APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-445/89-29
50-446/89-29

Construction Permits: CPPR-126
CPPR-127

Dockets: 50-445
50-446

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

Facility Name: Comanche Peak Steam Electric Station (CPSES)

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

Inspection Conducted: May 2-4, 1989

Inspector: _____ 5/30/89
for H. D. Chaney, Senior Radiation Specialist Date
Facilities Radiological Protection Section

Approved: _____ 5/30/89
R. E. Baer, Chief, Facilities Radiological Date
Protection Section

Inspection Summary

Inspection Conducted May 2-4, 1989 (Report 50-445/89-29; 50-446/89-29)

Areas Inspected: Routine, announced preoperational inspection of the licensee's Unit-1 solid, liquid, and gaseous radioactive waste (radwaste) systems; radioactive material (RAM) transportation program; and radwaste management program.

Results: The NRC inspector determined that the licensee had developed radwaste management, radwaste processing and effluent control, and RAM transportation programs based on regulatory and industry guidelines which should assure plant operations in this area are carried out in accordance with regulatory and Technical Specification (TS) requirements. The nuclear training department (NTD) is currently finishing a new nonlicensed operator (Auxiliary Operator [AO]) training and qualification program designed for radwaste processing and effluent control operations. This training program will support the new organizational changes that involved

making radwaste operations a separate group within the operations department. Quality assurance (QA) department is well staffed and organized to provide surveillance and audit functions when radwaste systems and programs are fully developed. All radwaste systems (solid, liquid, gaseous, process and effluent monitors, and air filtration systems) are under going calibration, preoperational testing, or development of preoperational tests.

Within the areas inspected, no violations or deviations were identified. Two previously identified open items were closed and one open item was updated in paragraph 2. Seven new open items are listed in paragraph 3 and respectively discussed in paragraphs 6, 8, 9, 10, 11, 12, and 13.

DETAILS

1. Persons Contacted

TU Electric

*M. Blevins, Manager, Technical Support
R. Beleckis, Staff Emergency Planner
*M. Bozeman, Manager, Chemistry/Environmental
J. Burnett, Radiation Protection (RP) Staff Health Physicist
S. Cassingham, Training Coordinator, NTD
J. Curtis, Supervisor, RP
*G. Davis, Open Items Coordinator
*R. Fishencord, Supervisor, RP-Radwaste
W. Hartshorn, Supervisor, Operations QA Surveillance
*D. Koss, Administrative Assistant, Operations Department
*S. Leuders, Supervisor, Operations-Radwaste
P. Leyendecker, Manager, Operations QA Surveillance Group
D. McAfee, Manager, Operations QA
W. Moore, Nonlicensed Operator Training Specialist, NTD
M. Niemeyer, Supervisor Operations Training, NTD
*R. Prince, Assistant Manager, RP
*G. Ruszaia, Operations Specialist
*E. Schmitt, Manager, RP
*J. Smith, Plant Operations Staff
W. Wells, Supervisor, Operations QA Audit Group

Others

R. Warnick, Assistant Director for Inspection Programs, NRC
S. Bitter, Resident NRC Inspector - Operations
S. Burris, Senior Resident NRC Inspector - Operations
*J. Wiebe, Lead NRC Project Inspector - Operations
F. Cobb, Lead Engineer HVAC Startup, Consultant
S. Ginn, Shift Test Engineer (STE) Radwaste Processing Systems, Consultant
R. Furushima, STE, Liquid Radwaste, Consultant
F. Maddy, STE, Digital Radiation Monitoring System (DRMS), Consultant
F. Miller, Operations QA Specialist (RP), Consultant
G. Ondriska, Startup Supervisor, Consultant
*E. Ottney, Program Manager, CASE
A. Pereira, QA Issue Interface, Consultant
J. Sanders, Lead Engineer Instrument and Controls Startup, Consultant
*J. Waters, Site Licensing Engineer

*Denotes those present during the exit interview on May 5, 1989.

2. Followup on Previous Inspection Findings (92701)

(Closed) Open Item (445/8402-04): Sampling and Analysis of Plant Gaseous Effluents (NUREG-0737 Item II.F.1-2) - This item was previously discussed in NRC Inspection Reports 50-445/84-04, 50-445/84-25, and 50-445/84-43, and involved: potential problems with the licensee's ability to obtain representative effluent samples from the vent stack monitoring systems (X-RE-5570 A and B sample skids), lack of an evaluation as to the dose rates to be encountered by personnel approaching the sample skids, and lack of emergency procedures to address potential radiological problems when obtaining samples under reactor accident conditions. The NRC inspector reviewed the consultant's study of sample line losses for Units 1 and 2 vent stack and Unit 1 reactor containment airborne radioactivity sampler/monitors, the licensee's evaluation and calculations on expected personnel exposures during the manual sampling of vent stack releases under reactor accident conditions, and incorporation of the aforementioned data into plant Emergency Procedure EPP-117. The licensee's actions have adequately resolved the NRC's concerns in this area.

(Closed) Open Item (445/8833-45): Confirm Methods for Sampling of Liquid Wastes During A Drill - This item was previously discussed in NRC Inspection Reports 50-445/83-33 and 50-445/84-43, and involved the need for the licensee to evaluate the sampling of liquid radwaste tanks following a reactor accident. The licensee had performed an evaluation of the doses that would be incurred by plant staff personnel and addressed postaccident sampling precautions in applicable procedures (CHM-517 and EPP-117). The licensee's actions adequately resolve the NRC's concerns in this area and confirmation during a drill scenario will not be necessary since these systems would be inaccessible following a major reactor accident.

(Closed) Open Item (445/8314-06): Solid Radwaste Management - This item was previously discussed in NRC Inspection Reports 50-445/83-14, 50-445/84-23, 50-445/84-42, and 50-445/85-05, and involved the licensee's completion of solid radwaste processing system preoperational testing of auxiliary connections for vendor provided processing equipment. All aspects of this open item have been resolved by the licensee except for: (1) NRC approval of the Process Control Program; and (2) the development, fabrication, installation, and testing of the spent resin sampling device that will be part of the system used for transfer of resin to vendor supplied processing equipment. These remaining concerns will be identified and tracked via a new open item number. These concerns are discussed in paragraph 10 of this report.

3. Open Items

An open item is a matter that requires further review and evaluation by the NRC inspector or licensee. Open items are used to document, track, and ensure adequate followup on matters of concern to the NRC inspector. The following open items were discussed with the licensee during the exit

interview on May 5, 1989. These open items are applicable to both CPSES units. Unit 2 items will be used for future Unit 2 inspection preparation purposes.

Open Item	Description	Paragraph
445/8929-01; 446/8929-01	Radwaste Organizations	6
445/8929-02; 446/8929-02	Liquid Radwaste System	8
445/8929-03; 446/8929-03	Gaseous Radwaste System	9
445/8929-04; 446/8929-04	Solid Radwaste System	10
445/8929-05; 446/8929-05	Air Cleaning Systems	11
445/8929-06; 446/8929-06	Radiation Monitoring Systems	12
445/8929-07; 446/8929-07	Audits and Surveillances	13

4. NRC Inspector Observations

The following is an observation the NRC inspector discussed with the licensee during the inspection and at the exit interview on May 5, 1989. This observation is not a violation, deviation, unresolved item, or open item. This observation was identified for licensee consideration for program improvement, and the observation has no specific regulatory requirements. The licensee stated that the observation is currently under evaluation.

Onsite Space for Solid Radwaste Storage - There does not appear to be adequate space for long term storage of large processed waste container, such as dewatered and solidified resin liners and their shielding.

5. Background

The licensee's solid, liquid, and gaseous radwaste systems were extensively examined and evaluated by the NRC inspector using Final Safety Analysis Report (FSAR) commitments and industry standards during the period March 1983 through March 1985. The following NRC inspection reports and memorandum were used in preparation for this inspection: 50-445/83-14 (all), 50-445/83-16 (paragraph 15), 50-445/83-31 (all), 50-445/83-35 (paragraphs 15 and 17), 50-445/84-02 (paragraph 11),

50-445/84-04 (all), 50-445/84-23 (all), 50-445/84-25 (paragraphs 2 and 3), 50-445/84-42 (all), 50-445/84-43 (all), 50-445/85-01 (all), and 50-445/85-05 (all); and Memorandum For Docket File 50-445 and 50-446, from H. Chaney to Docket File, Subject: Meeting Between CPSES Representatives and NRC Region IV Personnel Concerning NUREG-0737 Action Items, dated July 20, 1984. In 1985, the licensee had, for the most part, satisfied all of the NRC Region IV concerns regarding the construction and preoperational testing of solid, liquid, and gaseous radwaste systems, as well as most NUREG-0737 Action Items.

6. Radioactive Waste Management Organization

The NRC inspector reviewed the licensee's onsite organization involved in radwaste management to determine agreement with commitments in Sections 11 and 13 of the FSAR.

The licensee has inplace two groups of personnel that implement the CPSES radwaste program. One group within the operations department is relatively new and not fully staffed at the time of this inspection. This group will be responsible for operation of plant solid, liquid, and gaseous processing equipment, and will be comprised of a Radwaste Supervisor and a staff of approximately six to ten specially trained nonlicensed AOs. Only the supervisor of this group has been assigned and selection of the AOs is ongoing. The other group is within the RP department and is fully staffed. This group will be responsible for implementation of 10 CFR Parts 20.311 and 61 related activities, all packaging/vendor processing of radwaste, effluent releases, and RAM transportation activities. The NRC inspector examined position descriptions for key functions.

CPSES site personnel are supported by a professional staff of health physicists and engineers at the offsite corporate offices in Dallas, Texas. Currently, a corporate staff member visits the site weekly or more often.

The NRC inspector examined senior management policies, program documentation, and implementing procedures and found them to be of sufficient detail and possessing adequate quality and radiological controls to ensure compliance with TS and NRC and Department of Transportation requirements.

This area will be considered an open item (445/8929-01; 446/8929-01) pending licensee completion of:

- The organizing and staffing of the operations-radwaste group.
- Implementation of group specific instructions on responsibilities and duties.

No violations or deviations were identified.

7. Training and Qualifications

The NRC inspector examined the licensee's program for qualification and training of personnel responsible for implementation of the CPSES radwaste program to determine agreement with commitments in Section 13 of the FSAR, and the requirements of NRC Inspection and Enforcement Bulletin No. 79-19.

The licensee had implemented a health physics qualification course (TRA-301) and an AO qualification course (Section 11 of TRA-202). Position descriptions for supervisors and managers have been developed and appear to accurately reflect functional duties.

HP technicians assigned to radwaste operations will or have received special training and qualifications in solid radwaste management, processing, and transportation requirements. This training and qualification satisfies the requirements of NRC Inspection and Enforcement Bulletin No. 79-19.

Currently, a sufficient number of AOs (49) have been qualified under the standard AO nonlicensed operator qualification program and are available to support initial operations of Unit 1. The licensee has prepared a special training and qualification program for AOs that will be permanently assigned to radwaste operations. This training program and others (HP, licensed operator, etc.) are scheduled to be submitted in December 1989 for peer review and national accreditation.

No violations or deviations were identified.

8. Liquid Radioactive Waste System

The NRC inspector examined the licensee's liquid radwaste system (Channels A, B, and C; reactor coolant drain tanks; effluent release; and the boron recycle system) to determine agreement with descriptions and commitments contained in Section 11 of the FSAR. This system will be common to both Units 1 and 2.

The NRC inspector discussed with licensee representatives liquid system flow paths, process and effluent monitor locations, and current modifications to the liquid radwaste system. These modifications are to improve spent resin transfer and collection, provide attachment points for a 50-gallon per minute vendor supplied (leased) filter and demineralization system, and improve the reliability of the boron recycle evaporator package. Currently, construction is still ongoing for certain modifications, and schedules indicate that all preoperational testing verification via the System Functional Test Program (SFT) (licensee Procedures STA-808A and 809A) should be completed by August 31, 1989.

The NRC inspector examined the licensee's proposed procedures for the control and monitoring of liquid effluent releases. Liquid waste tank recirculation times and sampling instructions (CHM-517) were reviewed. The licensee had purchased special simulated liquid calibration sources for performance of a full range calibration of the liquid effluent

monitor. This resolves the NRC's concerns raised in NRC Inspection Report 50-445/84-23 about confirming the vendors primary calibration of the instrument.

This area will be considered an open item (445/8928-02; 446/8929-02) pending licensee completion of the following system tests and approval of the test results by the Joint Test Group (JTG):

- 1CP-PT-41-01 SFT, Liquid Waste Processing System Channel "B"
- 1CP-PT-41-02 SFT, Waste Evaporator/Liquid Waste Processing System Channel "A"
- 1CP-PT-41-04 SFT, Reactor Coolant Drain Tank Subsystem
- 1CP-PT-56-01 SFT, Boron Recycle System
- Spent Resin Transfer and Collection System

No violations or deviations were identified in this area.

9. Gaseous Radioactive Waste System

The NRC inspector examined the licensee's gaseous radwaste system (processing, storage, and effluent release systems) to determine agreement with descriptions and commitments contained in Section 11 of the FSAR. This system will be common to both Units 1 and 2.

The NRC inspector discussed with the licensee the current state of the radwaste gas collection, processing, and storage system flow paths, process equipment, and effluent release monitoring components. Currently, the licensee is developing a test matrix for completing Preoperational Test Verification 1CP-PT-61-01 SFT, which is scheduled for completion on or about July 28, 1989. The licensee is developing calibration procedures for the full range calibration of gaseous effluent monitors during the first refueling outage or calibration cycle of the monitors.

This area will be considered an open item (445/8929-03; 446/8929-03) pending licensee completion of:

- Preoperational testing (1CP-PT-61-01 SFT) of gaseous radwaste system.
- Development of full range calibration procedures for gaseous effluent monitors.

No violations or deviations were identified.

10. Solid Radioactive Waste System

The NRC inspector reviewed the licensee's solid radwaste system to determine agreement with the commitments in Section 11 of the FSAR. This system will be common to both Units 1 and 2.

The NRC inspector reverified that the licensee would not be using their installed solid radwaste compaction and solidification systems, and would be relying on offsite vendor supplied volume reduction programs and onsite provided solidification/dewatering processes. The licensee's Process Control Program for radwaste processing is currently under review by the NRC.

The licensee is currently modifying the resin transfer system piping to ensure sufficient flow is present to prevent solidification or stratification of resins during transfers. The licensee has not installed a sampling system for sampling resins being transferred to a vendor's processing system. The NRC inspector discussed with licensee representatives the need to test any spent resin sampling device to ensure that resin sampling can be performed in a radiologically safe manner. Flushing of resin transfer hoses has been addressed by the licensee in the design of the system.

This area will be considered an open item (445/8929-04; 446/8929-04) pending licensee completion of:

- Spent resin transfer system modification and testing.
- Installation and testing of a spent resin sampling device.
- Receiving approval for use of the CPSES radwaste Process Control Program.

No violations or deviations were identified.

11. Air Cleaning Systems

The NRC inspector discussed with licensee representatives the current status of preoperational testing of air cleaning systems for the Control Room, Primary Plant Ventilation System, Containment Pre-Access Filtration System, and the Containment Hydrogen Purge Filtration System. The licensee's representatives stated that the adsorber medium would be replaced in all systems and fresh adsorber (charcoal) would be subjected to inplace testing, as would the high efficiency filters. Preoperational testing and inspections are being scheduled to minimize filter/adsorber contamination due to construction and painting activities.

The licensee is currently balancing Unit 1 spaces in preparation for system testing and qualification.

This will be considered an open item (445/8929-05; 446/8929-05) pending licensee:

- Implementation of preoperational testing and NRC review of the results.

- Completion of Unit 1 ventilation and filtration system balancing.

No violations or deviations were identified.

12. Radiation Monitoring Instrumentation

The NRC inspector reviewed the licensee's inplant radiation monitoring system (DRMS) for agreement with commitments in Sections 11 and 12 of the FSAR, and the requirements of NUREG-0737.

The licensee has completed calibration of all area radiation monitors, main steam line monitors, containment high range radiation monitors, and 12 out of 18 liquid process and effluent monitors. Ventilation system monitors (5) still require calibration. The preoperational test procedures (CP-PT-7001 and 7002) for the DRMS are in final stage of JTG review. Preoperational testing is scheduled to begin on or about June 4, 1989.

This area will be considered an open item (445/8929-06; 446/8929-06) pending licensee:

- Completion of instrument calibrations.

- Completion of functional testing of the DRMS.

- Finalizing of DRMS setpoints and establishing administrative control over the DRMS.

No violations or deviations were identified.

13. Audits and Reviews

The NRC inspector reviewed the staffing, auditor qualifications, audit and surveillance implementing procedures, results of HP/RP audits, audit/surveillance checklists, procedure compliance data base (cross reference of surveillances by procedure) for developing audits, and licensee's program for tracking and closure of audit/surveillance findings.

The licensee's audit and surveillance program is well documented, staffed with qualified personnel, and has developed and implemented performance based surveillances and audits of licensee activities. The QA audit of the RP program (TUG-88-12) was effective in identifying two deficient conditions of a minor nature. This audit was comprehensive

and verified the licensee's compliance with implementing procedures and NRC regulations. The licensee had not initiated an audit of the radwaste program. An audit of the HP and operations department's activities concerning radwaste and RAM transportation is scheduled to be completed prior to fuel load.

This area will be considered an open item (445/8929-07; 446/8929-07) pending licensee:

- Completion of a comprehensive compliance audit of the radwaste program.

No violations or deviations were identified.

14. Exit Interview

The NRC inspector met with licensee representatives identified in paragraph 1 at the conclusion of the inspection on May 5, 1989. The NRC inspector stated that actions had been completed to resolve some old open items in the radwaste area and that the remaining item and new items should be completed prior to issuance of an operating licensee unless otherwise indicated in the report.