individuals to determine if the required information had been submitted in the report. This information was compared to a printout maintained by the licensee of the electronic data file. The electronic data for the individuals selected for review were complete and included all the information required. The inspectors concluded that the licensee was meeting the requirements of 10 CFR 20.2206(b) and the Rancho Seco Quality Manual, Appendix A, Section 1.5.2.1.

Records maintained by the licensee indicated that the total effective dose equivalent (TEDE) received by occupationally exposed individuals was below the regulatory limit of 5 rem. The highest reported TEDE was 0.920 Rem. Dose measurements for the lens of the eye dose, skin of the whole body dose, internal dose, and skin of the maximally exposed extremity dose were all below applicable limits.

Appendix A, Section 1.5.2.2, of the Rancho Seco Quality Manual requires that an annual exposure report for the previous year be submitted to the Commission within the first quarter of each calendar year in accordance with the guidance contained in Section 1.b.(3) of Regulatory Guide 1.16, Reporting of Operating Information. The licensee submitted its annual exposure report for year 2003 on February 16, 2004. The inspector determined that the report was timely and met the applicable requirements.

The inspector inquired from the licensee staff if any plant area had become unusable as a result of any operational occurrences. No plant areas had become unusable as a result of operational occurrences.

c. Conclusions

The licensee was maintaining an effective program to monitor occupational radiation exposures. Occupational exposures for calender year 2004 were below regulatory limits.

3.5 Maintaining Occupational Exposure ALARA

a. Inspection Scope

The inspector discussed the licensee's program for maintaining occupational radiation exposures ALARA with the supervising radiation engineering specialist and reviewed the licensee's applicable organization, procedures, goals and objectives, worker awareness and involvement.

b. Observations and Findings

Licensee procedure RSAP 1101, ALARA Program, described the licensee's ALARA policy and outlined the ALARA Program. The manager, plant closure and decommissioning administered the ALARA Policy and was responsible for its implementation. The radiation protection/chemistry superintendent managed the ALARA Program and its implementation. Day-to-day coordination of the ALARA program and acting as the focal point for all ALARA activities is the radiation protection ALARA coordinator. This position is performed by the supervising radiation engineering specialist who reports to the radiation protection/chemistry superintendent. The radiation protection ALARA coordinator was assisted by contractor ALARA technician and two dosimetry technicians

Procedure RSAP 0260, Commitment Management Review Group and Commitment Tracking System, identifies the Rancho Seco ALARA Committee. The ALARA Committee is tasked by RSAP 1101 to "provide overview functions to ensure that activities in the area of planning, construction, modification, operation, design, testing, maintenance, surveillance, and decommissioning of the Rancho Seco Nuclear Station are accomplished in a safe manner and such that radiation exposures to station personnel and the general public are maintained ALARA."

RSAP 1101 also tasks all plant personnel with responsibilities to comply with radiation work permit requirements, procedures and other radiological directions to maintain their exposures ALARA.

Procedure RP 0305.04, Radiation Work Permits, requires dose estimates for all RWPs and that ALARA job plan be developed for all RWPs that have a dose estimate of greater than 1.0 men-REM.

The inspector reviewed the list of RWPs for CY 2005 as of May 5, 2005, and noted that dose estimates had been prepared for each and that ALARA job plans had been developed for those RWPs with a dose estimate of greater than 1.0 men-REM.

The inspector reviewed minutes of the CMRG meeting of February 9, 2005, and two internal memorandums, RPC 05-005, Annual ALARA Report for 2004, and RPC 05-006, 2005 Radiation Exposure Estimates and ALARA Goal. The minutes indicated that the CMRG acting as the ALARA Committee had reviewed, discussed and accepted both occupational exposure reports as written. The 2004 dose estimate was 16.1 Man-REM and the ALARA goal 13.7 Man-REM. The actual exposures for 2004 were 15.4 Man-REM. The ALARA Committee concluded that the accurate nature of the occupational exposure estimates made ALARA goals extremely difficult to achieve.

The dose estimate for CY 2005 was 23.7 Man-REM with a goal of 20.1 Man-REM.

The inspector reviewed the employee training manual and noted that both the Site Access (CAT I) and Radiological Controlled Area Access (CAT II) Training included modules on ALARA. During tours of the radiologically controlled areas the inspector observed ALARA postings and individual were observed using good ALARA practices.

c. Conclusions

Although the ALARA goals had not been achieved for 2004, the total exposures were below the estimates. The inspector concluded that the licensee had established and maintained an ALARA program that included assigned responsibilities, procedures, training, planning, dose estimates, and dose goals.

4 Exit Meeting Summary

The inspector presented the inspection results to the acting plant manager and other members of licensee staff at the exit meeting on May 5, 2005. The licensee did not identify as proprietary any information provided to, or reviewed by, the inspector.

ATTACHMENT 1

PARTIAL LIST OF PERSONS CONTACTED

Sacramento Municipal Utility District

M. Bua, Radiation Protection/Chemistry Superintendent
M. Braun, Sr. Nuclear Engineer
J. Delezenski, Quality Assurance/Licensing/Administration/Training Superintendent
L. England, Coordinator, Project Controls Decommissioning
D. Gardner, Decommissioning Project Manager
R. Jones, Sr. Nuclear Engineer
L. Langley, Asset Protection Specialist
D. Koontz, ISFSI Supervisor
E. Nava, Asset Protection Supervisor
S. Redeker, Manager, Plant Closure and Decommissioning
E. Ronninger, Principal Decommissioning Radiological Engineer
J. Witte, Principal Mechanical Engineer

Contractors

R. Grubb, Vice President and Project Manager TransNuclear Corporation
J. Fennema, Project Manager MOTA
G. Lane, Project Manager Duratek

INSPECTION PROCEDURES USED

IP 40801	Self-assessment, Auditing, and Corrective Action
IP 71801	Decommissioning Performance and Status Review
IP 83750	Occupational Radiation Exposure

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

None

Discussed

None

LIST OF ACRONYMS

BMT	Bolt Milling Tool
CMRG	Commitment Management Review Group
CY	Calendar Year
DAD	Digital Alarming Dosimeters
DQ	Deviation from Quality
EPRI	Electric Power Research Institute
GTCC	Greater than Class C
IP	Inspection Procedure
IOSB	Interim Onsite Storage Building
ISFSI	Independent Spent Fuel Storage Installation
NVLAP	National Voluntary Laboratory Accreditation Program
OSL	Optically Stimulated Luminescent Dosimeter
PCP	Process Control Program
PDQ	Potential Deviation from Quality
QA	Quality Assurance
QALAT	Quality Assurance/licensing/administration/training
RMT	Reciprocating Machine Tool
RPO	Radiological Protection Occurrence
RSAP	Rancho Seco Administrative Procedure
RSQM	Rancho Seco Quality Manual
RVI	Reactor Vessel Internals
RWP	Radiation Work Permit
TEDE	Total Effective Dose Equivalent

ATTACHMENT 2

PARTIAL LIST OF DOCUMENTS REVIEWED

Audits and Surveillances

- Memorandum NQA 04-050, 2004 Updated Quality Audit Schedule, dated June 10, 2004.
- Memorandum NQA 04-101, 2005 Quality Audit Schedule, dated December 28, 2004.
- Rancho Seco Audit Report No. 04-A-006, Process Control Program (PCP) + Packaging & Transportation of Radioactive Waste, dated August 4, 2004.
- Rancho Seco Audit Report No. 04-A-010, Radiological Safety and Control ALARA Program, dated November 17, 2004.
- Surveillance Report 04-S-018, surveillance period April 20-29, 2004.
- Surveillance Report 04-S-020, surveillance period June 3, 2004.
- Surveillance Report 04-S-043, surveillance period October 6- 13, 2004.
- Surveillance Report 05-S-004, surveillance period January 6 and February 1-2, 2005.
- Surveillance Report 05-S-005, surveillance period February 9, 2005.

Data Sheets

- 2004 Rancho Seco Audit Log, as of April 14, 2005.
- 2005 Rancho Seco Audit Log, as of April 14, 2005.
- 2004 Surveillance (QC) Log, as of April 14, 2005.
- 2005 Surveillance (QC) Log, as of April 14, 2005.
- PDQ Log, as of April 14, 2005.
- Commitment Tracking System (CTS) List of Open DQs and PDQs as of May 12, 2005.
- CTS Reports for DQs and PDQs 04-001 through 05-004.

Meeting Agenda/Minutes

- CMRG Minutes for Meeting Held on August 2, 2004, NQA 04-067.
- CMRG Minutes for Meeting Held on August 25, 2004, NQA 04-072.
- CMRG Minutes for Meeting Held on February 9, 2005, NQA 05-007.

Procedures

- Rancho Seco Administrative Procedure RSAP-0260, Commitment Management Review Group and Commitment Tracking System, Revision 12, effective September 4, 2003.
- Rancho Seco Administrative Procedure RSAP 1101, ALARA Program, Revision 5, effective June 18, 2003.
- Radiation Control Manual Procedure RP.305.36, Radiological Protection Occurrence Report, Revision 3, effective March 21, 1990.
- Radwaste Control Manual Procedure RP 309.1.12, Reactor Vessel Internals Packaging Plan, Revision 0, effective March 30, 2005.
- Radiation Control Manual Procedure RP 0305.04, Radiation Work Permits, Revision 10, effective June 12, 2003.

Reports

- 10 CFR 20.2206 Annual Report of Individual Monitoring, NQA 05-009, February 23, 2005.
- 2005 Radiation Exposure Estimates and ALARA Goals, RPC 05-006, January 25, 2005.
- Annual ALARA Report for 2004, RPC 05-005, January 25, 2005.
- Regulatory Guide 1.16 Annual Exposure Report, NQA 05-008, February 16, 2005.
- Rancho Seco Reactor Vessel Internals Segmentation Review of ALARA Considerations, March 22, 2005.
- Selected Risk Mitigation Actions (Reactor Vessel Internals Segmentation Project) undated.