

APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-445/84-43
50-446/84-17

Construction Permits: CPPR-126
CPPR-127

Dockets: 50-445
50-446

Category: A2

Licensee: Texas Utilities Electric Company
Skyway Tower
400 N. Oliver Street
Lock Box 81
Dallas, Texas 75201

Facility Name: Comanche Peak Steam Electric Station (CPSES)

Inspection At: CPSES Site, Glen Rose, Somervell County, Texas

Inspection Conducted: October 31 - November 2, 1984

Inspector: Blaine Murray 12/19/84
for H. D. Chaney, Radiation Specialist Date
Facilities Radiological Protection Section (FRPS)

Approved: Blaine Murray 12/19/84
B. Murray, Chief, FRPS Date

D. M. Hunnicutt for 12/19/84
D. M. Hunnicutt, Team Leader Date
Comanche Peak Task Force

Inspection Summary

Inspection Conducted October 31 - November 2, 1984 (Report 50-445/84-43;
50-446/84-17)

Areas Inspected: Routine, announced inspection of the licensee's actions to resolve NRC identified deficiencies in the licensee's emergency preparedness program, radiation protection (RP) program, and actions to implement NUREG-0737. The inspection involved 19 inspector-hours onsite and 4 inspector-hours offsite by one NRC inspector.

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

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DETAILS

1. Persons Contacted

Texas Utilities Electric Company

- *J. Kuykendall, Manager Nuclear Operations
- *R. Jones, Plant Operations Manager
- *D. Braswell, Engineering Superintendent
- *T. Gosdin, Support Services Superintendent
- *W. Grace, RP Supervisor
- *B. Lancaster, RP Engineer
- *G. Laughlin, Emergency Planning Coordinator
- *E. Schmitt, Staff Chemist
- *R. Beleckis, Emergency Planner
- *C. Killough, Quality Surveillance Supervisor
- B. Delano, Chemistry and Environmental Engineer
- D. Stearns, RP Technician

Others

- *D. Kelley, NRC Senior Resident Inspector
- *P. Corwin, Consultant
- A. Quam, Consultant

*Denotes those present at the exit interview.

2. Licensee Action on Previous Inspection Findings

(Closed) Open Item (445/8402-01): NUREG-0737, Item II.B.2, Shielding Design Review - Based on a re-evaluation of the shielding provided areas to be accessed for the obtaining of high range gaseous effluent samples, the regional staff determined that the areas appear to be adequately shielded to ensure personnel can retrieve samples and analyze them without exceeding 10 CFR Part 50, Appendix A - General Design Criteria 19 for radiation exposure. This item is considered closed.

(Closed) Open Item (445/8402-02): NUREG-0737, Item II.B.3., Postaccident Sampling System (PASS) - The licensee's PASS and analytical procedures provide equipment and procedures that satisfy the requirements of NUREG-0737 for sampling reactor coolant, and the containment sump and atmosphere following a reactor accident. The licensee's analysis sensitivities satisfy the recommendations of Regulatory Guide (RG) 1.97, and were incorrectly referenced as deviating from the RG in Inspection Report 50-445/84-25. The licensee still needs to verify representative sampling of the liquid portion of the system prior to reactor operations above 5 percent power. This portion of the open item will be tracked to completion by Open Items 445/8317-09 and 446/8311-09. This item is considered closed.

(Closed) Open Item (445/8402-03): NUREG-0737, Item II.F.1-1, High Range Noble Gas Monitor - The licensee had completed preoperational testing and calibration of all monitors used to monitor noble gas releases, i.e., plant vent system, main steam line monitors, and condenser off-gas systems. The licensee equipment appears to satisfy the requirements of NUREG-0737. This item is considered closed.

(Closed) Open Item (445/8402-05): NUREG-0737, Item II.F.1-3, Containment High-Range Radiation Monitor - The licensee had completed preoperational testing and in-place calibration of the two monitors in the Unit 1 containment. The in-place calibration satisfied the NUREG-0737 criteria for a full range calibration by using a combination of radiation sources and electronic signal injections. This item is considered closed.

(Closed) Open Item (445/8333-41; 446/8317-41): Postaccident Containment Air Sampling and Analysis - The licensee had revised CPSES Chemistry Procedure CHM-515A to provide definitive instructions on the removal and packaging of the containment air postaccident sample so that the sample cartridge will fit into the shielded transfer container. This item is considered closed.

(Closed) Open Item (445/8333-43; 446/8317-43): Postaccident Noble Gas and Particulate Effluent Sampling and Analysis - The licensee had revised CPSES emergency preparedness and chemistry procedures (EPP-104, CHM-516, and CHM-521) to provide instructions on the equipment and methods to be used in obtaining a noble gas grab sample during reactor accident situations requiring such a sample, such as when both offline high range noble gas continuous stack effluent monitors are inoperative. This item is considered closed.

(Closed) Open Item (445/8333-65; 446/8317-65): Meteorological Instrumentation - The licensee had completed a detailed evaluation of the accuracies of each meteorological parameter monitor and established that the accuracies satisfied current industry recommendations for analog systems (proposed Revision 1 to RG 1.23 and draft American National Standard/American Nuclear Society Standard 2.5-1984). This item is considered closed.

(Closed) Open Item (445/8406-01; 446/8403-01): Meteorological Reliability - The licensee had performed a review of meteorological data recovery for a 30-day period and verified by estimation that an annual reliability of greater than 90 percent for the overall system could be projected. The licensee's bi-weekly preventative maintenance and surveillance program, when combined with the semi-annual calibration program, should ensure a data recovery level commensurate with industry

recommendations. Yearly reliability data will be presented per facility technical specifications requirements. This item is considered closed.

(Closed) Open Item (445/8333-107; 446/8317-107): Offsite Radiological Surveys - The licensee had revised CPSES Emergency Procedure EPP-309 to require the marking of particulate filters to indicate the inlet side. This item is considered closed.

(Closed) Open Item (445/8333-111; 446/8317-111): Postaccident Sampling System - The licensee had provided instructions in CPSES Chemistry Procedure CLI-900 for labeling of PASS syringes and sample containers prior to obtaining the required samples. This item is considered closed.

(Closed) Open Items (445/8333-112; 446/8317-112 and 445/8333-44; 446/8317-44): Postaccident Liquid Effluent Sampling and Analysis - These two items are being closed due to licensee confusion over the original intent of the open items and actions required. Since these items are common to both units and the NRC staff position on this item needs to be restated, a new open item will be generated to cover these concerns. See paragraph 3 for additional information.

(Closed) Open Item (445/8333-117; 446/8317-117): Nuclear Operations Support Facility - The licensee had revised CPSES emergency procedure EPP-206 to provide adequate guidance (by use of a checklist and valve lineup diagram) in establishing the proper flow path from the emergency operations facility (EOF) decontamination facility drains to the radioactive liquid collection sump. This item is considered closed.

(Closed) Open Item (445/8333-118; 446/8317-118): Personnel Monitoring and Decontamination - The licensee had revised CPSES Emergency Procedures EPP-307 and EPP-308 and employee RP training handout material to reflect that frisker readings, during personnel whole body frisking (survey), of greater than 100 counts-per-minute (CPM) over a nominal background rate equaled the CPSES limit of 1000 disintegrations per minute (DPM) for allowable surface contamination. Also the licensee issued instructions for use of a standard conversion factor for converting CPM readings to DPM for all beta/gamma surface contamination surveys using a frisker type detector. This item is considered closed.

(Closed) Open Item (445/8333-119; 446/8317-119): Personnel Monitoring and Decontamination - The licensee had revised CPSES Emergency Procedures EPP-307 and 308 to reflect specifically which routine RP procedures were to be utilized in carrying out certain emergency actions regarding personnel monitoring and decontamination. This item is considered closed.

3. Open Items Identified During This Inspection

Open Item (445/8443-01): Postaccident Sampling of Radioactive Liquids Introduced to the Liquid Radioactive Waste (LRW) System - The licensee had not evaluated and taken action as necessary to ensure that sampling of, and analysis of, liquids introduced into the LRW floor drain and waste holdup tanks, either inadvertently or purposefully, following a TMI-like accident (source term equivalent), can be recirculated, purged, sampled, and analyzed without creating a concurrent accident situation. Also, this LRW sampling and analysis shall be able to be performed without any personnel exceeding the 10 CFR Part 50 GDC-19 limits on personnel radiation exposure. Furthermore, the licensee had not included in the emergency situation decisionmaking process the possibility that concurrent with a reactor accident, inoperable or offscale liquid effluent monitor conditions may be caused by highly radioactive liquids leaking to the proximity of effluent monitors or through discharge lines. This item should be resolved by the licensee within 6 months following reactor fuel loading.

4. Previously Identified Inspection Findings That Were Not Closed

a. Open Item That Could Impact on Fuel Loading

Open Item (445/8402-04): NUREG-0737, Item II.F.1-2, Sampling and Analysis of Plant Effluents - The licensee had evaluated the mechanics of sampling and analysis of high level (several microcuries per cubic centimeter of radioactivity) vent stack effluents for particulates and radioiodines and determined that with a short sampling period the sample could be safely transported (with remote handling tools) and analyzed without any person exceeding GDC-19 limits. The licensee's source term for stack effluents was noted by the NRC inspector to be lower than that referenced in NUREG-0737 for this situation; however, the licensee's exposure evaluation still confirmed, with some modification of the source term, that sampling and analysis could be still safely performed even at an elevated source term. This portion of the open item has been satisfactorily resolved by the licensee. The remaining portion of this item concerning incorporation of the high range particulate and iodine effluent grab sampling program and analysis results into the emergency response decisionmaking process remains open. The licensee's emergency procedure for providing guidance in postaccident sampling (EPP-117) is confusing as to specific sampling system used since all effluent and reactor coolant sample systems appear to be addressed as PASSs. Also, the manual dose assessment procedure (EPP-303/draft) does not adequately reference source term input from specific grab sampled systems, such as the high range effluent grab sample system (X-RE-5570 A and B sample skid). Furthermore, the licensee had not received the test results on the above noted systems for determining the system's ability to

representatively sample plant gaseous effluents as required by NUREG 0737, Table II.F.1-2. The licensee was appraised of current NRC (Region III) findings on the possible inability of the licensee's vent effluent grab sample system to adequately sample radioiodine species due to very high sample line losses. The licensee was informed that further information regarding this situation, which could be a generic issue since many licensees have this particular type of sampling equipment, would be made available to them as it is received by the NRC regional office. This item is considered open pending licensee action on the above noted concerns.

b. Open Items That Could Impact On Full Power Operation (above 5 percent)

Open Item (445/8333-56; 446/8317-56): Emergency Kits and Emergency Survey Instruments - The licensee had revised the emergency kit inventory procedure to provide for the specific listing of pocket dosimeters by numerical range in lieu of generalized value of low and high range. The licensee had an adequate inventory of portable radiation measuring and detection instrumentation in the kits. The instruments inspected for functional operation in the technical support center (TSC) and in the EOF were in current calibration and operable. It was noted that the licensee's normal RP instrument response check program (HPT-802) may not be a viable program for emergency preparedness RP instruments due to the remoteness of the instrument storage locations from the licensee's check source devices. The licensee indicated this area would be reviewed for improvement. Since the licensee's emergency kit inventory procedure (EPP-107) that addresses the above noted concerns was in a draft status (revision), this item remains open pending completion of licensee actions (issuance of revised procedures).

Open Item (445/8333-57; 446/8317-57): Emergency Kits and Emergency Survey Instruments - This item dealt with the licensee's lack of implementing operational, maintenance, and calibration procedures for the continuous airborne radioactivity monitors (CAMs) used in the operational support center (OSC) and TSC. The licensee had issued CPSES Procedures HPI-863, 833, and 838 to cover the respective activities noted above. During a demonstration of the OSC and TSC CAMs (monitors iodine only), both units failed to operate. The NRC inspector also noted the following additional shortcomings of these instruments and their procedures:

- Procedures for startup (HPI-863) of the instruments do not require verification of detector operability by verification of instrument response to a known value radioactive source. These response checks are considered a standard industry practice. CAM Calibration Procedure HPI-838 references establishment of this response parameter, however, it is not being accomplished.

- Procedures for operation (HPI-863) and surveillance (EPP-204, 205 and 310) do not establish initial alarm settings or provide for trending of monitoring data. These particular types of CAMs do not have operating-hour counters, and the licensee had not provided for the periodic recording of data.
- The air intake and return tubing on the CAMs is of such lightweight construction that crimping of the tubing will occur due to its own unsuspended weight involving lengths of a few inches. Several crimps in this tubing on both instruments were noted to licensee representatives.
- The overall reliability of these instruments is doubtful due to the failure of the two instruments checked.
- Even though it is of a different manufacturer and type, there is a possibility that the CAM located in the EOF may suffer from some of the shortcomings noted in the review of the OSC and TSC CAMs.

Also, the NRC inspector noted to the licensee that current emergency preparedness procedures are vague and fragmented in regard to instructions on RP surveys for determining OSC, TSC, and EOF habitability, the frequency that such surveys should be made or the frequency at which CAM data should be evaluated during an extended emergency situation. The licensee's program in this area is not in agreement with the recommendations of NUREG-0696.

This item is considered open pending licensee action to resolve the above noted concerns.

5. Exit Interview

The NRC inspector met with the licensee's representatives denoted in paragraph 1 and the NRC Senior Resident Inspector at the conclusion of the inspection on November 2, 1984. The scope and findings of the inspection were discussed. The NRC inspector emphasized the need for the licensee to complete actions to resolve the remaining open items discussed in paragraph 4 that could impact on fuel load and reactor operations exceeding 5 percent power.