

APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-445/84-25
50-446/84-09

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, Somerville County, Texas

Inspection Conducted: July 23-27, 1984

Inspector: Blaire Murray 8/22/84
for H. D. Chaney, Radiation Specialist Date
Facilities Radiological Protection Section

Approved: Blaire Murray 8/22/84
B. Murray, Chief, Facilities Radiological Date
Protection Section

D. M. Hunnicutt 9/4/84
D. M. Hunnicutt, Team Leader Date
Comanche Peak Task Force

Inspection Summary

Inspection Conducted July 23-27, 1984 (Report 50-445/84-25; 50-446/84-09)

Areas Inspected: Routine, announced inspection of the applicant's actions to resolve NRC identified deficiencies in the applicant's emergency preparedness program, radiation protection program, and actions to implement NUREG-0737. The inspection involved 39 inspector-hours onsite by one NRC inspector.

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

DETAILS

1. Persons Contacted

Texas Utilities Electric Company

- *R. Jones, Plant Operations Manager
- *D. Braswell, Engineering Superintendent
 - E. Alarcon, Results Engineer
 - D. Bull, Chemistry Technician
- *R. Calder, TUGCO-Nuclear Engineering (TNE) Manager
- *J. Curtis, Radiation Protection (RP) Supervisor
- *R. Fishencord, RP Foreman
- *T. Gosdin, Support Services Superintendent
- *W. Grace, RP Supervisor
- *B. Lancaster, RP Engineer
- *G. Laughlin, Emergency Planning Coordinator
- *F. Madden, TNE Supervisor
 - W. Nixon, Results Engineering Supervisor
- *E. Schmitt, Staff Chemist
 - F. Shants, Information Coordinator
- *J. Shrewsberry, TNE Systems Engineer
 - C. Turner, Director, Nuclear Training
- *J. Warkentin, TNE Lead Nuclear Engineer
- *L. Wojcik, TNE Engineer
- M. Wood, Chemistry Technician

Others

- *R. Bangart, NRC Region IV CPSES Task Force Director
- *D. Hunnicutt, NRC Region IV CPSES Task Force Team Leader
 - S. Burwell, NRC Project Manager
- *D. Kelley, NRC Senior Resident Inspector
 - P. Corwin, Consultant
 - K. Schmitt, Consultant
 - F. Puleo, Consultant

*Denotes those present at the exit interview.

2. Applicant Action on Previous Inspection Findings

(Closed) Open Item (445/8316-05): Radiation Worker Training (RWT) - The applicant had revised RWT course student aids and lesson plans to resolve the NRC's concerns regarding instructions in Regulatory Guide (RG) 8.13, "Instruction Concerning Prenatal Radiation Exposure," and NUREG-0041, "Manual of Respiratory Protection Against Airborne Radioactive Materials." The applicant's nuclear training department had also provided instructors with additional guidance on conduct of practical demonstrations in the use of protective clothing and had provided RWT instructors with professional

respiratory protection training. The applicant had also taken administrative action to ensure that all personnel that are required to have RWT receive the necessary classroom instruction prior to entry into a radiologically controlled area. The RWT tests currently being given to employees appear to be adequate for assessing student performance. The respiratory protection training now adequately covers instructions on qualitative fit testing of respirators and the use of chemical cartridges. This item is considered closed.

(Closed) Open Item (445/8316-15): RP Instrumentation and Calibration Program - The applicant had issued a procedure (HPI-861) that provided for the calibration of beta radiation dose rate measuring instruments. The applicant had also written an order for the procurement of National Bureau of Standards certified beta radiation sources that will provide dose rates between 6 mrad/hr and 60 rad/hr for instrument calibration. This item is considered closed.

(Closed) Open Item (445/8402-06): NUREG-0737-(Item III.D.1.1) Integrity of Systems Outside of Containment - The applicant had revised station procedure STA-705, "Radioactive System Leakage Inspection Program," to require periodic verification that the reactor coolant (RC) and containment atmosphere (CA) portions of the postaccident sampling system (PASS) had zero leakage in areas where personnel access would be required during accident conditions. Certain portions of the PASS are allowed minute leakage where this leakage is collected and controlled to minimize exposures. This item is considered closed.

(Closed) Open Item (445/8402-07): NUREG-0737-(Item III.D.3.3) Improved In-Plant Iodine Monitoring - The applicant had revised the Final Safety Analysis Report (FSAR) in Amendment 50 to indicate more correctly the equipment and techniques to be employed in the monitoring of radioactive iodine following a reactor accident that releases fission products to in-plant environs. Also, station procedure EPP-310, "Onsite and In-Plant Radiological Surveys," had been revised to reflect appropriate sampling and analysis techniques and equipment. This item is considered closed.

(Closed) Open Item (445/8333-47; 446/8317-47): Medical Treatment Facilities - The medical treatment facility (first-aid treatment locker) at the radiological controlled access (RCA) had been stocked with stretchers, respirators, first aid supplies, and a major trauma kit. Communications and personnel frisking instruments are located nearby. Emergency implementing procedures were verified by the NRC inspector to be adequate. This item is considered closed.

(Closed) Open Item (445/8333-50; 446/8317-50): Decontamination Facilities - The personnel decontamination facility adjacent to the RCA had been properly stocked with decontamination supplies, procedures, a telephone, and personnel friskers. The equipment had also been

incorporated into the emergency equipment inventory list. This item is considered closed.

(Closed) Open Item (445/8333-54; 446/8317-54): Emergency Equipment - The applicant had adequately identified emergency equipment storage areas, and clearly identified on each emergency equipment kit its intended use. An inventory of the kit contents is attached to the exterior of the kit. This item is considered closed.

(Closed) Open Item (445/8333-60; 446/8317-60): Area and Process Radiation Monitors (ARM-PRM) - The applicant had included ARMs and PRMs in the station maintenance, calibration, acceptance testing, and operational programs. This item is considered closed.

(Closed) Open Item (445/8333-61; 446/8317-61): ARM and PRM - The applicant had evaluated the operation of the ARM and PRM systems in regard to readouts and monitoring parameters. The NRC inspector found these areas to be satisfactory. This item is considered closed.

(Closed) Open Item (445/8333-62; 446/8417-62): ARM and PRM - The applicant had developed maintenance and calibration procedures for ARMs and PRMs. This item is considered closed.

(Closed) Open Item (445/8333-63): ARM and PRM - The applicant's installation and positioning of the Unit 1 reactor containment high range radiation monitors (NUREG-0737, item II.F.1-3) are considered satisfactory for accomplishing their intended function. This item is considered closed. Unit 2 reactor containment high range radiation monitors will be tracked via Open Item 446/8317-63.

(Closed) Open Item (445/8333-66; 446/8317-66): Meteorological Instrumentation - The applicant had replaced the vertical temperature gradient recorder chart with an improved strip chart. This item is considered closed.

(Closed) Open Item (445/8333-67; 446/8317-67): Meteorological Instrumentation - The applicant had revised dose assessment procedures (EPP-301 and EPP-302) to provide for meteorological data substitution and criteria for determining when dose projection updates are required. This item is considered closed.

(Closed) Open Item (445/8333-78; 446/8317-78): Respiratory Protection - The applicant had stored two self-contained breathing apparatuses (SCBAs) in the technical support center (TSC). The emergency kit in the TSC contains 25 cartridge type full-face respirators. This item is considered closed.

(Closed) Open Item (445/8333-79; 446/8317-79): Respiratory Protection - The applicant's SCBA air bottle refilling capability (mobile compressor/cascade system), spare bottles, and agreements with local fire departments for air bottle refilling is considered satisfactory. This item is considered closed.

(Closed) Open Item (445/8333-109; 446/8317-109): Onsite (Out-Of-Plant) Surveys - The applicant had revised station procedure EPP-310, "Onsite and In-Plant Radiological Surveys," to require marking of particulate filters to indicate sample air inlet side. This item is considered closed.

(Closed) Open Item (445/8333-110; 446/8317-110): In-Plant Radiological Surveys - The applicant had revised station procedure EPP-310 to require marking of particulate filters to indicate sample air inlet side. This item is considered closed.

(Closed) Open Item (445/8333-113; 446/8317-113): Radiation Protection During Emergencies - The applicant's station procedure EPP-310 provides adequate instructions for the evaluation of and providing RP for security personnel for areas they may be required to occupy during an emergency situation. This item is considered closed.

3. Previously Identified Inspection Findings That Were Not Closed

a. Open Items That Could Impact on Fuel Loading

Open Item (445/8333-43; 446/8317-43): Postaccident Gas and Particulate Effluent Sampling and Analysis - This item concerns the applicant's ability to obtain a vent stack noble gas grab sample. The applicant had not incorporated the grab sampling techniques into station emergency implementing procedures nor had trained appropriate personnel on collection methods. The NRC inspector discussed the need for the applicant to specifically address the criteria for determining when this grab sample should be taken and techniques to be employed to ensure appropriate shielding during transport. This item remains open.

Open Item (445/8333-65; 446/8317-65): Meteorological Instrumentation - The applicant's onsite meteorological measurements program did not provide for an adequate determination of system accuracies and comparison to the recommendations of RG 1.23. This item is considered open pending the resolution of the above concerns.

Open Item (445/8401-01): NUREG-0737-(Item II.B.2) - Shielding Design Review - The applicant had not properly evaluated the radiation levels from the plant high-efficiency particulate air filters and charcoal adsorber banks on plant areas requiring access. The applicant referenced the original studies as being satisfactory and

cited the approval of the shielding study by the NRC Office of Nuclear Reactor Regulations (NRR). Currently, the NRC staff is evaluating the licensee's position in regard to these concerns. This item remains open.

Open Item (445/8402-03): NUREG-0737-(Item II.F.1-1) Noble Gas Monitor - The applicant had not yet completed preoperational testing or calibration of the system. This item remains open.

Open Item (445/8402-04): NUREG-0737-(Item II.F.1-2) Sampling and Analysis of Plant Effluents - The licensee had not completed testing of the sampling system to ensure that representative sampling can be performed and had not performed a suitable personnel exposure evaluation for obtaining, transporting, and analyzing the samples. The NRC inspector determined that even though the applicant had installed two units for the grab sampling and subsequent laboratory analysis of vent stack effluents (particulates and iodines) during a reactor accident, there were no instructions for initiating sampling or using the data for offsite dose assessment. The NRC inspector noted to the applicant that the lack of implementing procedures for these systems would preclude closing of this item. Also, the applicant had not performed system preoperational testing and verification of representative sampling (per ANSI N13.1-1969) and sample line deposition studies. As mentioned in Open Item 445/8333-43, there appears to be a logistics problem with getting sample transfer shields up and down the stairs. This item remains open. This item is also addressed in NUREG-0797, "Safety Evaluation Report Related to the Operation of CPSES, Units 1 and 2."

Open Item (445/8402-05): NUREG-0737-(Item II.F.1-3) Containment High-Range Radiation Monitor - The applicant had installed appropriate high range gamma radiation detectors inside of the Unit 1 containment. Installation provides for an unobstructed wide field of view. The detectors have been calibrated at the vendor's facility prior to installation at several decades between 100 and 15,000 R/hr. The applicant had not completed preoperational testing of the detector system or in-place calibration of the detectors. This item remains open.

b. Open Items That Could Impact on Exceeding 5 Percent Power

Open Item (445/8402-02): NUREG-0737-(Item II.B.3) Postaccident Sampling - The applicant had not provided in the reactor coolant sampling system a method for preventing blockage, had used too many uncontained mechanical connectors, and had not functionally verified the system's (both liquid and containment atmosphere) sampling capability in terms of representative sampling. The applicant had issued instructions for the welding of all mechanical joints on the

RC-PASS that are located in areas requiring personnel access, except for mechanical joints inside of the PASS cabinets. The applicant's method for preventing sample line blockage is considered satisfactory. The applicant had completed preoperational testing of the PASS. This item will remain open pending the applicant demonstrating the system's capability to provide representative samples during low power testing. Also, the applicant had not complied with the sampling and analysis sensitivity recommendations of RG 1.97, Revision 2. This item remains open.

Open Item (445/8333-41; 446/8317-41): Postaccident Containment Air Sampling and Analysis - The applicant had not yet incorporated the necessary instructions into procedure CHM-515A for disassembly and packaging of the CA-PASS sample cartridge so that it will fit into the shielded transfer cart. This item remains open.

Open Item (445/8333-44; 446/8317-44): Postaccident Liquid Sampling and Analysis - The applicant had evaluated liquid effluent sampling requirements and determined that sample sinks would be necessary for obtaining accident condition effluent samples from the laundry holdup tank and the radioactive liquid waste storage tanks only. Funds have been budgeted for a 1985 installation of sample sinks so that sampling and liquid drainage can be controlled properly. This item remains open pending installation of liquid effluent sample sinks and the development of implementing procedures.

Open Item (445/8333-56; 446/8317-56): Emergency Kits and Emergency Survey Instruments - During this inspection it was found that emergency kits contained no RP instruments. All RP instruments were being calibrated. The NRC inspector noted to the applicant that there appeared to be a need to list devices and RP instruments on inventories by specific model or range. This is particularly evident in the case of low, medium, and high range self reading pocket dosimeters, when the dosimeters are provided in several similar ranges. This item remains open.

Open Item (445/8333-57; 446/8317-57): Emergency Kits and Emergency Survey Instruments - The applicant had procured continuous airborne radioactivity monitors (CAMs) for use in the TSC and operational support center to assess airborne particulate and iodine radioactivity. The applicant had not developed operation, maintenance, and calibration procedures for the CAMs. This item remains open.

Open Item (445/8333-107; 446/8317-107): Offsite Radiological Surveys - The applicant had not provided a reliable method for indicating the inlet side of particulate filters specified in station procedure EPP-309. This item remains open.

Open Item (445/8333-111; 446/8317-111): PASS - The applicant had not yet provided a reliable method to ensure that syringes used for RC and CA sampling are labeled prior to use with appropriate information to ensure accountability of samples. This item remains open.

Open Item (445/8333-112; 446/8317-112): Liquid Effluent Sampling and Analysis - The applicant had not provided sufficient procedural instructions (in the area of RP) for tank recirculation and sample line flushing during the collection of highly radioactive liquid samples from radioactive waste tanks following a reactor accident. This item remains open.

Open Item (446/8333-117; 446/8317-117): Nuclear Operations Support Facility - The applicant had developed a revision to EPP-206, "Activation of the Emergency Operations Facility and Emergency Operations Facility Personnel Duties," that provided a simple diagram of the radioactive liquid waste collection system and interface with the normal sanitary waste disposal system. The NRC inspector determined that the applicant's actions did not satisfactorily resolve this concern since: (1) no provisions were made for locking in a specific effluent flow path, (2) the activation checklist for the Emergency Operations Facility did not require establishing the proper radioactive liquid waste flow path, and (3) the flow diagram orientation along with the similarity of the diversion valves could result in a wrong valve lineup being established. This item remains open.

Open Item (445/8333-118; 446/8317-118): Personnel Monitoring and Decontamination - The applicant had not resolved this item. The applicant is developing a method of indicating on personnel friskers by labeling (during routine calibration) the instrument's response that will indicate surface contamination equivalent to 1,000 dpm/100cm². This item remains open.

Open Item (445/8333-119; 446/8317-119): Personnel Monitoring and Decontamination - The applicant had not effected the necessary revisions to station emergency procedures that would provide specific RP procedure references. This item remains open.

4. Exit Interview

The NRC inspector met with the applicant representatives denoted in paragraph 1 and the NRC Region IV Task Force Director at the conclusion of the inspection on July 27, 1984. The NRC inspector discussed the scope and findings of the inspection. The NRC inspector emphasized the need for the applicant to complete actions to resolve the remaining open items discussed in paragraph 3 that could impact on fuel load and reactor operations exceeding 5 percent power.