UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of SACRAMENTO MUNICIPAL UTILITY DISTRICT (Rancho Seco Nuclear Generating Station)	)	Docket No. 50-312 (SP)

NRC STAFF TESTIMONY OF PHILIP J. MORRILL
ON TRAINING OF UNLICENSED PLANT OPERATORS

(Board Question 34)

Q1. Please state your name and your position with the NRC.

A. My name is Philip J. Morrill and I am a reactor inspector at the Inspection and Enforcement Office, Region V.

Q2. Have you prepared a statement of your professional qualifications?

A. Yes.

Q3. Is that statement attached to this testimony?

A. Yes.

Q4. Please state the purpose of this testimony.

A. The purpose of this testimony is to respond to Board Question 34:

Board Question 34

> "Rancho Seco, being a Babcock and Wilcox designed reactor, has not adequately trained unlicensed operators to respond to orders necessary for action which would be required in the event of loss of feedwater transient, and therefore is unsafe and endangers the health and safety of Petitioners, constituents of Petitioners and the public."

Q5. Please state the nature of responsibilities you have had with respect to the Rancho Seco Generating Station.

A. As a reactor inspector, I have assisted in several inspections at Rancho Seco over the last three years. After the Three Mile Island accident, I was one of several inspectors who maintained surveillance at Rancho Seco. In mid-June 1979, in response to anonymous allegations related to training of unlicensed operations personnel, the Regional Office assigned me the task of following-up on the allegations. I am currently responsible for monitoring SMUD's response to Inspection and Enforcement Bulletin 79-14, "Seismic Analyses for As-built Safety-Related Piping Systems."

Q6. Please explain what functions are performed by unlicensed operations personnel at Rancho Seco.

A. The unlicensed operations personnel at Rancho Seco belong to the Operations Division, as do the licensed operators. Basically, the licensed operators operate the plant and supervise the unlicensed personnel who assist them.

Parts 50 and 55 to Title 10 of the Code of Federal Regulations require operators of nuclear power plants to be examined and licensed by the Nuclear Regulatory Commission (NRC) prior to manipulation of reactor controls which directly affect reactivity or power level. Unlicensed personnel are allowed to manipulate apparatus and mechanisms which may affect reactivity and power level of nuclear power plants only under the direct supervision of a licensed operator present at the controls and only for purposes of training such individuals to obtain necessary experience to become licensed.

The Technical Specifications for Rancho Seco (Paragraph 6.2.6) require unlicensed persons on shift to assist the licensed operators. These unlicensed personnel assist the licensed operators by starting and stopping motorized equipment, opening and shutting valves, conducting periodic maintenance or checking of equipment, and maintaining plant records. These various activities are directed by and supervised by the licensed operators who assist the unlicensed personnel, if necessary. Written procedures are located at equipment operating stations to instruct these personnel in their assigned tasks. The unlicensed operations personnel are placed in one of three categories according to their experience and competence. The least experienced personnel are "power plant helpers" who are initially assigned to receive on the job training from more experienced personnel and to do odd jobs around the plant. As these personnel become more knowledgeable and experienced, they are assigned greater responsibility for equipment operation by the senior licensed operator on that shift. After approximately a year,

a power plant helper may become an "Equipment Attendant" who is generally responsible for working with equipment in the non-safety related portions of the plant. After an additional time of about one year, the unlicensed person may become an "Auxiliary Operator" who usually operates equipment in safety related areas of the plant. These assignments are generally on the basis of seniority, performance (as evaluated by Rancho Seco management) and availability of that job position. Normally, there are between 3 and 7 unlicensed operations personnel on a shift depending on what plant evolutions are planned.

Q7. As part of your responsibilities, have you become familiar with the training given by SMUD to unlicensed operations personnel at Rancho Seco?

A. Yes, I have. Following the Three Mile Island accident, the NRC required licensees to conduct additional training for licensed operators which is described in IE Bulletin No. 79-05 (Series). Some training was also required by SMUD for the other Operations Division personnel at Rancho Seco. After all this training was completed, the NRC received an anonymous allegation (on June 18, 1979) that training of unlicensed Operations Division personnel was inadequate. As an inspector from Region V, I interviewed approximately 50% (15) of the people in this category to determine the validity of the allegations, their effect on plant safety, and whether any items of noncompliance with NRC regulations existed. I also examined the training program and records for newly hired Operations Division personnel and interviewed the Training

Coordinator and Operations Supervisor to verify that the licensee's training procedures and requirements for newly hired Operations Division personnel were being followed.

Q8. Please describe that training.

A. For licensed operators, the training was to demonstrate the instrument response to a Three Mile Island type accident and to rehearse the procedures which would be followed to deal with that type of event.

The "Auxiliary Operators" were trained to establish remote phone communications with the control room and to locally control certain auxiliary feedwater valves in the event the licensed operators needed this assistance.

At Rancho Seco newly hired Operations personnel are required to participate in a "New Employee Orientation Program." This program consists of five major portions described below.

(a) Security - Covering access control, badging and escort requirements.

(b) General Radiation and Emergency Response - Covering radiation dose limits, use of step-off pads, significance of radiation warning signs and barrier tapes, as well as employee's response to emergency signals.

(c) Safety and Fire Protection - Covering the "Rancho Seco Safety Manual," accident prevention, first aid facilities, protective clothing and equipment, mechanical and electrical barrier tapes, fire safety, and fire fighting actions and equipment.

(d) Basic Radiation Control - Covering radiation, personnel dosimetry, dose limits, measurement of radiation, and contamination levels, protective measures and emergency responses.

(e) Tour of the Facility - In company with the employee's supervision, covering at least his/her work area and location of emergency assembly points.

After this training is completed, the unlicensed operations person is assigned to a shift to receive on-the-job training from licensed operators and experienced unlicensed operations person[illegible]e Shift Supervisor and the person him/herself are responsible for this on-the-job training. The Shift Supervisor evaluates the individual's capabilities to operate plant equipment. At the same time, all personnel in the Operations Division (both licensed and unlicensed) are required to participate in a training program consisting of eight training modules described below.

(a) Plant Procedure Training - As a minimum, this includes work requests, administrative clearance procedures, abnormal tag procedure and reporting of reportable occurrences (within 6 months and every 12 months thereafter).

(b) Security Training - Deals with the security plan (within 3 months and every 24 months thereafter).

(c) Quality Assurance Training - Deals with the regulatory requirements of 10 CFR 50, Appendix B and SMUD's QA program and procedures (within 6 months and every 24 months thereafter).

(d) First Aid Training (within 12 months and every 36 months thereafter).

(e) Respiratory Protection Training - Use of masks and air supply devices (within 6 months and every 24 months thereafter).

(f) Fire Protection Training - Deals with the "Fire Protection Plan" and how to fight in-plant fires (within 6 months and per the fire protection action plan thereafter).

(g) Plant Change Review - To review changes made to the plant (every 24 months).

(h) Radiation Protection Training (every 12 months).

The Operations Supervisor can make additions or modifications as he deems appropriate.

When the unlicensed operations person is assigned to a shift, he or she is also given a set of self-instruction booklets dealing with basic engineering and physics concepts. The person's advancement to "Equipment Attendant," "Auxiliary Operator," or in-training-for-licensed-operator is based in part upon satisfactorily completing portions of this course.

As a consequence of my investigation/inspection of SMUD's training of unlicensed operations personnel, three concerns were identified and brought to the attention of SMUD management on June 22, 1979. These were:

(a) Some unlicensed Operations Division personnel desired more training on the operations of the condensate polishers: (Non-safety related equipment).

(b) One unlicensed Operations Division person had not received training relative to communication procedures and local control of auxiliary feedwater valves following a loss of feedwater.

(c) Uncontrolled copies of non-safety related procedures were being used at two auxiliary watch stations.

The licensee responded to the above comments and completed corrective action on these items by June 25, 1979. Specifically, training sessions and in-plant training for the condensate polishers were given to all unlicensed Operations

Division personnel. Training dealing with communications procedures and local control of auxiliary feedwater valves was given to personnel who were required to have that training, and uncontrolled copies of procedures were replaced with controlled copies.

Q9. Have you formed an opinion as to whether SMUD has adequately trained unlicensed operators to respond to orders necessary for actions which would be required in the event of a loss of feedwater transient?

A. Yes.

Q10. What is that opinion?

A. The unlicensed operations personnel are adequately trained to receive directions from the licensed operators through the plant communications system to carry out the necessary equipment manipulations in the event of a loss of feedwater transient.

PHILIP J. MORRILL
PROFESSIONAL QUALIFICATIONS
REGION V - WALNUT CREEK, CALIFORNIA
OFFICE OF INSPECTION AND ENFORCEMENT

My name is Philip J. Morrill. I am employed by the United States Nuclear Regulatory Commission as a reactor inspector in the Reactor Operations and Nuclear Support Branch, Office of Inspection and Enforcement, Region V, Walnut Creek, California. My primary responsibility in this position is the inspection of nuclear power plants during the operating phase to determine compliance with NRC rules and regulations.

I received a Bachelor of Science degree from the U.S. Naval Academy in 1966. I was employed by the U.S. Navy in the Naval Nuclear Power Submarine program from 1966 until 1971. During this time, I became qualified as Engineering Officer of the Watch for the AIW pressurized water nuclear propulsion plant prototype and was later qualified as Engineering Officer of the Watch on board the USS John Marshall (SSBN 611 (G)), a nuclear powered polaris missile submarine (1969 through 1971). I was also the ship's Main Propulsion Assistant (responsible for maintenance and administration of the nuclear reactor and power generation equipment) for one and one-half years of this time. In 1971, I joined the Bechtel Corporation in San Francisco, California and was assigned to the Susquehanna Steam Electric Station project mechanical group. From August 1971 through September 1972, I was responsible for the design and development of the radioactive waste disposal system. From September 1972 through January 1974, I was assigned duties of the project licensing engineer. From January 1974 through March 1976, I was the project nuclear group leader responsible for managing and supervising the efforts of 8 to 10 engineers.

In March 1976, I was hired by the U.S. Nuclear Regulatory Commission, Office of Inspection and Enforcement, Region V, in Walnut Creek, California, as a reactor inspector for the Reactor Construction and Engineering Support Branch. In this position, I participated in several construction inspections of the San Onofre Nuclear Generating Station and successfully completed a nondestructive examination school at Convair Division of General Dynamics. (San Diego, California), as well as a quality assurance and inspection course in Bethesda, Maryland. In January 1977, I transferred to the Reactor Operations and Nuclear Support Branch of Region V, Office of Inspection and Enforcement and was assigned as back-up inspector for the Trojan Nuclear Plant. In succeeding months I participated in inspections of the Rancho Seco, Humboldt, and Trojan nuclear plants in addition to completing five weeks of pressurized water reactor systems and operations training. For about one year I was then assigned as principal inspector for the Trojan Plant. In the fall of 1978, my assignment was again changed to follow-up the preoperational testing of the Diablo Canyon Nuclear plant. Although these have been my principal assignments, I have participated in a variety of research and power reactor inspections during the last two years.

I am presently a registered Professional Mechanical Engineer and Nuclear Engineer in the State of California.