

ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

Inspection Report: 50-445/95-20  
50-446/95-20

Licenses: NPF-87  
NPF-89

Licensee: TU Electric  
Energy Plaza  
1601 Bryan Street, 12th Floor  
Dallas, Texas

Facility Name: Comanche Peak Steam Electric Station, Units 1 and 2

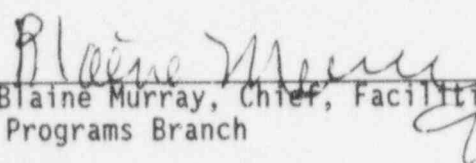
Inspection At: Glen Rose, Texas

Inspection Conducted: September 18-22, 1995

Inspectors: J. B. Nicholas, Ph.D., Senior Radiation Specialist  
Facilities Inspection Programs Branch

M. P. Shannon, Radiation Specialist  
Facilities Inspection Programs Branch

Approved:

  
Blaine Murray, Chief, Facilities Inspection  
Programs Branch

  
Date

Inspection Summary

Areas Inspected (Units 1 and 2): Routine, announced inspection of the radiological environmental monitoring program including: organization and management controls, training and qualifications, quality assurance program, radiological environmental monitoring program, meteorological monitoring program, and reports of radiological environmental monitoring operations.

Results (Units 1 and 2):

- The organizational structure and staffing for the radiological environmental monitoring program met Technical Specification requirements. Management controls of the radiological environmental monitoring program were properly implemented (Section 1.1).
- Well qualified and trained personnel were assigned to conduct the radiological environmental monitoring program (Section 2.1).

- Comprehensive quality assurance audits of the radiological environmental monitoring program were performed and provided excellent program evaluation and management oversight of the licensee's performance in implementing the radiological environmental monitoring program (Section 3.1).
- The radiological environmental monitoring program was implemented in accordance with the Offsite Dose Calculation Manual. The licensee performed well in sample preparation and shipment (Section 4.1).
- Meteorological monitoring instrumentation was operable and properly calibrated. A meteorological monitoring program was implemented that achieved a greater than 90 percent data recovery in accordance with guidance contained in applicable NRC Regulatory Guides and industry standards. The licensee completed installation of a lighting deterrent system on the meteorological tower to increase the meteorological tower instrumentation reliability (Section 5.1).
- Annual Radiological Environmental Operating Reports were submitted in a timely manner and contained all required information. Proper annual land use censuses were performed as required (Section 6.1).

Summary of Inspection Findings:

- Inspection Followup Item 445/9520-01; 446/9520-01 was opened (Section 4.1).
- Inspection Followup Item 445/9520-02; 446/9520-02 was opened (Section 4.1).

Attachment:

- Attachment - Persons Contacted and Exit Meeting

## DETAILS

### **1 ORGANIZATION AND MANAGEMENT CONTROLS (84750)**

The inspectors reviewed the organization and staffing of the Radiation Protection Department to determine agreement with commitments in the Updated Safety Analysis Report and compliance with the requirements in Technical Specification 6.2.

#### **1.1 Discussion**

The inspectors reviewed the organizational structure and staffing of the Radiation Protection Department, and specifically, the radioactive materials control group, which was responsible for the management and implementation of the radiological environmental monitoring program. The inspectors noted that the supervision and performance of the radiological environmental monitoring program, including the meteorological monitoring program, had been transferred from the Site Environmental Engineering Department to the Radiation Protection Department in July 1994. A staff of two radiation protection technicians along with Radiation Protection Department supervision was currently conducting the radiological environmental monitoring program. Support from other station departments such as the Instrument and Control Department and the Engineering Department was available for instrument calibrations and technical support. The inspectors determined that the present organizational structure and staffing of the Radiation Protection Department were capable of conducting the radiological environmental monitoring program as outlined in the Updated Safety Analysis Report and the Offsite Dose Calculation Manual. The recent responsibility and personnel changes for conducting the radiological environmental monitoring program had no negative effect on the performance of the radiological environmental monitoring program.

Procedures for the implementation of the radiological environmental monitoring program were reviewed. Specifically, Radiation Protection Instruction (RPI-710), "Radiological Environmental Monitoring Program," Revision 5, dated March 1, 1995, and the Environmental Manual procedures were reviewed for the assignment of responsibilities for the management and implementation of the radiological environmental monitoring program. The licensee stated that the Environmental Manual procedures are to be converted from Site Environmental Engineering Department procedures to Radiation Protection Department procedures as soon as possible. These procedures outlined the responsibilities for collection, documentation, and shipment of environmental media samples and thermoluminescent dosimeters collected around the Comanche Peak Station site. The inspectors determined that the duties and responsibilities specified in the station's procedures regarding the implementation of the radiological environmental monitoring program were performed as required. Through discussions with members of the radioactive materials control group, who were trained and qualified to perform the radiological environmental sampling responsibilities, the inspectors determined that they were familiar with the requirements of the radiological

environmental monitoring program. The inspectors verified that the assignment of management control responsibilities for the implementation of the radiological environmental monitoring program was as identified in the Offsite Dose Calculation Manual.

## 1.2 Conclusions

The licensee's organizational structure for the radiological environmental monitoring program met the Technical Specification requirements. The Radiation Protection Department staff was capable of performing the duties required by the radiological environmental monitoring program. The management controls of the radiological environmental monitoring program were implemented in accordance with the Offsite Dose Calculation Manual.

## 2 TRAINING AND QUALIFICATIONS (84750)

The training and qualification programs for the licensee's staff responsible for implementing the radiological environmental monitoring program were reviewed to determine agreement with commitments in the Updated Safety Analysis Report and compliance with the requirements in Technical Specifications 5.3 and 6.4.

### 2.1 Discussion

The inspectors reviewed several documents related to the training and qualifications of the two radiation protection technicians assigned to the radiological environmental monitoring program. The inspectors reviewed the Radiation Protection Department training matrix, selected training records, and qualification cards of the two radiation protection technicians assigned to conduct the radiological environmental monitoring program. The inspectors determined that the education and experience, training, and working knowledge of the two radiation protection technicians, who were assigned to the radiological environmental monitoring program and had been radiation protection technicians for a number of years, met the training and qualification requirements with respect to the radiological environmental monitoring program.

### 2.2 Conclusions

Well qualified and trained personnel were assigned to conduct the radiological environmental monitoring program.

## 3 QUALITY ASSURANCE PROGRAM AND QUALITY CONTROL (84750)

The quality assurance audit program regarding the radiological environmental monitoring program activities was reviewed to determine agreement with commitments in the Updated Safety Analysis Report and compliance with the requirements in Technical Specification 6.5.2.8.



### 3.1 Discussion

The inspectors reviewed the quality assurance audit schedules for 1994 and 1995. The audit schedules indicated an annual audit schedule for the radiological environmental monitoring program which was in compliance with Technical Specification requirements. The inspectors reviewed the quality assurance audit plans, audit checklists, and the qualifications of the quality assurance auditors and technical specialists who performed the audits of the radiological environmental monitoring program. Audit reports of quality assurance activities related to the radiological environmental monitoring program performed during 1994 (Audit QAA-94-118) and 1995 (Audit NOE-EVAL-95-000169) were reviewed for scope, thoroughness of program evaluation, and timely followup of identified deficiencies. The audits were performed at the required frequency specified in the Technical Specifications and were conducted in accordance with quality assurance procedures by qualified auditors. The inspectors noted that the quality assurance audits were designed to assess the adequacy and effectiveness of the non-radiological and radiological environmental monitoring programs. The audits included a review of the program implementation and compliance with regulations, procedures, and industry standards. The inspectors found the quality assurance audits to be comprehensive and of excellent quality so as to effectively evaluate the licensee's performance in implementing the radiological environmental monitoring program.

The licensee used a contract environmental laboratory to perform radiological analyses on their environmental media samples. The contract laboratory participated in the Environmental Protection Agency Interlaboratory Comparison Program. The contract environmental laboratory's performance in the interlaboratory quality control program was excellent. The quality control analytical results were reported in the Annual Radiological Environmental Monitoring Operating Reports as required by the Technical Specifications and the Offsite Dose Calculation Manual.

### 3.2 Conclusions

Annual quality assurance audits of the radiological environmental monitoring program were performed as required. These audits were technically comprehensive and provided excellent program evaluation and management oversight of the licensee's performance in implementing the radiological environmental monitoring program in accordance with the Offsite Dose Calculation Manual requirements.

## 4 **RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM (84750)**

The radiological environmental monitoring program was reviewed to determine compliance with the requirements in Technical Specification 6.8.3.f and the Offsite Dose Calculation Manual, Section 3/4.12.

#### 4.1 Discussion

Personnel from the radiation protection department were responsible for the collection, shipment, and documentation of radiological environmental samples. Analyses of environmental samples were conducted by a contract laboratory. The inspectors reviewed Environmental Manual procedures for the administration and implementation of the radiological environmental monitoring program. These procedures provided for the sampling, preparation, and shipping of environmental media samples and for the evaluating and reporting of the radiological analytical results. The procedures were written with sufficient detail to ensure compliance with the Offsite Dose Calculation Manual requirements.

The inspectors accompanied and observed the two radiation protection technicians assigned to the radiological environmental monitoring program collect and prepare air particulate and charcoal cartridge samples, broadleaf vegetation samples, surface water samples, and a milk sample for shipment and analyses. All aspects of the sampling process and sample preparation for shipment and analyses were performed in accordance with approved procedures. Airborne sampling sites were inspected, and the air sampling equipment was operational and currently calibrated. The radiation protection personnel were supported by other plant departments for the maintenance and calibration of the air samplers. Sixteen new air samplers were purchased and calibrated in May 1994 to supply eight air sampling locations. The inspectors reviewed the calibration program for the air flow indicators used in the air samplers and determined that the air flow indicators were calibrated and certified annually with a standard flow meter whose accuracy was traceable to the National Institute of Standards and Technology. The inspectors verified that the licensee had a sufficient supply of environmental sampling equipment including additional air samplers.

The inspectors visited and inspected selected environmental media sampling locations of the following types: airborne, surface water, broadleaf vegetation, milk, and thermoluminescent dosimeters. Selected sample collection logs, sample shipment and receipt forms, and a number of sample analyses reports were reviewed for the time period January 1994 through August 1995. It was determined that the collection, processing, and analyses of radiological environmental media samples were conducted in accordance with the Offsite Dose Calculation Manual requirements.

During the inspection, the inspectors verified that the sampling locations were as described in Table 3.12-1 of the Offsite Dose Calculation Manual. The inspectors inspected and questioned the location of the control air sampler. According to Table 3.12-1, the control air sampler is to be located 15 to 30 kilometers in the least prevalent wind direction from the plant. The inspectors determined that the control air sampler was located at the appropriate distance from the plant. However, after studying the wind rose and D/Q deposition tables derived from the historical annual average environmental conditions associated with the plant, the inspectors determined that the least prevalent wind direction from the plant was in the east sector

rather than the southwest sector where the control air sampler was located during the implementation of the station's preoperational and operational radiological environmental monitoring programs. It was determined that the southwest sector was the fifth least prevalent wind direction from the plant. The inspectors noted that footnote number 3 to Table 3.12-1 provides a definition for the purpose of the control air sampler and states that, "The purpose of this sample is to obtain background information. If it is not practical to establish control locations in accordance with the distance and wind direction criteria, other sites that provide valid background data may be substituted." The inspectors discussed this observation with the licensee during the inspection and asked the licensee to provide documentation and rationale for locating the control air sampler in the southwest sector. The licensee was unable to provide such documentation. The inspectors discussed this observation with the licensee at the exit meeting, and the licensee agreed to evaluate the control air sampler location and provide written documentation to support the choice of location. This item is considered an Inspection Followup Item (50-445/9520-01; 50-446/9520-01).

The inspectors also noted that Attachment 1 to Environmental Manual Procedure ENV-200, "Radiological Environmental Sampling/Analysis Program," Revision 3, dated March 3, 1995, stated that broadleaf vegetation was to be collected monthly. This collection frequency was different from the required collection frequency stated in Table 3.12-1 of the Offsite Dose Calculation Manual which stated, "Monthly, when available." The inspectors noted, while reviewing sample collection logs, that broadleaf vegetation was collected only during the growing season (when available) and not every month. The inspectors discussed this observation with the licensee during the inspection. The licensee agreed to change Attachment 1 to Environmental Manual Procedure ENV-200 to indicate the same sampling frequency for broadleaf vegetation as that indicated in Table 3.12-1 of the Offsite Dose Calculation Manual which was based on regulatory guidance. The licensee stated that the procedure change will be made when the environmental procedures are changed to Radiation Protection Department procedures in the near future.

Table 3.12-1 of the Offsite Dose Calculation Manual indicated a more frequent sampling of air particulate than weekly, if required, due to dust loading of the air particulate filter during the weekly sampling. During the review of the air particulate sample collection logs over the past 2 years, the inspectors noted numerous occasions when the "as found" (off) sample flow rate recorded for an air sampler was less than the "start" (on) sample flow rate for that air sampler. This indicated that some physical reason caused the reduced air flow through the air particulate filter (possibly dust loading). The inspectors discussed this observation with the licensee during the inspection and determined that there was no criteria established for the evaluation of the cause of the reduced air sample flow when noted and recorded. There was also no criteria established to determine if the reduced air flow was caused by dust loading of the air particulate filter and whether an adequate sample was collected. If dust loading caused the reduced flow rate through the air particulate filter, a more frequent collection of the air particulate sample might be required in accordance with the Offsite Dose



Calculation Manual. Based on the discussions held with the licensee, the licensee agreed to evaluate the inspectors' observation and concern of possible dust loading of the air particulate filters causing an insufficient sample to be collected as required by the Offsite Dose Calculation Manual. Based on the licensee's evaluation, the licensee agreed to take appropriate corrective action and establish criteria to evaluate an air particulate filter dust loading problem. This item is considered an Inspection Followup Item (50-445/9520-02; 50-446/9520-02).

#### 4.2 Conclusions

The licensee was implementing the radiological environmental monitoring program in accordance with the Technical Specifications and the Offsite Dose Calculation Manual. The licensee had sufficient necessary equipment to perform sample collection, preparation, and shipment. The licensee used a contract environmental laboratory to perform sample radiological analyses. Environmental media sampling and environmental thermoluminescent dosimeter stations were at locations as described in the Offsite Dose Calculation Manual.

### 5 METEOROLOGICAL MONITORING PROGRAM (84750)

The inspectors reviewed the meteorological monitoring program to determine compliance with the requirements in the Offsite Dose Calculation Manual, Section 3/4.3.3.6 and the recommendations of NRC Regulatory Guides 1.23 and 1.97, and ANSI/ANS 2.5-1984.

#### 5.1 Discussion

The inspectors inspected the primary and back-up meteorological towers and their associated monitoring instrumentation. Offsite Dose Calculation Manual required instrumentation was found operational and calibrated. The required daily surveillance channel checks of the meteorological monitoring instrumentation were found to be satisfactorily completed.

The inspectors reviewed meteorological instrumentation calibration procedures and associated records. The meteorological monitoring instrumentation calibration records for the calibrations performed between March 1994 and April 1995 were reviewed. The inspectors verified that the meteorological tower instrumentation had been calibrated semiannually as per Offsite Dose Calculation Manual requirements by the licensee's Instrument and Controls technicians. The calibrations were conducted in accordance with approved calibration procedures. Daily surveillance channel checks were performed by the control room operators during the mid and day shifts and recorded on the appropriate operations control room shift surveillance log. All records reviewed indicated that the meteorological monitoring instruments were maintained, tested, and calibrated in compliance with Offsite Dose Calculation Manual requirements.



The inspectors reviewed the annual meteorological data recovery for 1992 through 1994. The licensee obtained a 94.38 percent data recovery for 1992, a 95.75 percent data recovery for 1993, and a 97.07 percent data recovery for 1994. Even though the licensee had experienced considerable problems keeping the meteorological tower instrumentation operational due to lightning strikes and instrumentation operability, the meteorological data recovery data indicated a steady increase. The licensee recently completed installing a lighting deterrent system on the meteorological tower in order to increase the reliability of the meteorological tower instrumentation.

## 5.2 Conclusions

The meteorological monitoring instrumentation channels were demonstrated operable and calibrated at the proper frequencies as required by the Offsite Dose Calculation Manual. The performance of the meteorological monitoring program satisfied the requirements of the Offsite Dose Calculation Manual and agreed with the guidance contained in applicable NRC Regulatory Guides and industry standards. The licensee completed installation of a lighting deterrent system on the meteorological tower to increase the meteorological tower instrumentation reliability.

## 6 REPORTS OF RADIOLOGICAL ENVIRONMENTAL MONITORING OPERATIONS (84750)

Annual Radiological Environmental Operating Reports were reviewed to determine compliance with the reporting requirements in the Offsite Dose Calculation Manual, Section 6.9.1.3, and the Land Use Census required by Offsite Dose Calculation Manual, Section 3/4.12.2.

### 6.1 Discussion

The inspectors reviewed the Annual Radiological Environmental Operating Reports for 1993 and 1994. The reports were submitted in a timely manner and contained the required information. Any discrepancies or missed samples were reported. The inspectors determined that the Radiological Environmental Monitoring Program sampling, analyses, and reporting requirements were met. The inspectors determined that the annual land use censuses were conducted as required by the Offsite Dose Calculation Manual and that the results were included in the respective Annual Radiological Environmental Operating Reports.

### 6.2 Conclusions

Annual Radiological Environmental Monitoring Reports were submitted in a timely manner, contained the required information, and indicated that Offsite Dose Calculation Manual sampling and analyses requirements were met. Annual land use censuses were performed as required.

## ATTACHMENT

### 1 PERSONS CONTACTED

#### 1.1 Licensee Personnel

- \*N. C. Paleologos, Vice President, Nuclear Operations
- \*C. L. Terry, Group Vice President, Nuclear Production
- \*J. M. Ayres, Nuclear Overview, Plant Support Manager
- \*D. M. Bozeman, Manager, Chemistry
  - H. J. Cheatheam, System Engineering
  - J. R. Curtis, Manager, Radiation Protection
- \*E. T. Floyd, Radiation Protection Technician
- \*N. S. Harris, Senior Regulatory Compliance Specialist
- \*T. A. Hope, Manager, Regulatory Compliance
- \*D. C. Kay, Radiation Protection Materials Control Supervisor
  - J. S. Mitchell, Instrument and Control Technician
  - J. Nandi, Environmental Supervisor
- \*R. L. Ramsour, Radiation Protection Technician
- \*G. H. Ruzala, Chemist
- \*D. L. Stearns, Nuclear Overview, Senior Nuclear Specialist
  - B. G. Turner, Environmental Coordinator
- \*C. H. Welch, Nuclear Overview, Senior Nuclear Specialist
- J. B. White, Senior Engineer, Electrical Engineering

#### 1.2 NRC Personnel

- A. T. Gody, Senior Resident Inspector
- \*H. A. Freeman, Resident Inspector
- V. L. Ordaz, Resident Inspector

\*Indicates those present at the exit meeting on September 22, 1995.

In addition to the personnel listed, the inspectors met and held discussions with other personnel of the licensee's staff during the inspection.

### 2 EXIT MEETING

An exit meeting was conducted on September 22, 1995. During this meeting, the inspectors reviewed the scope and findings of the report. The licensee did not express a position on the inspection findings documented in this report. The licensee did not identify as proprietary, any information provided to, or reviewed by the inspectors.