

APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

NRC Inspection Report: 50-445/90-17  
50-446/90-17

Operating License: NPF-87  
Construction Permit: CPPR-127

Dockets: 50-445  
50-446

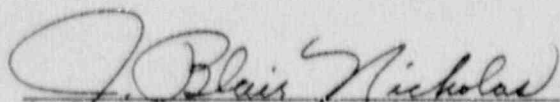
Licensee: TU Electric  
Skyway Tower  
400 North Olive Street, L.B. 81  
Dallas, Texas 75201

Facility Name: Comanche Peak Steam Electric Station (CPSES)

Inspection At: CPSES site, Glen Rose, Texas

Inspection Conducted: June 25-29, 1990

Inspector:

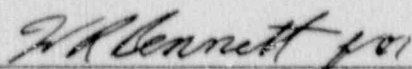
  
\_\_\_\_\_  
J. B. Nicholas, Senior Radiation Specialist  
Facilities Radiological Protection Section

8/10/90  
Date

Accompanied  
By:

T. Bohn, EG&G Engineer

Approved:

  
\_\_\_\_\_  
B. Murray, Chief, Facilities Radiological  
Protection Section

8/14/90  
Date

Inspection Summary

Inspection Conducted June 25-29, 1990 (Report 50-445/90-17)

Areas Inspected: Routine, unannounced inspection of the licensee's liquid, gaseous, and solid radioactive waste systems, liquid and gaseous radioactive waste effluent programs, solid radioactive waste management program, and water chemistry and radiochemistry programs.

Results: The inspector determined that the licensee was implementing the radioactive waste effluent program (RWEP) in accordance with the Radiological Effluent Technical Specifications (RETS) and Offsite Dose Calculation Manual (ODCM). The quantities of radionuclides released in the radioactive waste effluents were within the limits specified in the ODCM. Offsite doses

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had been calculated using methods described and specified in the ODCM and were within Technical Specification (TS) and ODCM limits. Initial confirmatory dose calculations were performed during the inspection using the new NRC PC DOSE computer code for offsite dose calculations. Comparisons between the licensee's dose calculations and NRC dose calculations were identical for all organ and total body dose results compared. These results confirmed that the licensee's dose calculations were accurate and performed as defined in the ODCM. No licensee event reports involving radioactive effluent releases had been written since the initial criticality of Unit 1.

The licensee had initiated a satisfactory program to sample and analyze plant solid radioactive waste streams for the characterization and classification of solid radioactive waste prior to shipment for low-level radioactive waste burial. The sampling and analysis program appeared to satisfy the requirements of 10 CFR Parts 61.55 and 61.56

The licensee had developed and implemented a water chemistry program and radiochemistry program based on regulatory and industry guidelines. The water chemistry and radiochemistry programs were being conducted in accordance with TS requirements.

Within the areas inspected, no violations or deviations were identified. One previously identified open item was closed.

Inspection Conducted June 25-29, 1990 (Report 50-446/90-17)

Areas Inspected: No inspection of Unit 2 was conducted.

Results: Not applicable.

DETAILS

1. Persons Contacted

TU Electric

- \*W. G. Westhoff, Quality Operations Manager
- \*D. M. Bozeman, Chemistry and Environmental Manager
- C. M. Carella, Staff Chemist
- \*J. M. Edwards, Radwaste Operations Supervisor
- \*J. E. Emory, Senior Specialist, Quality Assurance
- R. E. Fishencord, Radiation Protection Supervisor
- \*T. A. Hope, Site Licensing Engineer
- \*D. C. Kay, Senior Engineer, Corporate Health Physics
- \*C. L. Mansfield, Radiation Protection Engineer
- G. B. Moore, Chemistry Supervisor
- G. P. McGee, Compliance Supervisor
- \*S. S. Palmer, Stipulation Manager
- \*R. J. Prince, Radiation Protection Manager
- \*J. C. Smith, Plant Operations
- T. G. Spalding, Chemistry Supervisor
- R. L. Theimer, Chemistry Supervisor
- \*L. A. Wojcik, Nuclear Engineering Supervisor

NRC

- \*W. D. Johnson, Senior Resident Inspector

Others

- \*E. F. Ottney, Project Manager, Citizens Association for Sound Energy (CASE)

\*Denotes those present during the exit meeting on June 29, 1990.

2. Followup on Previous Inspection Findings

(Closed) Open Item (445/8921-02; 446/8921-02): Primary Chemistry Sampling System - This item was identified in NRC Inspection Report 50-445/89-21; 50-446/89-21 and involved the completion of the startup testing of the Unit 1 grab sample hood assembly. The open item was discussed in NRC Inspection Report 50-445/89-82; 50-446/89-82. At that time the licensee indicated that several design and equipment modifications had been performed on the Unit 1 grab sample hood assembly panel during the performance of the initial startup testing of the panel. Due to these design and equipment modifications, the licensee decided to perform an entire startup retest of the panel and associated instrumentation. The inspector reviewed the approved test results of ISU-028A, "Process Sampling System," Revision 0, performed during the time period March 4 through April 1, 1990, and found the test results satisfactory.

(Open) Open Item (445/8929-03; 446/8929-03): Gaseous Radwaste System - This item was identified in NRC Inspection Report 50-445/89-29; 50-446/89-29 and involved the completion of a full range calibration of the gaseous effluent radiation monitors. The inspector discussed with the licensee their proposed plans for the "primary" gaseous calibrations of the gaseous effluent radiation monitors. It was determined that the licensee had contracted a vendor to assist in developing and performing the initial gaseous calibrations of the CPSES gaseous effluent monitors. The vendor has been contracted to write the calibration procedures, train CPSES staff, and provide technical oversight during the actual calibrations. The licensee's schedule was to complete the "primary" gaseous calibration of the Unit 1 gaseous effluent monitors within 6 months following Unit 1 initial criticality.

3. Radioactive Liquid and Gaseous Waste Systems

The inspector reviewed the licensee's liquid and gaseous radioactive waste effluent programs including waste sampling, procedures for controlling liquid and gaseous effluent releases, and radioactive waste effluent dose calculations to determine agreement with commitments in Chapter 11 of the Final Safety Analysis Report (FSAR) and compliance with the requirements in Section 3/4.11 of the Unit 1 TS and the ODCM.

The inspector reviewed the licensee's implementation of the RETS and ODCM to ensure compliance with analysis sensitivities, reporting limits, analytical results, sampling requirements, surveillance tests, radioactive waste effluent systems operating procedures, and offsite dose results from effluents. Selected procedures and documents listed in the Attachment to this report were reviewed.

The inspector reviewed approved CPSES procedures for governing the release of liquid and gaseous radioactive waste. These effluent release procedures provided for the following: sampling of radioactive waste; radionuclide analysis of effluent samples prior to release; calculation of effluent release rate, effluent radiation monitor setpoints, projected offsite radionuclide concentrations, and projected offsite doses prior to release; verification of effluent radiation monitor setpoints; and verification of effluent discharge flow rates and volume discharged.

The inspector reviewed selected liquid and gaseous release permits which included batch liquid releases from the various waste tanks, unit ventilation continuous gaseous releases, and batch releases from waste gas decay tanks and containment from Unit 1 for the period January through June 1990. It was determined that processing, sampling and analysis, and approval of the releases were conducted in accordance with CPSES procedures. Offsite doses had been calculated according to the ODCM and were within TS limits. Effluent radiation monitor setpoints were calculated in accordance with ODCM methodologies. Quantities of radionuclides released in the liquid and gaseous effluents and the calculated respective doses were within the limits specified in the RETS and ODCM.

During the inspection, the inspector, accompanied by an NRC contractor, conducted initial confirmatory calculations of the offsite doses from the plant's liquid and gaseous waste effluents released to the environment. Radioactive waste effluent dose calculations were performed by the inspector for liquids, airborne particulates, and noble gases using the NRC computer code, PC DOSE, which was recently developed by a contractor for the NRC and released for trial use in May 1990 to check the dose calculations described in the licensee's ODCM. The licensee performed offsite dose calculations using methodologies, assumptions, equations, and factors described in the ODCM. The inspector compared the NRC dose results with the licensee's dose results and found that all organ and total body doses calculated by the licensee were in 100 percent agreement with the NRC results for all examples tested. Therefore, the licensee's computer calculations of offsite doses resulting from radioactive waste effluents discharged to the environment were confirmed to be accurate and in accordance with the methods, assumptions, bioaccumulation factors, and equations described and defined in the ODCM.

No violations or deviations were identified.

4. Solid Radioactive Waste Management Program

The inspector reviewed the licensee's program for the characterization and classification of solid radioactive waste to determine compliance with the requirements of 10 CFR Parts 61.55 and 61.56.

The inspector reviewed the licensee's procedures listed in the Attachment to this report and found that the licensee had developed a program for the characterization and classification of solid radioactive waste which appeared to meet the requirements of 10 CFR Part 61. The licensee, through a contractor laboratory, has performed their first annual radiochemical analyses on samples of the various solid radwaste streams to meet the requirements in 10 CFR Parts 61.55 and 61.56. The initial samples of air particulate filters and the evaporator pond were submitted for analysis on April 2, 1990. Additional radwaste samples will be sent to the contractor laboratory for analysis as they become available. The test sample analyses results will be used for determination of solid radwaste classification and isotopic composition of the various solid radwaste sources. The annual offsite analyses of individual waste streams will be used to maintain and update the isotopic data base to generate scaling factors which will relate the concentration of an easy to measure nuclide to one which is difficult to measure directly.

No violations or deviations were identified.

5. Water Chemistry and Radiochemistry Control

The inspector reviewed the licensee's water chemistry and radiochemistry programs including procedures, implementation of a water chemistry control program, implementation of a radiochemistry control program of the reactor

coolant system and plant borated water sources, and implementation of a TS surveillance program to determine agreement with commitments in Chapter 10 of the FSAR and compliance with the requirements in Sections 3/4.1.2.5, 3/4.4.6, 3/4.4.7, 3/4.5.1, 3/4.5.4, 3/4.7.1.4, 3/4.9.1, and 6.8 of the Unit 1 TS.

The inspector's review of the licensee's Unit 1 water chemistry and radiochemistry programs found that the licensee had met the commitments and requirements of the FSAR and the Unit 1 TS. It was verified that all water chemistry and radiochemistry analytical procedures, chemical control procedures, and surveillance procedures had been completed, approved, and implemented. The licensee's procedures were adequate to monitor and control the water chemistry and radiochemistry programs. The water chemistry limits for the various modes of plant operation were found to be based on Electric Power Research Institute guidelines. The procedures reviewed are listed in the Attachment to this report.

The inspector reviewed selected chemistry logs and analytical data for monitoring TS requirements of the water chemistry and radiochemistry control parameters. Data for the period January through June 1990 were reviewed and met TS requirements. The results of the licensee's initial E-Bar analysis performed on May 17, 1990, at 48 percent power level, were reviewed and found satisfactory.

No violations or deviations were identified.

#### 6 Exit Meeting

The inspector met with the NRC senior resident inspector and the licensee representatives denoted in paragraph 1 of this report at the conclusion of the inspection on June 29, 1990. The inspector summarized the scope of the inspection and discussed the inspection findings. The licensee did not identify as proprietary any of the material provided to, or reviewed by, the inspector during the inspection.

ATTACHMENT

Comanche Peak Steam Electric Station

NRC Inspection Report 50-445/90-17; 50-446/90-17

Documents Reviewed

<u>Procedure No.</u>	<u>Title</u>	<u>Revision</u>	<u>Date</u>
1.	<u>Chemistry Manual (CHM) Procedures</u>		
CHM-110A	Technical Specification Surveillance Tracking	0	02/08/90
CHM-501	Chemistry Control of the Steam Generators	3	03/29/88
CHM-506	Chemistry Control of the Primary System	4	05/11/90
CHM-510	Chemistry Control of the Boron Recovery System	3	11/14/89
CHM-511	Chemistry Control of the Safeguards System	3	01/27/88
CHM-516	Sampling and Analysis of Gaseous Waste Systems	3	10/20/89
CHM-517	Chemistry Control of Liquid Waste Systems	2	10/20/89
CHM-519	Chemistry Control of the Refueling Water	3	02/13/89
CHM-706	Technical Specification Surveillance of the Secondary Coolant System	2	08/18/88
CHM-707	Surveillance of Diesel Fuel Oil	3	06/05/89
2.	<u>Station Administrative (STA) Procedures</u>		
STA-603	Control of Station Radioactive Effluents	5	04/27/90

3. Radiation Protection Instructions (RPI)

RPI-216	Waste Stream Sampling and Data Base Maintenance	0	01/22/90
RPI-704	Pre-Release Processing for Radioactive Effluent Releases	1	04/27/90
RPI-705	Post-Release Processing for Radioactive Effluent Releases	2	01/19/90
RPI-706	Radioactive Effluent Tracking	2	01/19/90
RPI-707	Radioactive Effluent Reporting	1	01/19/90

4. Radioactive Waste System (RWS) Procedures

RWS-102	Drain Channel A	4	11/18/89
RWS-103	Drain Channel B	4	11/17/89
RWS-104	Drain Channel C	4	11/17/89

5. Offsite Dose Calculation Manual 3 04/10/90

6. Data Forms Title

STA-603-10	Batch Liquid Radioactive Effluent Release Data Sheet
STA-603-11	Gas Decay Tank Radioactive Effluent Release Data Sheet
STA-603-12	Continuous Gaseous Radioactive Effluent Release Data Sheet
STA-603-15	Containment Radioactive Effluent Release Data Sheet
STA-603-16	Secondary Waste Release Data Sheet
RPI-706-5	31-Day Dose Projection Verification Sheet
RPI-706-6	Monthly Dose Summation Report Verification Sheet
CHM-506-4	Test Verification Sheet, Chemistry Control of the Primary System



6. (continued)

<u>Data Forms</u>	<u>Title</u>
CHM-511-1	Safeguards System Data Sheet
CHM-511-3	Test Verification Sheet, CS Chemical Addition Tank
CHM-511-4	Test Verification Sheet, Boric Acid Tank
CHM-511-5	Test Verification Sheet, Accumulators
CHM-516-5	Gaseous Effluent Gross Alpha Composite Worksheet
CHM-516-6	Gaseous Effluent Strontium 89 and 90 Composite Log
CHM-517-10	Liquid Effluent Composite Analysis
CHM-519-4	Test Verification Sheet, Chemistry Control of the Refueling Water
CHM-706-1	Test Verification Sheet, Technical Specification Surveillance of the Secondary Coolant System
CHM-707-2	Test Verification Sheet for Diesel Fuel
CHM-707-3	Diesel Fuel Data Sheet Prior to Loading
CHM-707-4	Diesel Fuel Data Sheet for Outside Laboratory
CHM-707-5	Data Sheet for Diesel Generator Fuel Storage Tanks
CHM-707-6	Test Data Form for Diesel Driven Fire Pump Fuel Tank