U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No. 50-312/93-02

License No. DPR-54

Licensee: Sacramento Municipal Utility District
P. O. Box 15830
Sacramento, California 95813

Facility Name: Rancho Seco Nuclear Generating Station (Rancho Seco)

Inspection at: Herald, California (Rancho Seco Site)

Inspection conducted: March 30, 1993 - April 1, 1993, and telephone conversations of April 12-20, 1993

Inspection by: _____ 12/23/93
Michael Cillis, Senior Radiation Specialist Date Signed

_____ 12/23/93
Ronald K. Brewer, Radiation Specialist Date Signed

Approved by: _____ 12/23/93
James H. Reese, Chief Date Signed
Facilities Radiological Protection Branch

Summary:

Areas Inspected:

Special announced inspection to examine the findings of a licensee investigation involving potential incomplete or inaccurate plant records. Inspection module TI 2515/115 was addressed.

Results:

One violation involving the incomplete or inaccurate radiation protection survey records and auxiliary operator logs is discussed in Section 2. A non-cited violation (NCV) involving a temporary Senior Rad-Chem Protection and Decommissioning Technician (SRP&DT) that was assigned on shift who did not meet ANSI N18.1-1971 qualifications is discussed in Section 3. Weaknesses with the licensee's evaluation of Information Notices is discussed in Section 2.I.5. No deviations were identified.

DETAILS

1. Persons Contacted

*J. Shetler, Deputy Assistant General Manager, Nuclear
*S. Redeker, Manager, Plant Closure and Decommissioning
*J. Delezenski, Nuclear Licensing Superintendent
*D. Brock, Manager, Nuclear Maintenance
*D. Gardiner, Acting Manager, Radiation Protection, Emergency Preparedness, Environmental Monitoring, and Chemistry
*W. Wilson, Radiation Protection, Chemistry, and Radwaste Superintendent
*S. Nicolls, Radiological Health Superintendent
R. Crandell, Rad-Chem Protection and Decommissioning Technician
G. Martin, Radiation Protection Supervisor
*D. Elliot, Quality Assurance Supervisor
R. Redding, Nuclear Instructor
*R. Mannheimer, Nuclear Licensing

*Denotes those individuals present at the exit interview conducted on April 1, 1993.

Additional discussions were held with other members of the licensee's staff.

2. Verification of Plant Records (TI 2515/115)

A review of personnel monitoring records was conducted at Rancho Seco during NRC inspection (50-312/92-05) October 1992. Personnel monitoring records showing the dose received by the licensee's Rad-Chem Protection and Decommissioning Technician (RP&DT) work force disclosed that the dose received by one RP&DT was substantially lower then the doses received by other RP&DT performing similar functions.

The observation was discussed with the licensee's Radiation Protection, Chemistry, and Emergency Planning Manager (RPM).

The RPM stated that the observation would be reported to his management and that an investigation would be conducted to determine the reason for the disparity in the dose received. The inspector asked the RPM to inform the Region V staff of the results of the investigation.

A. Licensee Investigation

The licensee initiated an immediate investigation at the conclusion of NRC inspection 50-312/92-05. The licensee conducted their investigation during the period of October 20, 1992, through February 19, 1993. On February 19, 1993, the licensee notified Region V of the results of their investigation and the corrective actions taken. The licensee reported that the results of their investigation would be made available onsite for NRC review. The licensee's investigation disclosed the following discrepancies:

(1) A review of selected radiation protection surveys reports submitted by three RP&DT indicated that the RP&DTs had completed certain surveys in a substantially shorter time, as indicated by Security computer records, than other RP&DTs.

(2) A review of selected operations logs for rounds that were conducted by Auxiliary Operators (AOs) indicated that some of the rounds logged as 'complete' did not include all of the areas of the plant required to be checked.

The licensee's investigation concluded that there was little operational safety significance to the findings, (e.g., there were no instances of any abnormal personnel exposures, loss of contamination control, or malfunctions of equipment).

B. Scope of Licensee's Investigation

The licensee used the security computer record system to conduct the investigation. Entry and egress times were used for selected individuals for the purpose of determining if the time spent in an area was long enough to accomplish the assigned tasks.

The licensee's staff reviewed routine (e.g., weekly, monthly, and quarterly) radiation survey records which had been submitted by the radiation protection staff for the month of February 1990 and the period of July 6, 1992, through October 23, 1992. The security computer entry and egress logs for the same period of time were then reviewed to determine if the time spent in the areas was sufficient to complete the surveys to be performed.

A similar study was performed of selected AO logs for rounds that were conducted during the period of May 22, 1992, through September 29, 1992 and for other groups, such as, security and maintenance. The licensee's investigation also included a review of applicable procedures for adequacy, interviews of the plant staff, tours, and inspections of work activities performed on each shift.

C. Licensee Findings

The licensee's investigation resulted in the following conclusions:

(1) Routine surveys submitted by RP&DT "A" for two shifts over the four month period of the investigation could not have been satisfactorily conducted in the amount of time the RP&DT spent in the areas that were surveyed.

(2) Routine surveys and instrument checks performed by RP&DT "B" for one shift over the four month period could not have been conducted in the time the RP&DT spent in the areas that were surveyed.

(3) All of the routine surveys submitted by RP&DT "C" for all

backshifts (7:00 pm to 7:00 am) for the four month period evaluated either could not have been performed or could not have been performed satisfactorily in the time spent in the areas that were surveyed. Surveys performed by RP&DT "C" on day shift were satisfactorily performed. The licensee's evaluation revealed that it was probable that RP&DT "C" had been performing unsatisfactory surveys and instrument checks on backshifts and weekends since the RP&DT had accepted a voluntary demotion from a supervisory position in October 1989.

Specifically, the investigation disclosed seventeen instances for which instrument checks, plus routine contamination and radiation surveys of various areas located on the -20 foot level of the auxiliary building were documented and turned in as being completed when security records showed time spent in the areas by the individual ranged from 41 seconds to 2 minutes and 33 seconds. In each instance the licensee concluded that the surveys could not have been performed in the amount of time that was spent in the areas that were surveyed.

(4) The licensee's investigation determined that all other surveys, such as special or job specific surveys were always performed in a satisfactorily manner by all RP&DTs.

(5) The licensee conducted a study to determine the average length of time it took five RP&DTs to perform the night shift -20 foot auxiliary building surveys/instrument checks for the period of time between July 26, 1992 and October 23, 1992. The technicians evaluated were "A", "B", and "C" listed above, and two additional RP&DTs were included and are identified as RP&DT "D" and "E." The data developed from the study is shown in Table 1, below:

TABLE 1

RP&DT	Average Time in Minutes/Seconds
RP&DT "A"	13 minutes and 56 seconds
RP&DT "B"	22 minutes and 20 seconds
RP&DT "C"	1 minute and 18 seconds
RP&DT "D"	37 minutes and 12 seconds
RP&DT "E"	37 minutes and 40 seconds

(6) A review of the AO rounds for each crew in December 1992 showed that the expected entries and durations were made except for the auxiliary building roof (one crew) and two

battery rooms (one crew).

It should be noted that the AOs do not normally collect data while conducting their rounds. The AOs compare plant conditions against the general guidance provided in procedure OAP 60, "Control of System Status and Tours," and annotates in a log that the round was performed. Specific parameter values are contained on in-plant instrument labels which operators check, but do not record. In-plant instruments that are found to be out of tolerance or outside the acceptance criteria window, are reported to the shift supervisor.

The licensee's investigation disclosed that the general guidance of OAP 60 had been applied differently from crew to crew and by individuals on a crew. OAP 60 did not provide detailed instructions on how to assign round responsibilities or how to log round completions. If a required zone was missed as noted on the security computer, it was not possible to verify with certainty who was responsible for that zone coverage because of the practices discussed in the next paragraph.

The AOs on shift are generally assigned to different tour areas; however, depending on shift manning and on the work load, AOs traded assignments. These changes were not documented. OAP 60 did not disallow this practice.

(7) Two days of rounds conducted by AOs prior to September 1992 disclosed: (1) Ten operators completed both days rounds; however, the battery room and auxiliary building roof top were not checked, (2) four operators completed one days rounds; however, the second days rounds missed all or nearly all of the twelve areas monitored by the security computer, and (3) two operators missed nearly all of the round on both days.

The licensee concluded that there had been no plant events or adverse conditions attributable to the missing rounds by the auxiliary operators.

D. Licensee Interviews

RP&DT "A", "B", "C", and members from the operations group were interviewed by licensee management. The interviews disclosed the following:

RP&DT "A" and "B" were silent when they were confronted with the results of the licensee's investigation. They neither admitted or denied the findings. RP&DT "C" admitted that the dates recorded on survey reports were not accurate. RP&DT "C" disclosed that he actually performed the surveys either before or after their assigned due dates. He stated that he reviewed the routine survey schedule to determine which surveys were due and then would perform

the surveys in advance or after the actual due date however, he always recorded the actual due dates for which the surveys were officially due.

The licensee's investigation included a separate review of records of the time period from August 24, 1992, through August 27, 1992, for the purpose of determining if RP&DT "C" contention was feasible. Security logs immediately preceding and immediately after the August 24-27, 1992, time period were reviewed. This review disclosed that the RP&DT had only spent 25 seconds on the -20 level of the auxiliary building the week before and 6 minutes and 11 seconds the week after. The licensee concluded that it would have been impossible for the RP&DT to conduct the surveys the week before or the week after, as the RP&DT contended.

E. Probable Cause

A review of Potential Deviation from Quality Form (PDQ) 92-0079 states the following: "Radiation protection surveys and detector checks submitted by three RP&DTs were not conducted on the date and times recorded on the documentation and in some cases the surveys and radiation detector checks submitted may not have actually been performed."

All licensee staff members stated that they were shocked by the findings and had not suspected what was disclosed by their investigation.

In a letter from the licensee dated April 7, 1993, to the Region V Regional Administrator, the Rancho Seco Deputy Assistant General Manager stated that it was concluded that management's reliance on trusting workers to execute their responsibilities, without adequate verification of that trust, was a major contributor to the problem.

F. Immediate Corrective Actions

The licensee had implemented the corrective actions listed below as a result of their investigation:

(1) Meetings were held with the Nuclear Organization staff to emphasize managements expectations and the importance of workers' functions.

(2) The operations superintendent instructed each shift supervisor that the AOs were to inspect all battery rooms and the auxiliary building roof during the performance of their rounds.

(3) Deliberate Misconduct Rule training was provided to the licensee's entire radiation protection staff on December 16, 1992.

(4) On March 31, 1993, the licensee implemented the use of their Radiation Protection Access Computer System to provide an official method for tracking the time individuals actually spend in radiologically controlled areas. The licensee directed all employees to log in and out of the radiation protection access computer upon entry and exit of radiologically controlled areas (as opposed to beginning and end of shift, as some employees had been doing).

(5) The licensee had initiated actions during the inspection to develop an "improved method" for screening INs for applicability by using the Commitment Management Review Group, composed of senior site management, to examine INs and other similar correspondence as part of a regular meeting agenda.

(6) Radiation protection supervision had implemented action to routinely review personnel exposures records, at least quarterly, to identify and assess anomalies.

(7) Falsification of Plant Records training was given to all staff members of the radiation protection organization on March 17, 1993.

(8) RP&DT "C" was permanently relieved of any assignment in support of the Rancho Seco radiation protection program activities. RP&DT "C" was also placed on leave without pay for 45 days and subsequently resigned. RP&Ts "A" and "B" were disciplined in accordance with Standard District Procedures. A contract Senior Radiation Protection and Decommissioning Technician (SRP&DT) was assigned on shift to replace RP&DT C.

(9) Radiation protection surveys of the controlled areas previously surveyed by RP&DTs "A", "B", and "C" were checked for any abnormalities. The radiation and contamination levels were found to be consistent with previously documented surveys.

G. Additional Corrective Actions Taken

At the time of this inspection, the licensee was still investigating further corrective actions to identify and discourage misconduct and incomplete and inaccurate documentation of plant records by its staff. Additional corrective actions taken by the licensee, included:

(1) Operations Administrative Procedure (OAP) 60, "Control Of System Status and Tours", was revised to improve guidance for rounds to assure more consistent rounds were performed.

(2) OAP 60 revision included changes so that AO logs will denote who performed the rounds.

(3) A "backshift" oversight program for managers and supervisors had been initiated.

(4) Licensee management re-emphasized the role of the first line supervisors and their involvement in the work activities had been provided to their staff.

(5) Supervision was tasked with developing additional ways for providing "verification" of the actions by their subordinates.

(6) Management briefed staff members on the importance of improving communications and the entire staff's role in the overall plan to achieve Hardened SAFSTOR and the regulatory requirements associated with this effort.

H. Conclusions

The licensee's investigation concluded the following:

(1) Submission of incomplete or inaccurate radiation protection surveys could result in failure to identify violations of 10 CFR Part 20 requirements and therefore constitutes a violation of the NRC deliberate misconduct rule.

(2) Logging that AO rounds were completed when a majority of the required areas had not been entered constituted a potential violation of the NRC misconduct rule.

I. NRC Evaluation

The NRC evaluation included the following: All of the data collected from the licensee's investigation were reviewed, RP&DTs were interviewed, licensee action taken upon receipt of Information Notices (INs) IN 92-30, "Falsification of Plant Records," IN 92-37, "Implementation of the Deliberate Misconduct Rule," were reviewed, members from the maintenance, plant engineering, quality assurance, I&C, operations, and security groups were interviewed, training and qualification records for selected individuals were reviewed, and a review of the corrective actions taken to prevent recurrence was conducted.

The inspector met with and interviewed most of the Radiation Protection, Chemistry and Emergency Preparedness, Environmental Monitoring staff members. In addition, selected interviews were held with staff members from other groups within the licensee s organization.

(1) Interview with RP&DT "C"

RP&DT "C" admitted he had either pre-dated or post dated

routine survey reports for the previous 3-4 years. In retrospect the technician stated that he realized that he did not meet expectations and the importance of his assigned duties as the shift RP&DT.

RP&DT "C" stated that he was not pressured into taking short cuts, in that the routine surveys only took approximately 2-3 hours of a 12 hour shift to accomplish. After the routine surveys were complete, RP&DTs had the remaining time to read correspondence, study, or perform other duties. On a rare occasion, RP&DTs were kept rather busy for 8-10 hours out of a 12 hour shift.

(2) Interviews with RP&DT "A"

RP&DT "A" also admitted that he/she had pre-dated and/or post dated surveys on the two occasions that were identified from the licensee's investigation. RP&DT "A" also understood the importance of their assigned duties. A review of surveys and security computer records for September and October 1991 (See Table 2) by the inspector revealed that similar actions had been taken by RP&DT "A" on at least three other occasions.

(3) Interviews with RP&DT "B"

RP&DT "B" also admitted to the same as RP&DT "A" and "C". RP&DT B also recognized the importance for documenting accurate information. RP&DT "B" informed the inspector that he/she could not recall whether similar actions had been taken on other occasions.

(4) Review of 1991 Records

An independent review of security and survey records was conducted by the inspectors for the period of September and October of 1991 disclosed the data provided in Table 2. (the table provides the date and length of time it took each RP&DT to conduct the surveys and instrument checks on the -20 foot level of the auxiliary building):

TABLE 2

RP&DT	Date	Length of Time Minutes/Seconds
A	9/3/91	4 Minutes
A	10/3/91	1 Minute
A	10/17/91	1 Minute
B	9/5/91	1 Minute and 31 Seconds

B	9/6/91	52 Seconds-Instr. Check Only
C	9/17/91	52 Seconds
C	9/23/91	2 Minutes
C	9/24/91	58 Seconds

The inspector concluded that the independent review appeared to substantiate the licensee's findings discussed above.

(5) Disposition of Information Notices

NRC Information Notice (IN) 92-30, "Falsification of Plant Records" and IN 92-37, "Implementation of the Deliberate Misconduct Rule" were received by the licensee on May 5, 1992 and June 29, 1992, respectively. The licensee took several actions upon receipt of the INs. First, the licensee distributed the INs to various managers for review with their staff. The distribution list did not include the radiation protection group. Second, the INs were posted at the site's security building for worker review. No method was established to determine if all site personnel reviewed the INs. Finally, the Deputy Assistant General Manager, Nuclear, conducted a quarterly stand-up safety meeting on July 9, 1992, which addressed the two INs, however no attendance records were maintained. The inspection disclosed that at least two of the involved RP&DTs were on the back shifts and the third RP&DT may not have been able to attend the safety meeting because he could not leave his work assignment.

The inspection revealed: (1) not all persons interviewed recalled having been informed about the INs, and (2) the licensee did not conduct an independent review of their activities to determine if the INs were applicable to Rancho Seco.

10 CFR 50.9, **Completeness and accuracy of information**, requires, in part, that information required by statute or by Commission regulations, orders, or license conditions to be maintained by the licensee shall be complete and accurate in all material respects.

The licensee determined that records required to be maintained by Commission regulations or license conditions were not complete and inaccurate in all material respects. Specifically, on at least 28 separate occasions, records made by three Rad-Chem Protection and Decommissioning Technicians and records made by auxiliary operators were identified as being incomplete or inaccurate. These errors were material in that these records evidenced that surveys, and radiation detector verification checks had been made when they had not.

The inspector brought the above observations to the attention of the licensee staff during the inspection and at the exit interview. The inspector informed the licensee of the concerns raised by their staff and of the above observations, stating that the actions taken by RP&DTs "A", "B", "C", and the AOs was an apparent violation of 10 CFR 50.9 (50-312/93-01).

3. Worker Qualifications

The inspector reviewed the training and qualification of the contract SRP&DT who was assigned to replace RP&DT C.

The inspector held discussions with the Acting RPM and reviewed the resume of the contract SRP&DT who is referenced in Section 2.F.8. The inspector also contacted references that were denoted on the resume. The discussions, review and contacts disclosed the following.

The RPM stated that he did not consider that the SRP&DT met the ANSI N18.1-1971 qualifications at an operating plant; but, felt strongly that the SRP&DT met the minimal qualifications of an individual needed to perform the duties of a Rancho Seco Senior Radiation Protection, and Decommissioning Technician. The RPM also informed the inspector that after reviewing the resume that was provided to the inspector he would have also concluded that the temporary SRP&DT did not meet ANSI N18.1 qualifications. The inspector was provided with three amended copies of the individual's resume between the period of April 1-22, 1993. The RPM stated that he personally knew the individual and characterized him as a good worker and as a trust-worthy individual.

Section D6.3 of the licensee's permanently defueled Technical Specifications (TS) states: "Each member of the facility staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions, except for the Radiation Protection Manager who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975."

ANSI N18.1-1971, "Selection and Training of Nuclear Power Plant Personnel," Section 4.5.2, "Technicians," states: "Technicians in responsible positions shall have a minimum of two years of working experience in their specialty. These personnel should have a minimum of one year of related technical training in addition to their experience." The criteria provided in NUREG/CR-5569, "Health Physics Positions Data Base," HPPOS-021, HPPOS-022, and HPPOS-023 were used to determine the individuals qualifications. The guidance provided in health physics position papers indicates that the term "in their specialty" means that a Rad-Chem and Decommissioning Technician shall have two years of experience, 4000 hours, of radiation protection experience as a radiation protection technician, 4000 hours of experience in chemistry as a chemistry technician, and another 4000 hours of experience as a decommissioning technician. It should also be noted that the NRC has

previously taken the position that: "Technicians filling responsible positions in a specialty are required to have two years experience in that specialty. For example, if a technician is filling a dual role (as a responsible HP-Chem Technician), then a total of four years (two in each) is required by ANSI N18.1-1971 Section 4.4."

A review of the contract SRP&DT's resume showed that he had worked as a Junior Health Physics Technician for a six month period. Other experiences included: one year at Rancho Seco as a Radiation Protection Radwaste Analyst, three years at Rancho Seco as a Project Manager for a rad-waste processing company, and approximately seven years for another rad-waste processing company that included assignments as a Rad-Waste Supervisor, Rad-Waste Technician, and as an Assistant Site Coordinator. The license had credited the contract SRP&DT with twenty-seven and one-half months of experience.

The reference checks made by the inspector disclosed that the individual had only worked as a Junior Health Physics Technician for three months rather than the six months indicated on the resume that was provided to the inspector. The reference checks made at the other facilities which the individual worked at also indicated the contract SRP&DT was a trust worthy person who was dedicated to his work. However, with the exception of the three month assignment as a Junior Health Physics Technician, the contract SRP&DT's resume did not disclose any other assignment as a Junior or Senior Radiation Protection Technician. A modified resume which was subsequently sent to Region V several days after the conclusion of the inspection disclosed the breakdown of the individuals experience as shown in Table 3, below:

TABLE 3

Duration	Task	Equivalent Experience as a SRP&DT
3 years	Decontamination	3 months
4 years	Combination of: * Respiratory cleaning and filter testing * Whole Body Counting * Laundry Monitor	 6 months 3 months 3 months
3 months	Junior Health Physics Tech.	3 months
3 years	PROJECT MANAGER: * Operate Rad-Waste Equipment * Solidify Liquid & Resin * Assist w/transportation * Chemical Analyses	6 months

1 Year	RP ANALYST: * Schedule and perform radwaste operations * Plan high contamination jobs such as cleaning tanks and sumps * Track radwaste curies and shipping	3 months
TOTAL		27 months

The inspector questioned the licensee and prior supervision about the individuals prior experience. The inspector determined that the contract SRP&DT had very little actual power plant experience as a health physics technician (three months) and therefore with his other experience could only be given credit for seventeen months of radiation protection and chemistry experience. The review disclosed that the individual's initial resume and the modified resumes showed that the SRP&DT did not have the two years of health physics experience. Therefore, the SRP&DT did not have the necessary number of years of equivalent experience required for a SRP&DT before being assigned on shift.

An interview was held with the on-the-job (OJT) training instructor for training the contract SRP&DT prior to assigning the individual to perform back shift duties.

The OJT instructor informed the inspector that he had a difficult time training the SRP&DT because he did not have a good understanding of radiation protection principals and theory of radiation detection instruments. The OJT instructor characterized the individual as a good worker but one that was lacking health physics experience. The instructor added that the contract SRP&DT initially had trouble choosing the proper instrument to use in the performance of the different types of routine surveys. However, the instructor stated that he felt the temporary SRP&DT could perform the necessary duties at an non-operating plant such as Rancho Seco, and could perform the "TASKS" that were signed off as being completed on the contract SRP&DT's OJT training records. The instructor also stated that the contract SRP&DT would call a more qualified RPT or his supervisor if necessary.

The above observation was discussed at the exit interview. The licensee informed the inspector that the contract SRP&DT was removed from the back shift coverage and an investigation would be conducted. The inspector was subsequently informed that the individual would not be assigned to perform any backshift duties until he met the qualification standards prescribed in ANSI N18.1-1971.

Assigning an individual on shift in a responsible position who does not meet or exceed the qualifications of ANSI N-18.1-1971 is violation of TS D6.3. However, the violation will not be cited because the criteria in

Section VII.B of the Enforcement Policy were satisfied (NCV 50-312/93-02-02).

4. Exit Interview

The inspector met with the individuals denoted in Section 1 at the conclusion of the inspection on April 1, 1993. The scope and findings of the inspection were summarized. The inspector informed the licensee of the apparent violation discussed in Section 2.H and Section 3. The licensee acknowledged the inspector's observations. The inspector stated that the actions taken by the involved individuals were unacceptable and that these actions had a certain level of safety significance associated with them even though they did not directly have any impact on the health and safety of the general public and the workers.

The Deputy Assistant General Manager, Nuclear, agreed that the practices were unacceptable and that the inspector's observations would be immediately evaluated.

SYNOPSIS

On July 8, 1993, the Field Office Director, Office of Investigations (OI), Region V, U.S. Nuclear Regulatory Commission (NRC), initiated an investigation to determine if two radiation protection technicians deliberately and intentionally made false statements to an NRC inspector. The false statements were alleged to have been made during an NRC inspection at the Rancho Seco Nuclear Generating Stations (RSNGS), Herald, California during March 30 - April 1, 1993. The alleged statements were the technicians' responses to questions pertaining to alleged falsification of records.

The OI investigation did not develop sufficient evidence to substantiate the allegation that the two technicians had intentionally and deliberately provided false or misleading information to the NRC inspector during separate interviews of the two technicians.