

APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 30-17243/89-02 License: 42-01485-04

Docket: 30-17243

Licensee: Texas Nuclear Corporation
P.O. Box 9267
Austin, Texas 78766-9990

Inspection At: Texas Nuclear Corporation
9101 Research Boulevard
Austin, Texas 78766-9990

Inspector: Selvan Rajendran 11/30/89
Selvan Rajendran, Radiation Specialist Date
Nuclear Materials Inspection Section

Approved: Charles L. Cain 12/1/89
Charles L. Cain, Chief, Nuclear Materials Date
Inspection Section

Inspection Summary

Inspection Conducted September 12, 1989 (Report 30-17243/89-02)

Areas Inspected. Routine, unannounced radiation safety inspection of activities associated with the installation and servicing of gauges containing sealed sources of byproduct material. The inspection was conducted jointly with a member of the Texas Bureau of Radiation Control who reviewed manufacturing activities and waste activities licensed by the bureau. The inspection included a review of organization and management, training and qualification of personnel, personnel exposure control, and instrumentation.

The inspector was accompanied by John Austin of the NMSS staff.

Results: Within the areas inspected, no violations or deviations were identified.

DETAILS

1. Persons Contacted

*William G. Hendrick, Director, Environmental Services
*Doris Bryan, Manager, Licensing and Regulatory Affairs
Pam Zelewski, Training Coordinator

*Denotes those present at the exit interview.

2. Licensee's Action on Previous Violations

The last inspection, conducted on February 17, 1989, resulted in an enforcement conference, held on May 22, 1989, and subsequent escalated enforcement. The licensee submitted a response documenting corrective actions on August 29, 1989. The current inspection, conducted on September 12, 1989, was not intended to evaluate the effectiveness of these corrective actions due to the short duration which had elapsed since the licensee's response had been received. These actions will be reviewed during a future inspection. The previous violations from NRC Inspection Report 030-17243/89-01 are summarized as follows:

(Open) Violation (030-17243/8901-01): Failure to follow established procedures and rules governing the offsite handling and use of radioactive materials in special form or large quantity as required by License Condition 14.

(Open) Violation (030-17243/8901-02): Failure to provide personnel monitoring equipment to each individual who enters a high radiation area as required by 10 CFR 20.202(a)(3).

(Open) Violation (030-17243/8901-03): Failure to post a high radiation area with a sign bearing the radiation caution symbol and words CAUTION HIGH RADIATION AREA as required by 10 CFR 20.203(c)(1).

(Open) Violation (030-17243/8901-04): Failure to conduct a survey as required by 10 CFR 20.201(b) that was adequate to evaluate the extent of the radiation hazards incident to the presence of radioactive materials at Spang & Company.

(Open) Violation (030-17243/8901-05): Failure to instruct all individuals working in a restricted area in the health protection problems associated with exposure to radiation, in precautions or procedures to minimize exposure, and in the applicable provisions of the Commission's regulations and licenses. The extent of these instructions is to be commensurate with the potential health protection problems in the restricted area as required by 10 CFR 19.12.

(Open) Violation (030-17243/8901-06): Failure to perform an evaluation of the individuals who were working in a high radiation area without personnel monitoring devices to determine the radiation doses to the hands and to the body as required by 10 CFR 20.101.

(Open) Violation (030-17243/8901-07): Failure to report to NRC each exposure of an individual to radiation in excess of the applicable limits in 10 CFR 20.101 as required by 10 CFR 20.405(a)(1).

3. Organization and Management

The licensee is authorized to install, perform maintenance, repair, leak test, remove from service, relocate, and prepare for transportation, specified sealed sources and devices at temporary job sites located within NRC jurisdiction. The licensee's corporate facility is located in Austin, Texas, from which employees are dispatched to conduct licensed activities in various Agreement and Non-Agreement states. The licensee currently employs approximately 14 field service technicians and 4 health physics technicians.

The inspector reviewed the records of the activities performed by the licensee since the last inspection on February 6, 1989. The licensee has not performed any activities involving the sources, but has performed electronic type activities. The licensee had filled out the necessary forms required by their radiation safety program. All the required information was on the forms, including the individuals performing the activity, supervisors signatures, and the description of the job.

No violations were identified.

4. Training and Qualification of Personnel

The health physics staff stated that all employees are given a minimum radiation safety indoctrination as required by 10 CFR 19.12 at the start of employment and that there are two separate training programs: one for field-service personnel and one for technical service personnel. Both training programs provide a 40-hour radiation safety training, which includes basic knowledge of radiation, use of survey instruments, requirements for packaging radioactive materials for transportation, and emergency procedures. Field service personnel also receive 1-3 months of in-house training and training at 2-3 field sites with a senior technician. This training takes approximately 3 months to complete. Technical service personnel receive more extensive training on loading and removing sources from gauges. This training takes approximately 4-6 months. Technical service personnel are evaluated by the Radiation Safety Officer before working independently at remote job sites.

Field service personnel will typically work only on the electronics of the gauges, but they are capable of working with radioactive materials. Technical service personnel must be present while the field service personnel are working with sources. The technical service personnel, which include health physics technicians and engineers, will be the

individuals who will be installing or removing sealed or unsealed sources, responding to emergencies, implementing decontamination procedures, and calibrating survey instruments. The engineers oversee the health physics technicians, and they are usually the project managers.

According to licensee policy, engineers are required to have a 4-year degree from an accredited college or university in an emergency or health service field. Field service technicians and health physics technicians are required to have only a 2-year associate degree. But at the current time, all health physics technicians have a 4-year degree.

A review of selected personnel files showed that required elements of the training program, including written tests, had been satisfactorily completed.

No violations were identified.

5. Personnel Exposure Control

Film badge dosimetry records were reviewed for licensee work performed from March 1989 to July 1989. These were found to be complete. Exposure reports had been reviewed each reporting period by the health physics staff. The field service technicians' thermoluminescent dosimeters (TLDs) have been exchanged yearly. Other badges are exchanged monthly. The health physics technicians also wear dosimeters in the field. Approximately 90 people have been issued dosimetry, and 15-20 people actually work with radioactive materials.

The highest quarterly whole body reading for the health physics personnel was 550 millirem. The typical monthly reading was 100 millirem. A review of records demonstrated licensee compliance with 10 CFR 20.101(a).

No violations were identified.

6. Instrumentation

The licensee possessed approximately 50 survey instruments. Some of the instruments were TN Models 2651, 2652, 2671, 9120, 9121, and 9122. They also possess Eberline Models E-520 and ESP-1. There has been no calibration frequency specified. Instruments have been calibrated after repairs or when check source readings differ by more than 20 percent of the expected values. Instruments have been calibrated by the licensee using either a Cs-137 or Co-60 source. The most commonly used field survey instrument has been TN Model 2652, an end window GM meter. It has a range of 0.1-100 mR/hr.

A license amendment is in progress to specify a calibration frequency for instruments. The instruments that are carried to field sites are checked for calibration only after getting to the site by using the check sources that are carried with the instruments. This method of checking the instruments at the site, could cause some problems, if the check reveals

that the instrument is out of calibration and the technician does not possess another instrument. In this case the technician could be without a properly calibrated instrument.

The need for instruments is determined by the health physics staff. When there is a service order, it is automatically routed to the health physics staff, and they determine the nature of work and assigned to the proper supervisors, either the field service or the technical service supervisor. Paper work generated with the work order signifies what type of instruments are needed.

No violations were identified.

7. Exit Meeting

The inspection findings were discussed with the individuals indicated in Section 1.