



**TXU**

---

**TXU Electric**  
**Comanche Peak**  
**Steam Electric Station**  
P.O. Box 1002  
Glen Rose, TX 76043  
Tel: 254 897 8920  
Fax: 254 897 6652  
lance.terry@txu.com

**C. Lance Terry**  
Senior Vice President & Principal Nuclear Officer

Ref: 10 CFR 2.201

CPSES-20020174  
Log # TXX-02016  
File # 10130

January 18, 2002

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555

**SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)  
DOCKET NOS. 50-445 AND 50-446; LICENSEE RESPONSE TO  
POTENTIAL SAFETY SIGNIFICANT INSPECTION FINDING**

- REF:**
1. COMANCHE PEAK STEAM ELECTRIC STATION, UNITS 1 AND 2 - NRC INSPECTION REPORT 50-445/01-07; 50-446-01-07
  2. NRC NOTICE OF LICENSEE MEETING from Arthur Howell III, dated January 3, 2002.

Gentlemen:

The above referenced inspection report identified one potentially safety significant finding in the Public Radiation Safety cornerstone area at the Comanche Peak Steam Electric Station (CPSES). This finding has been preliminarily determined to be WHITE, awaiting the results of the January 23, 2002 regulatory conference as announced by reference 2.

As encouraged by the inspection report in the interest of efficiency, this letter provides our evaluation of the issue(s) under consideration and presents our response to the NRC's evaluation. Enclosure 1 provides a brief timeline showing the events leading to this finding and a summary of the corrective actions taken in response to these events. Enclosure 2 provides a detailed licensee response to specific citations contained within the inspection report.

CPSES management acknowledges that the radiation monitoring issues discussed in your inspection report occurred and agrees that these occurrences are inconsistent with our management expectations.

D029

CPSES does not believe that any of the individual items discussed in your inspection report represent an actual or credible impact on safety, and therefore each of these items would screen out as a minor violation, not to be discussed in an inspection report. CPSES notes that if each item screens out as a minor violation, the NRC's Significance Determination Process (SDP) would never be entered and there would not be a white finding.

CPSES believes that a significant factor in maintaining our monitoring program in a manner that limits any breach of our Radiation Control Area (RCA), is our ongoing commitment to documenting and dealing with items in our Corrective Action Program at a very low threshold. In this case the Defense-In-Depth aspects of our program did result in the discovery of each of these items. Several of these items were actually discovered as a result of enhancements made to our program as a consequence of previous corrective actions.

CPSES management firmly believes that contrary to the inspection report, the adverse performance trend relating to inadvertent releases of radioactive materials from the Radiologically Controlled Area (RCA) was identified by the Radiation Protection (RP) Department and is being properly addressed through our corrective action. Corrective actions taken because of these incidents have resulted in a reduction of the recurrence of similar events and are expected to continue to prevent future events.

We look forward to discussing these issues and the basis for our conclusions at the Regulatory Conference.

Sincerely,

TXU Generation Company LP

By: TXU Generation Management Company LLC,  
Its General Partner



C. L. Terry  
Senior Vice President and Principal Nuclear Officer

RJK:rjk  
Enclosures

c - E. W. Merschoff, Region IV  
C. E. Johnson, Region IV  
A.T. Gody, Region IV  
D. H. Jaffe, NRR  
Resident Inspectors, CPSES

## **Comanche Peak Radioactive Material Control History**

### **1999:**

In the first 6 months of 1999, which included refueling outage 2RF04, there were 17 corrective action documents (SmartForms) generated which indicated an adverse trend in radiation worker practices. Three of these events (SmartForms 1999-738, 926, 1132) were protective clothing glove liners found outside the Radiologically Controlled Area (RCA). These events resulted in Radiation Protection (RP) Department initiating searches of all dirty modesty clothing prior to laundering.

Based on this observed trend, RP and Nuclear Overview (NOD) Departments performed a combined assessment of radiation worker practices during refueling outage 1RF07 in the fall of 1999. During this period, an additional 14 SmartForms were generated regarding radiation worker practices, 3 of which were protective clothing glove liners found outside the RCA (SmartForms 1999-2679, 2782, 2929). This evaluation confirmed that Radworker practices did not meet management expectations and documented the conclusion that while RP Department was taking adequate actions on individual issues, site-wide actions were limited. This evaluation was documented by NOD evaluation EVAL-1999-043 and SmartForm 1999-3100 was generated to track corrective actions.

### **2000:**

In 2000, there was no spring refueling outage and 2 SmartForms were written on radiation worker practices, both of which were radioactive materials outside the RCA. SmartForm 2000-187 was another protective clothing glove liner and SmartForm 2000-1080 was a safety harness. Since it was most likely that the glove liners were leaving the RCA in modesty clothing pockets, modesty clothing without pockets were ordered in the summer of 2000 (implemented in January of 2001).

In June of 2000, INPO performed a scheduled E&A visit. Prior to this visit, CPSES identified to the E&A team the issue of radiation worker practices as an area for improvement. The INPO E&A team confirmed this assessment. Since SmartForm 1999-3100 was already open to track corrective actions on this issue, no new SmartForm was generated.

In the fall of 2000, RP and NOD performed a followup assessment of radiation worker practices during refueling outage 2RF05. This evaluation also included an assessment of the corrective actions taken in response to SmartForm 1999-3100. During this outage there were 20 SmartForms related to radiation worker practices, 7 of which were low-level radioactive materials outside the RCA. SmartForms 2000-2445, 2643, 2656, 2860, and 3122 were protective clothing glove liners, while SmartForm 2000-2380 was an extension cord located at the Cold Tool Room and SmartForm 2000-2740 was oily rags located in a trash dumpster. This combined assessment was documented by NOD Evaluation Eval-2000-043 and SmartForm 2000-3185 was generated to track corrective actions.

Since reusable glove liners were by far the most frequent instance of the inadvertent release of low-level radioactive materials, disposable glove liners were ordered to replace the reusable ones then in use. In the period since these disposable glove liners have been placed in use, only 1 further instance has been found of a glove liner being found outside the RCA. In this instance, the old-style reusable glove liner was discovered when cleaning out an abandoned personal locker that had not been used in a number of years.

**2001:**

During the spring refueling outage 1RF08, twenty SmartForms were generated concerning radiation worker practices. Five of these incidents were low-level radioactive materials found outside the RCA. SmartForm 2001-0630 (Chicago air fitting) was determined to be due to an inadequate survey performed at the Warehouse "C" RCA, and was elevated to a Level 3 priority to address release practices from this location. SmartForms 2001-0850 and 0968 were Velcro straps (normally used with protective clothing), SmartForm 2001-1069 was leather work gloves, and SmartForm 2001-1352 was channel lock pliers from the Cold Tool Room.

In addition, during 1RF08 NOD performed a follow-up evaluation of radiation worker practices, which noted improvements in both radiation work practices and in the control of releases of radioactive materials. No further items of improvement were noted by this evaluation (NOD EVAL-2001-013).

To address concerns of radioactive materials being improperly released from the Warehouse C RCA, CPSES undertook a remodeling of the access and egress areas to this RCA, including the installation of the shielding necessary to allow operation of a highly sensitive SAM-9 monitor. This facility enhancement was completed during November of 2001.

In the Fall of 2001, during the annual NOD RP assessment (EVAL-2001-039), an item for improvement was generated relating to the RP corrective action program. SmartForm 2001-2186 was issued to track this item. The evaluation specifically noted that while actions were being taken in response to issues identified, these actions were not always documented on the individual event SmartForms. In response to this improvement item, RP modified its practice of assigning SmartForms to individual Supervisors and centralized its management of the corrective action program under the Health Physics Supervisor. This individual currently performs monthly and quarterly tracking of departmental and station Radiation Protection Program performance, and has the resources to more effectively develop and implement corrective actions outside the department.

In response to NRC Inspection Report 50-445/01-04; 50-446/01-04, the RP Department issued SmartForm 2001-2621 to capture 2 violations related to the improper release of radioactive materials that were identified. A multi-disciplinary task team has been formed to perform a root-cause analysis of the factors leading to these issues and to recommend additional corrective actions as necessary to prevent recurrence.

## **Licensee evaluation of potential WHITE finding**

### **1. NRC Inspection Report 01-07, section 4OA2.a.(2):**

“The team identified one isolated example associated with inadvertent releases of radioactive material from the radiologically controlled area where an adverse performance trend had not been identified and corrected by the department manager.”

### **Licensee Response:**

CPSES Radiation Protection (RP) Department management did identify an adverse performance trend related to inadvertent releases of radioactive materials from the Radiologically Controlled Area (RCA) starting in 1999. This trend was identified in 1999 and evaluated to be a part of an emerging problem related to radiation worker performance. This identification can be evidenced by the following documents:

- 4<sup>th</sup> Quarter 1999 RP Program Health Report
- Combined RP/Nuclear Overview evaluation 1999-043; “Radworker Practices”
- Programmatic SmartForms from Nuclear Overview Department (NOD) Evaluations
  - 1999-3100
  - 2000-2266
  - 2000-3185
  - 2001-2186

In each instance, the corrective actions that were taken consisted of both immediate actions to restore compliance (e.g.; returning the article to the RCA and followup verification surveys), and longer-term corrective actions designed to address the underlying causes of the instance and identify needed programmatic changes as necessary. These longer-term actions were often captured by a separate corrective action document (SmartForms listed above) to ensure actions taken for different events were coordinated and could be reasonably expected to prevent recurrence of future events.

2. **NRC Inspection Report 01-07, section 4OA2.c.(2):**

"The team found that corrective actions, associated with ... and 11 examples of a radiation protection violation, described below, were not adequate or timely to prevent a similar occurrence."

**Licensee Response:**

CPSES management believes that the corrective actions taken in response to these procedural violations have been both effective and timely. The fact that the violations recurred is not necessarily indicative of inadequate corrective actions, as many of these corrective actions involved long-term training and human performance enhancements. Resolving these types of problems was further complicated by the need to direct many of these actions to a transient refueling outage workforce. Many of these workers are only available before and during refueling outages, necessitating holding open some corrective action documents until these long-term actions can be fully implemented and evaluated.

CPSES management also believes that the NRC inspectors did not review or give the RP department credit for all aspects of its corrective action program during the inspection. Many of the corrective actions taken in response to these events have been captured on separate SmartForms, written in accordance with the station's corrective action program specifically to capture the observed negative trends in performance. These SmartForms include 1999-3100, 2000-2266, 2000-3185, 2001-2186, and 2001-2621.

Additionally, some of the programmatic changes initiated by the RP Department were completed or documented by processes not directly related to the SmartForm process. These include:

- RP Shift Orders; used to communicate RP Management expectations to the technicians
- Program Health; used as a status indicator of the performance of station programs and to focus attention and resources on programs that do not meet performance goals

3. **NRC Inspection Report 01-07, section 4OA2.c.(2):**

"The events were more than minor because the failure to properly survey radioactive material has a credible impact on safety. In that, an inadvertent release of radioactive material and an unplanned exposure could occur to occupational workers and members of the public. Additionally, these issues involved occurrences in the licensee's radioactive material control program that were contrary to licensee procedures."

**Licensee Response:**

CPSES management believes that all of these events are examples of minor violations, that should not require capture in the inspection report. The levels of contamination on these items were very low, usually below the required lower level of detection of most of our instrumentation. If our program had not been previously enhanced by the use of highly sensitive monitors (such as the SAM-9), but instead relied on hand friskers only, most of these items could have been appropriately released from the RCA. The fact that CPSES staff were able to self-identify many of these items only through the use of instrumentation that goes beyond current regulatory guidance should not expose our program to a higher standard than the rest of the industry.

In addition, the amount of activity present in each of these items does not present an actual or credible impact on safety. A conservative estimation of the dose that could have been received by members of the public from all of these 11 events combined is 0.0043 mrem. This dose level is an extremely small fraction of the public dose limit.

**4. NRC Inspection Report 01-07, section 4OA2.c.(2):**

“Using the public radiation safety significance determination process, the NRC preliminarily determined that the finding was of low to moderate risk significance (White) because, although none of the material was released from the owner controlled area and the potential public exposure associated with each item was less than 5 millirem, there were more than five events.”

**Licensee Response:**

CPSES management believes that if any of these events are determined to be “more than minor”, then the final safety significance of the finding should be characterized as GREEN. The objective of the Radioactive Material Control SDP of IMC0609 D is *“It assesses the licensee’s ability to prevent the inadvertent release of licensed radioactive material to an unrestricted area that can cause a radiation dose to members of the public.”* As stated in the current inspection finding, none of these events resulted in a release of radioactive materials outside our owner-controlled area. The CPSES Offsite Dose Calculation Manual (ODCM) describes an unrestricted area as any area beyond the site boundary. In fact, only 3 of these events resulted in a potential for the release of radioactive material outside of even our Protected Area.

By any reasonable standard, the Protected Area at CPSES meets the 10 CFR 20 definition of a “Controlled Area”, not that of an “Unrestricted Area”. Guidance for this designation has been found in NUREG/CR-6204, Q&A-26. Further guidance was taken from SECY-95-140, which retained the distinction between a “Controlled Area” and an “Unrestricted Area” in 10 CFR 20.

Since there were not greater than 5 events consisting of a release of materials to an unrestricted area, the final safety significance of this finding should be determined to be GREEN.