



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064**

June 19, 2000

Mr. C. L. Terry
TXU Electric
Senior Vice President & Principal Nuclear Officer
ATTN: Regulatory Affairs Department
P.O. Box 1002
Glen Rose, Texas 76043

**SUBJECT: NRC INSPECTION REPORT NO. 50-445/00-03; 50-446/00-03 FOR COMANCHE
PEAK STEAM ELECTRIC STATION, UNITS 1 AND 2**

Dear Mr. Terry:

On May 20, 2000, the NRC completed an inspection at the Comanche Peak Steam Electric Station, Units 1 and 2, facility. The enclosed report presents the results of the inspection. The results of this inspection were discussed with Messrs. Blevins and Kelly and other members of your staff.

The inspection was an examination of activities conducted under your license as they relate to safety and to compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, two violations of NRC requirements were identified. These issues have been evaluated under the risk significance determination process and determined to be of very low risk significance (Green), and have been entered into your corrective action process. Because of the very low risk significance, these violations will not be cited. If you contest these noncited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region IV; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Senior Resident Inspector at the Comanche Peak Steam Electric Station facility.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room

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or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Joseph I. Tapia
Project Branch A
Division of Reactor Projects

Docket Nos.: 50-445
 50-446
License Nos.: NPF-87
 NPF-89

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NRC Inspection Report No.
50-445/00-03; 50-446/00-03

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket Nos.: 50-445
50-446

License Nos.: NPF-87
NPF-89

Report No.: 50-445/00-03
50-446/00-03

Licensee: TXU Electric

Facility: Comanche Peak Steam Electric Station, Units 1 and 2

Location: FM-56
Glen Rose, Texas

Dates: April 2 through May 20, 2000

Inspectors: A. Gody, Senior Resident Inspector
S. Schwind, Resident Inspector
D. Carter, Health Physicist
R. W. Deese, Reactor Inspector
P. Elkmann, Emergency Preparedness Inspector
J. Blair Nicholas, PH.D., Senior Health Physicist
M. F. Runyan, Senior Reactor Inspector

Approved By: Joseph I. Tapia, Chief, Project Branch A

ATTACHMENTS:

Attachment 1: Supplemental Information

Attachment 2: NRC's Revised Reactor Oversight Process

SUMMARY OF FINDINGS

Comanche Peak Steam Electric Station NRC Inspection Report 50-445/00-03;50-446/00-03

This integrated inspection report covers a 7-week period of resident inspection and announced inspections by regional engineering, emergency preparedness, and radiation specialist inspectors.

Cornerstone: Mitigating Systems

- Green. The inspectors identified that a calculation for all safety-related air accumulators did not properly account for air usage during a design basis mission. The calculation did not account for dynamic air consumption rates for the system and was therefore nonconservative. Failure to properly incorporate design basis information into station calculations was a violation of 10 CFR Part 50, Appendix B, Criterion III. This violation is being treated as a noncited violation in accordance with Section VI.A on the NRC Enforcement Policy and is in the licensee's corrective action program as Smart Form SMF-2000-0001232-00 (Section 1R19).

This issue was characterized as a green finding using the significance determination process. It was determined to have very low risk significance because the nonconservative values had not been incorporated into station procedures and the operability of safety-related equipment was not affected.

Cornerstone: Public Radiation Safety

- Green. The licensee identified that on March 23, 1999, a nonroutine gaseous release was initiated from the Unit 2 volume control tank prior to performing a source check on the primary plant ventilation noble gas release rate monitor. The inspectors identified another incident on September 28, 1999, in which the licensee performed a nonroutine gaseous batch release from the Unit 1 volume control tank prior to performing a source check to verify proper operation of the primary plant ventilation noble gas release rate monitor. The failure to perform the source check on the effluent monitors could have resulted in a radioactive gaseous release to the environment which was not properly monitored by an operable radiation monitor. The licensee's failure to perform source checks on the primary plant ventilation noble gas release rate monitors prior to initiating the gaseous batch releases from the volume control tanks was a violation of Technical Specification 5.5.1. This violation is being treated as a noncited violation consistent with Section VI.A.1 of the NRC Enforcement Policy and is in the licensee's corrective action program as Smart Form SMF-2000-001412-00 (Section 2PS1).

This issue was characterized as a green finding using the public radiation safety significance determination process. It was determined to have very low risk significance because the incident did not impair the licensee's ability to assess dose, and the calculated dose to the public as a result of the two gaseous releases was less than 1.0 percent of 10 CFR Part 50, Appendix I limits.

- Green. The details surrounding the March 23, 1999, nonroutine release were in the licensee's corrective action program as Smart Form SMF-1999-000671-00. Corrective actions were completed, and Smart Form SMF-1999-000671-00 was closed on August 24, 1999. However, on September 28, 1999, the licensee again failed to source check the effluent radiation monitor prior to initiating a nonroutine gaseous batch release. Therefore, the inspectors concluded that the corrective actions were ineffective in preventing a second occurrence (Section 2PS1).

This issue was characterized as a green finding because the significance of the related technical issue was green.

Report Details

Summary of Plant Status

Both units operated at approximately 100 percent power for the entire report period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope

The inspectors reviewed the licensee's administrative procedure and abnormal operating procedure dealing with adverse weather preparations to determine if adequate measures had been completed or contingency plans were in place to deal with severe thunderstorms, tornados, and high ambient temperatures experienced at the site during the spring and summer months. The inspectors also toured portions of the protected area to assess the risk of wind generated missiles impacting plant equipment.

The inspector reviewed the following documents during this inspection:

- Operations Procedure ABN-907, "Acts of Nature," Revision 9
- Station Procedure STA-634, "Extreme Temperature Equipment Protection Program," Revision 3

b. Findings

There were no findings identified.

1R02 Evaluation of Changes, Tests, or Experiments (71111.02)

a. Inspection Scope

The inspectors evaluated the licensee's program for making changes to license conditions and the Updated Final Safety Analysis Report in order to verify that changes were properly evaluated to determine that no unreviewed safety questions existed. The inspectors reviewed ten 10 CFR 50.59 safety evaluations, fifteen 10 CFR 50.59 screening documents, and the supporting analyses and calculations. The specific documents reviewed are listed in the attachment to this report.

The inspectors also evaluated the effectiveness of the licensee's problem identification and resolution process to identify and correct problems concerning the performance of 10 CFR 50.59 safety evaluations and screens. In this effort, the inspectors reviewed all corrective action program SmartForms generated since the licensee's last 10 CFR 50.59 inspection conducted by the NRC and the subsequent corrective actions

pertaining to licensee-identified problems and errors in the performance of 10 CFR 50.59 safety evaluations and screens. The specific SmartForms reviewed are listed in the attachment to this report.

b. Findings

There were no findings identified.

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

The inspectors conducted partial inspections of the following risk-significant systems to verify that they were in their proper standby alignment. In addition, the inspectors evaluated the effectiveness of the licensee's problem identification and resolution program in resolving issues which could increase event initiation frequency or impact mitigation system availability.

- Unit 2, Train B emergency diesel generator
- Unit 1, Train B motor-driven auxiliary feedwater pump
- Unit 1, turbine-driven auxiliary feedwater pump
- Unit 2, Train A containment spray system

The following documents were reviewed by the inspectors during this inspection:

- Operations Procedure SOP-609B, "Diesel Generator System," Revision 8
- Operations Procedure SOP-610B, "Diesel Generator Fuel Oil and Transfer System," Revision 3
- Operations Procedure SOP-809B, "Diesel Generator Rooms Ventilation System," Revision 5
- Operations Procedure SOP-304A, "Auxiliary Feedwater System," Revision 14
- Operations Procedure SOP-204B, "Containment Spray System," Revision 4

b. Findings

There were no findings identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope

The inspectors toured the following areas to assess the licensee's control of transient combustible materials, the material condition and lineup of fire detection and

suppression systems, and the material condition of manual fire equipment and passive fire barriers and evaluated the effectiveness of compensatory measures for degraded equipment:

- Units 1 and 2 station service water intake structure
- Unit 1 cable spreading room
- Unit 2 Train A electrical equipment room
- Unit 2 Trains A and B emergency diesel generator air compressor rooms

The following documents were reviewed by the inspectors during this inspection:

- Smart Forms SMF-2000-000099, SMF-2000-000402, SMF-2000-000449, SMF-2000-000773
- Station Procedure STA-729, "Control of Transient Combustibles, Ignition Sources and Fire Watches," Revision 7
- Station Procedure STA-738, "Fire Protection Systems/Equipment Impairments," Revision 6
- Comanche Peak Steam Electric Station Fire Protection Report, Revision 15

b. Findings

There were no findings identified.

1R11 Licensed Operator Requalification Program (71111.11)

a. Inspection Scope

The inspectors observed operator performance during a scenario in the control room simulator and attended the posttraining critique. Simulator observations concentrated on the conduct of operations, procedure usage, and command and control.

The following document was reviewed by the inspectors during this inspection:

- Simulator Exercise Guide L044.E01.XG1, "ECCS Operations"

b. Findings

There were no findings identified.

1R13 Emergent Work (71111.13)

a. Inspection Scope

The inspectors evaluated the effectiveness of the licensee's risk assessment for the following emergent at-power work:

- April 3, 2000, corrective maintenance on a failed lube oil pressure switch on Unit 2 Instrument Air Compressor 2-01 and repairs to a cracked weld on Instrument Air Dryer 2-02
- April 10, 2000, Unit 2 Electrohydraulic Control System Pump 2A motor lower bearing degraded lubrication from electrohydraulic fluid intrusion
- May 1, 2000, Unit 2 Solid State Protection System troubleshooting and repair following a failed surveillance test

When the need for emergent work was identified on risk-significant structures, systems, or components, the inspectors evaluated the licensee's actions to plan and control the resulting activities, including the acceptability of any necessary compensatory actions and contingency plans, when applicable. Documents reviewed during the inspection include:

- Work Order 4-00-130185-00, "Solid State Protection System Train A Input/Logic Cabinet 2-SP091A"
- Smart Forms SMF-1999-003398-00, SMF-2000-000879-00, SMF-2000-001005-00, and SMF-2000-001003-00
- Work Control Instruction WCI-203, "Weekly Surveillances/Work Scheduling," Revision 12

b. Findings

There were no findings identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors selected several operability evaluations conducted by the licensee during the report period involving risk-significant systems or components to review. The inspectors evaluated the technical adequacy of the licensee's operability determination, verified that appropriate compensatory measures were implemented, and verified that the licensee considered all other pre-existing conditions, as applicable. Additionally, the inspectors evaluated the adequacy of the licensee's problem identification and resolution program as it applied to operability evaluations. Specific operability evaluations reviewed are listed below.

- Quick Technical Evaluation 2000-001018-01-00, operability of Steam Generator Safety Valve 2MS-0024 due to a steam leak on the upstream valve flange
- Quick Technical Evaluation 2000-001142-01-00, operability of containment spray pump oil coolers due to a nonconforming condition associated with missing bulb extrusion devices

- Smart Form SMF 2000-001228-00, dropped tool in the Station Service Water Intake Structure

The following documents were reviewed by the inspectors during this inspection:

- Station Procedure STA-421, "Initiation and Processing of Smart Forms," Revision 8
- Comanche Peak Steam Electric Station Updated Final Safety Analysis Report
- Comanche Peak Steam Electric Station Technical Specifications
- Vendor letter from Sulzer Pumps, dated May 26, 2000, regarding containment spray pump operability associated with bulb extrusion device issue

b. Findings

There were no findings identified.

1R16 Operator Workarounds (71111.16)

a. Inspection Scope

The inspectors reviewed the licensee's list of identified operator workarounds and other previously identified degraded conditions on equipment not considered as operator workarounds to assess their cumulative effects on the ability of operators to respond to plant transients.

The following documents were reviewed by the inspectors during this inspection:

- Operation's Work Around List
- Operations Guideline No. 36, "Operator Work-Arounds (WAL)," January 12, 1999
- Smart Form SMF-2000-000561-00, 1-HV-8220 giving false position indication to the control room

b. Findings

There were no findings identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors witnessed or reviewed the results of postmaintenance testing for the following maintenance activities:

- Replacement of Accumulator 1-HV-2460 Check Valves 1-AF-0226 and 1-AF-0227
- Unit 1, Train A safety chiller component cooling water return valve air operator elastomer replacement.
- Unit 2, Train B containment spray system maintenance

In each case, the associated work orders and test procedures were reviewed to determine the scope of the maintenance activity and determine if the test adequately tested components affected by the maintenance. The Updated Final Safety Analysis Report, Design Basis Documents, and selected calculations were also reviewed to determine the adequacy of the acceptance criteria listed in the test procedures. The inspectors reviewed the following documents during this inspection:

- Calculation ME-CA-0000-3342, Revision 0, including Change Notices 001, 002, and 003
- Calculation 16345/6-IC-(B)-064, Revision 1, including Change Notice 001
- Calculation 16345/6-IC-(B)-002, Revision 4, including Change Notice 001
- Engineering Procedure ECE 5.03, "Calculations," Revision 4, including Engineering Document Change Notices 01, 02, 03, and, 04
- Operation Testing Manual Procedure OPT-603A, "TDAFW [Turbine-Driven Auxiliary Feedwater] Accumulator check Valve Leak Test," Revision 3
- Operation Testing Manual Procedure OPT-607A, "Safety Chiller CCW [Component Cooling Water] Test Accumulator Check Valve Test," Revision 2
- Operation Notification Evaluation (ONE) Form 95-830, "Accumulator Check Valve Leak Rates," dated August 22, 1995
- Technical Evaluation (TE) 95-226, "Accumulator Check Valve Leak Rates," dated August 18, 1995
- Work Order 3-98-335212-01, "Safety Chiller 1-05 Component Cooling Water Control Valve Air Operator"

- Maintenance Procedure MSM-CO-6604, "Fisher Diaphragm Actuator Maintenance (Type 657, Sizes 30-60)," Revision 3
- Design Document DBD-ME-229, "Component Cooling Water System," Revision 13

b. Findings

The inspectors found that Calculation ME-CA-0000-3342, Revision 0, including Change Notices 001, 002, and 003, failed to include dynamic air consumption rates for components within the pressure boundary of safety-related air accumulators. Calculation ME-CA-0000-3342, Revision 0, Change Notice 003, was completed on January 21, 1996, in part, to remove unnecessary conservatisms from air consumption values and to aid in establishing accumulator pressure drop test acceptance criterion. The licensee was informed of the incorrect assumptions and they conducted a review of all acceptance criterion for safety-related air accumulators. The licensee's review of the finding concluded that these criterion had not yet been used in any of the operations testing manual procedures which had been based on TE 95-226, "Accumulator Check Valve Leak Rates," dated August 18, 1995. Calculation ME-CA-0000-3342, Revision 0, Change Notice 003, had been implemented to formalize and support the engineering evaluation contained in TE 95-226. Had changes been made to the operations testing manual procedures using Calculation ME-CA-0000-3342, nonconservative acceptance criteria could have been used to determine equipment operability.

10 CFR Part 50, Appendix B, Criterion III, states, in part, that design control measures shall provide for verifying or checking the adequacy of design. Design changes, including field changes, shall be subject to design control measures commensurate with those applied to the original design. Accordingly, Engineering Procedure ECE 5-03, "Calculations," Section 6.1.3, indicates, in part, that calculations shall be prepared such that the design analysis is complete and addresses all applicable conditions such as operating modes, failure modes, sizing considerations, and interaction of systems. Contrary to these requirements, Calculation ME-CA-0000-3342, Revision 0, Change Notice 003, dated January 21, 1996, failed to include dynamic air consumption rates for components within the pressure boundary of a number of safety-related air accumulators. Had changes been made to the operations testing manual procedures using Calculation ME-CA-0000-3342, nonconservative acceptance criteria could have been used to determine equipment operability. This violation of 10 CFR Part 50, Appendix B, Criterion III, is being treated as a noncited violation consistent with Section VI.A of the NRC Enforcement Policy (NCV 50-445;446/200003-01). The issue was placed into the licensee's problem identification and resolution program as Smart Form SMF-2000-0001232-00. Because the errors contained in Calculation ME-CA-0000-3342, Revision 0, Change Notice 003, were not used in operations testing manual procedures, they did not result in an operational impact. However, these preapproved acceptance criteria could have been used in operations testing manual procedures which could have been used to conclude that safety-related equipment such as auxiliary feedwater system valves, safety chiller component cooling water valves, etc., were operable, when, in fact, they may not be. Additionally, the inspector concluded that the failure to include proper air consumption values for acceptance criteria was an additional

example of engineering quality issues identified in previous NRC Inspection Reports. The inspectors evaluated the issue using the significance determination process and concluded that the finding had very low risk significance (Green) because the errors in the calculation were not used in operations testing manual procedures and, therefore, did not result in any operational impact.

No other issues were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors evaluated the adequacy of periodic testing of important nuclear plant equipment, including aspects such as preconditioning; the impact of testing during plant operations; the adequacy of acceptance criteria including test frequency and test equipment accuracy, range, and calibration; procedure adherence; record keeping; the restoration of standby equipment; test failure evaluations; jumper control (if applicable); and the effectiveness of the licensee's problem identification and correction program. The following surveillance test activities were observed by the inspectors:

- Unit 2, Train A emergency diesel generator slow start
- Unit 1, Train A motor driven auxiliary feedwater pump test
- Unit 1, Train A and B emergency diesel generator simultaneous start
- Unit 2, Train B containment spray system test

The inspectors reviewed the following documents during the inspection:

- Operation Testing Manual Procedure OPT-214B, "Diesel Generator Operability Test," Revision 8
- Operation Testing Manual Procedure OPT-236A, "Simultaneous Start of Unit 1 Train A and B Diesel Generators," Revision 2
- Comanche Peak Technical Specifications
- Regulatory Guide 1.9, "Selection, Design, and Testing of Emergency Diesel Generator Units Used as Class 1E Onsite Electrical Power Systems at Nuclear Power Plants," Revision 3
- Operation Testing Manual Procedure OPT-206A, "AFW System," Revision 18
- Operation Testing Manual Procedure OPT 450A, "Train A Safeguards Slave Relay K640 Actuation Test," Revision 7

b. Findings

There were no findings identified.

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)

a. Inspection Scope

The inspectors performed an in-office review of changes to the licensee's emergency plan, Revision 29, submitted March 29, 2000, and of emergency action levels contained in Emergency Plan Implementing Procedure EPP-201, "Assessment of Emergency Action Levels, Emergency Classification and Plan Activation," Revision 11, submitted April 4, 2000, under the provisions of 10 CFR Part 50, Appendix E, Section V. The licensee had obtained prior approval from the Office of Nuclear Reactor Regulation for changes to the emergency action levels. The inspectors reviewed the emergency plan and emergency plan implementing procedure to determine whether they contained additional changes that were not reviewed and approved by the Office of Nuclear Reactor Regulation.

b. Findings

There were no findings identified.

2. RADIATION SAFETY

Cornerstone: Public Radiation Safety

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems (71122.01)

a. Inspection Scope

The inspectors interviewed members of the licensee's chemistry staff responsible for implementing the liquid and gaseous radioactive waste effluent program and the system engineers responsible for maintaining the safety-related ventilation systems. Additionally, the configuration and material condition of the liquid and gaseous radioactive waste collection and processing equipment and the filter housings for the control room emergency filtration/pressurization system and the primary plant ventilation system were inspected.

The inspectors observed the following activities:

- The collection of gaseous effluent samples from the north and south primary plant ventilation stack radiation monitors and the performance of radiochemistry analyses for airborne particulates, iodine, tritium, and noble gas
- The collection of gaseous effluent samples from the Unit 1 containment atmosphere; performance of the radiochemistry analyses for airborne particulates, iodine, tritium, and noble gas; and the preparation and performance of the containment vent batch release permit
- The collection of liquid effluent samples from plant effluent Tank 1; performance of the chemistry analysis for pH and radiochemistry analyses for principal

gamma radionuclides, including iodine-131 and dissolved and entrained noble gases; and the preparation and performance of the liquid radioactive waste effluent batch release permit

The inspectors reviewed the following items:

- Implementing procedures for the liquid and gaseous radioactive waste effluent program as described in the Offsite Dose Calculation Manual
- Six randomly selected batch radioactive liquid waste effluent release permits for discharges from the plant effluent tanks for the period of April 1999 through April 2000
- Randomly selected liquid waste effluent sample analyses of continuous release samples from the turbine building sumps, auxiliary building secondary effluents, and the low volume waste pond effluents for the period of April 1999 through April 2000
- Ten randomly selected batch radioactive gaseous waste effluent release permits for discharges from the waste gas storage tanks and containment vents and purges from Units 1 and 2 for the period of April 1999 through April 2000
- Randomly selected gaseous waste effluent sample analyses of continuous release samples from the north and south primary plant vents for the period of April 1999 through April 2000
- Compensatory sampling and analyses performed during effluent releases made while effluent radiation monitors were inoperable
- Offsite dose calculation methodologies and the dose results calculated from liquid and gaseous radioactive waste effluents released during the period of January 1999 through April 2000
- Calibration and quality control procedures and records for the chemistry counting room gamma analysis instrumentation, liquid scintillation counting systems, and gross alpha/beta proportional counting systems
- The chemistry laboratory's interlaboratory analysis comparison program performance during 1998
- Procedures and records of liquid and gaseous effluent radiation monitor checks and calibrations performed during the period of January 1999 through April 2000
- Calculation and installation of effluent radiation monitor alarm setpoints
- Revisions to the Offsite Dose Calculation Manual involving changes to the liquid and gaseous radioactive waste effluent program

- Records and results of the in-place filter testing of high efficiency particulate filters and charcoal adsorbers for the control room emergency filtration/pressurization system and the primary plant ventilation system
- Records and results of the laboratory tests performed on the charcoal adsorber material sampled from the control room emergency filtration/pressurization system and the primary plant ventilation system
- 1998 and 1999 Annual Radioactive Effluent Release Reports
- Quality assurance audit schedule for 2000
- Quality assurance audit report of the liquid and gaseous radioactive waste effluent program activities performed during the period January 1999 through April 2000
- Nuclear Procurement Issues Committee audits of the two contractor laboratories used to perform surveillance tests and sample analyses required by the radioactive waste effluent program and the engineered safety-related ventilation filter systems testing program
- Smart Forms involving the liquid and gaseous radioactive waste effluent program activities

b. Findings

Effluent Release

The licensee identified that on March 23, 1999, a nonroutine gaseous release from the Unit 2 volume control tank was initiated prior to performing a source check on the primary plant ventilation noble gas release rate monitor. The details of this were in the licensee's corrective action program as Smart Form SMF-1999-000671-00. During the review of a nonroutine batch release performed on September 28, 1999, the inspectors noted that the licensee performed a nonroutine gaseous batch release from the Unit 1 volume control tank prior to performing a source check on the primary plant ventilation noble gas release rate monitor. The monitor was determined to be operable during a subsequent source check.

The licensee's failure to perform a source check prior to initiating the gaseous batch releases from the volume control tanks was a violation of Technical Specification 5.5.1. Technical Specification 5.5.1 states, in part, that the Offsite Dose Calculation Manual shall be established, implemented, and maintained. Offsite Dose Calculation Manual Table 4.3-4, Section 2.a, requires, in part, that the primary plant ventilation noble gas release rate monitor be source checked prior to any gaseous batch release. The failure to perform the source check could have resulted in a radioactive gaseous effluent release to the environment through a release pathway which was not monitored by an operable radiation monitor.

This violation was processed through the Public Radiation Safety Significance Determination Process and was determined to have very low risk significance because the incidents did not impair the licensee's ability to assess dose (the monitor is not used in the calculation to assess dose) and the very low calculated dose to the public as a result of the two gaseous releases of less than 1.0 percent of 10 CFR Part 50, Appendix I, limits. This violation is being treated as a noncited violation consistent with Section VI.A.1 of the NRC Enforcement Policy and is in the licensee's corrective action program as Smart Form SMF-2000-001412-00 (50-445;-446/03-02).

Problem Identification and Resolution

The inspectors determined that the licensee typically identified appropriate and timely corrective actions to prevent recurrence of identified issues. However, the inspectors noted that the licensee completed corrective actions and closed Smart Form SMF-1999-000671-00 on August 24, 1999, to address the March 23, 1999, nonroutine release. Smart Form 1999-000671 included the development of a new form, RPI-704-5, "Non-Routine Release DRMS Set Point Data Sheet." This form included provisions for documenting radiation monitor source checks and setpoint adjustments for nonroutine releases. However, the corrective actions were included in Radiation Protection Instruction RPI-704, "Pre-Release Processing for Radioactive Effluent Releases." This procedure provided specific guidance to radiation protection technicians, who normally performed most effluent releases, but not to chemistry technicians, who initiated the nonroutine gaseous releases from the volume control tanks following the guidance in Chemistry Instruction CLI-740, "Effluent Pre-Release Processing."

Because the same problem recurred and had the same apparent cause, the inspectors concluded that the corrective actions for the first occurrence were ineffective in preventing the second occurrence on September 28, 1999. The inspectors determined that the corrective actions were not comprehensive.

This issue was characterized as a green finding because the significance of the related technical issue was green.

2PS3 Radiological Environmental Monitoring Program and Radioactive Material Control Program (71122.03)

a. Inspection Scope

The inspectors interviewed members of the licensee's staff responsible for implementing the radiological environmental and meteorological monitoring programs, inspected selected environmental monitoring stations (airborne, surface water, milk, broad leaf vegetation, and thermoluminescent dosimeter stations) and the two meteorological towers, observed the collection and preparation for shipment of airborne particulate and charcoal samples and surface water samples for analysis at an offsite contract laboratory, observed the meteorological instrument data displays in the control room and emergency response facilities, and reviewed the following items:

- Implementing procedures for the radiological environmental monitoring program as described in the Offsite Dose Calculation Manual
- Number and location descriptions of the environmental sampling stations to determine that the environmental sampling program was representative of the station's effluent release pathways as specified in the Offsite Dose Calculation Manual
- Environmental sampling schedule, sample collection forms, and sample data receipt forms to determine any missed samples, inoperable samplers, and lost thermoluminescent dosimeters
- Environmental sample analytical results to determine proper analysis detection sensitivities and any positive sample analysis results
- 1998 and 1999 annual land use census reports and any resulting changes to the radiological environmental monitoring program
- Calibration procedures, calibration records, and maintenance records for air sampling equipment
- Offsite dose results calculated from liquid and gaseous effluent releases
- The contractor environmental laboratory's performance in the interlaboratory comparison program
- Calibration procedures and calibration records for meteorological monitoring instrumentation
- Meteorological instrument operability, reliability, and annual meteorological data recovery
- 1998 and 1999 Annual Radiological Environmental Reports

The inspectors observed the licensee survey materials for release from the radiologically controlled area and reviewed the following items:

- Procedures, methods, and instruments used to survey, control, and release materials from the radiologically controlled area
- Calibration procedures and calibration records for instruments used to perform material release radiological surveys
- Detection sensitivities of radiation survey instruments used for contamination measurements prior to release of materials from the radiologically controlled area, including screening levels for commonly found site-specific surface contamination radionuclides

- Criteria used for the unrestricted release of material from the radiologically controlled area

b. Findings

There were no findings identified.

4. OTHER ACTIVITIES

4OA4 Crosscutting Issues

.1 Temporary Instruction 2515/144, "Performance Indicator Data Collecting and Reporting Process Review"

a. Inspection Scope

A review of the licensee's performance indicator data collection and reporting process was conducted to determine if it was consistent with the guidance developed by the Nuclear Energy Institute, as endorsed by the NRC. The following documents were reviewed during this inspection:

- Work Control Instruction WCI-701, "NRC/NEI Regulatory Assessment Performance Indicator Preparation," Revision 0
- Initiating Events Cornerstone (desktop guideline)
- Safety System Performance (desktop guideline)
- Occupational and Public Radiation Safety Cornerstone (desktop guideline)
- Physical Protection Cornerstone Protected Area Security Equipment (desktop guideline)
- Nuclear Energy Institute NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 0

In cases where desktop guidelines did not exist or the guidelines were unclear as to the data collection requirements, interviews were conducted with the individuals responsible for data collection and reporting to assess the individual's understanding of the NEI 99-02 guidance and the licensee's reporting process.

b. Findings

There were no findings identified.

OA5 Other

- .1 (Closed) LER 50-445/1999-005-01: potential common-cause failure identified in the JRAK relief valves due to pressure surges in the primary sampling system. This LER was a minor issue and was closed.

40A6 Management Meetings

.1 Exit Meeting Summary

The inspectors presented the inspection results to Messrs. M. Blevins, Vice President - Nuclear Operations, and J. Kelley, Vice President, Nuclear Engineering and Support, and other members of licensee management at exit meetings on April 12 and 27 and May 4, 19, and 30. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

ATTACHMENT 1

Supplemental Information

PARTIAL LIST OF PERSONS CONTACTED

Licensee

D. R. Alps, Security Manager
J. Amin, Engineering Manager
J. M. Ayres, Plant Support Overview Manager
T. Bagley, Support Manager - Big Brown Plant (TXU)
J. L. Barker, Engineering Overview Manager
M. Blevins, Vice President - Nuclear Operations
D. M. Bozeman, Emergency Planning Manager
R. D. Calder, Executive Assistant
T. P. Clouser, Chemistry Manager
J. R. Curtis, Radiation Protection Manager
R. Dacko, Final Safety Analysis Report Coordinator
G. Dyas, Quality Assurance Evaluator
T. Edwards, Radwaste Supervisor
R. Flores, System Engineering Manager
D. A. Goodwin, SMART Team 2 Manager
A. Hall, Operations Overview Manager
S. E. Harvey, Prompt Team Manager
T. A. Hope, Regulatory Compliance Manager
T. Jenkins, MOD Team 3 Manager
D. Kay, Radiation Protection Supervisor
J. J. Kelley, Vice President, Nuclear Engineering and Support
M. R. Kilgore, Reactor Engineering Manager
D. C. Kross, Outage Manager
M. L. Lucas, Maintenance Manager
F. W. Madden, Project Manager
R. B. Mays, Engineering Programs Manager
J. W. Meyer, Engineering Analysis Manager
D. M. McAfee, Programs Overview Manager
D. R. Moore, Operations Manager
W. Morrison, Operations Support Manager
D. Perkins, Chemistry Supervisor
C. W. Rickgauer, Maintenance Overview Manager
S. L. Smith, Smart Team #3 Manager
D. W. Snow, Senior Regulatory Compliance Specialist
M. Sunseri, Nuclear Training Manager
J. Taylor, Design Basis Engineering Supervisor
C. Terry, Senior Vice President and Principal Nuclear Officer
R. Walker, Regulatory Affairs Manager
D. L. Walling, Plant Modification Manager
D. T. Wilder, Radiation and Industrial Safety Manager
D. R. Woodlan, Docket Licensing Manager

NRC

None.

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

- | | | |
|----------------------|-----|---|
| 50-445;446/200003-01 | NCV | Failure to include proper design assumptions in engineering calculation for safety-related accumulator pressure drop testing acceptance criterion (1R19). |
| 50-445; 446/0003-02 | NCV | Failure to source check a radiation monitor prior to a release (Section 2PS1) |

Closed

- | | | |
|----------------------|-----|---|
| 50-445;446/200003-01 | NCV | Failure to include proper design assumptions in engineering calculation for safety-related accumulator pressure drop testing acceptance criterion (1R19). |
| 50-445; 446/0003-02 | NCV | Failure to source check a radiation monitor prior to a release (Section 2PS1) |
| 50-445/1999-005-01 | LER | Potential common-cause failure identified in the JRAK relief valves due to pressure surges in the primary sampling system (4OA4.2) |

Discussed

None.

LIST OF DOCUMENTS REVIEWED

PROCEDURES

<u>Number</u>	<u>Title</u>	<u>Revision</u>
Desktop	10 CFR 50.59 Review Guide (Regulatory Affairs Controlled Procedure)	7
STA-707	10 CFR 50.59 Reviews	14

SMARTFORMS REVIEWED

SMF-1999-002474-00
SMF-1999-002633-00
SMF-1999-002781-00
SMF-2000-000105-00
SMF-2000-000170-00
SMF-2000-000979-00

10 CFR 50.59 SAFETY EVALUATIONS FOR THE FOLLOWING DOCUMENTS

<u>Number</u>	<u>Document</u>	<u>Title and/or Description</u>
SE 99-010	SOP-102A/B	Modify Method of De-Energizing Residual Heat Removal Pump Hot Leg Recirculation Isolation Valves
SE 99-013	SOP-815A	Cross-Connecting Unit 1 and Unit 2 Safety Chilled Water/Unit 1 Supply
SE 99-020	DM 98-054 LDCR 99-026	Changes Pertaining to Unit 1 Emergency Diesel Generator Emergency Starts
SE 99-024	DM 92-064 DCN 12415/1	Reactor Coolant Pump Seal Upgrade
SE 99-021	DM 97-64 DCN 13016 DCN 13017 LDCR SA 99-030	Changes to Pressure Relief Valve in the Safety Injection Accumulator Nitrogen Supply System
SE 99-025	DM 98-056	Midloop Level Instrumentation and Reactor Coolant System Vent Tubing
SE 99-029	DM 99-023	Service Water Intake Structure Ventilation Modification
SE 99-033	LDCR TB 99-007 DCN 13123	Auxiliary Feed Water Pump Total Dynamic Head Acceptance Criteria Revision
SE 99-037	DIDCP 1RF07-08	Perform Two Train Component Cooling Water System Outage During 1RF07
SE 99-047	DM 98-061 TM 2-96-008	Install an Alternate Relief Path in the Safety Injection System Header

10 CFR 50.59 SCREENINGS FOR THE FOLLOWING DOCUMENTS

<u>Document Type</u>	<u>Number</u>	<u>Title and/or Description</u>
Design Change Notice	12786	Remove and Modify Bonnet Pressure Relief Valves for Containment Recirculation Sump Isolation Valves
Design Change Notice	12883	Replace Damaged Motor-Operated Valve Motor for Accumulator Isolation Valve 2-8808D
Design Change Notice	12895	Replace Motor Operator for Motor-Driven Auxiliary Feed Water Pump 2-02 Station Service Water Suction Isolation Valve
Design Change Notice	12940	Revise Design Basis Document to Update Branch Line Resistance for Safety Injection Pump Hot Leg Injection
Licensing Document Change Request	SA-98-52	Final Safety Analysis Report Update for Inverter System Review
Licensing Document Change Request	SA-98-81	Final Safety Analysis Report Update for Main Steam System Review
Licensing Document Change Request	SA-99-10	Clarification of Regulatory Guide 1.139 and ANSI 18.2
Abnormal Conditions Procedure	305	Revision 5 for Auxiliary Feed Water System Malfunction
Operations Testing Manual Procedure	201A	Revision 11 for the Safety Injection System
Operations Testing Manual Procedure	206A	Revision 18 for the Auxiliary Feed Water System
Operations Testing Manual Procedure	207A	Revision 9 for the Service Water System
Operations Testing Manual Procedure	208A	Revision 9 for the Component Cooling Water System
Operations Testing Manual Procedure	214A	Revision 13 for the Diesel Generator Operability Test
Operations Testing Manual Procedure	609A	Revision 13 for the Diesel Generator System
Temporary Modification	2-00-003-0	Leak Repair on Safety-Related Steam Generator 2-01 Safety Valve

QUALITY ASSURANCE DOCUMENTS

Nuclear Overview Evaluation Schedule for 2000

Nuclear Overview Evaluation Report EVAL-1999-029, "Radwaste/Effluent/Environmental," performed July 16 through August 3, 1999

Nuclear Overview Evaluation Report EVAL-2000-008, "Radwaste Evaluation," performed February 25 through March 3, 2000

SELF-ASSESSMENT

Radiation Protection Self-Assessment Report "Materials Release from the Radiological Controlled Area," performed May 9, 2000

PROCEDURES

Station Administration Manual Procedures

STA-603 "Control of Station Radioactive Effluents," Revision 16

STA-758 "Ventilation Filter Testing Program," Revision 0

Radwaste Operations Procedures

RWS-102 "Drain Channel A," Revision 9

RWS-103 "Drain Channel B," Revision 12

RWS-104 "Drain Channel C," Revision 11

RWS-201 "Gaseous Waste Processing System," Revision 11

Radiation Protection Procedures

RPI-704 "Pre-Release Processing for Radioactive Effluent Releases," Revision 9

RPI-705 "Post-Release Processing for Radioactive Effluent Releases," Revision 5

RPI-706 "Radioactive Effluent Tracking," Revision 5

RPI-707 "Radioactive Effluent Reporting," Revision 3

RPI-710 "Radiological Environmental Monitoring Program," Revision 6

RPI-712 "Radiological Environmental Sampling/Analysis Program," Revision 1

- RPI-713 "Collection, Preparation, and Shipment of Radiological Environmental Samples,"
Revision 1
- RPI-714 "Land Use Census," Revision 0
- RPI-888 "Calibration of Portable Air Sample Equipment," Revision 1

Chemistry Procedures

- CHM-104 "Chemistry/Radiochemistry Quality Control Program," Revision 13
- CHM-513A "Operation of the Unit 1 Process Sampling System," Revision 6
- CHM-516 "Sampling and Analysis of Gaseous Waste Systems," Revision 4
- CHM-517 "Chemistry Control of Liquid Waste Systems," Revision 5
- CLI-740 "Effluent Pre-Release Processing," Revision 1
- CLI-741 "Setpoint Modification and DRMS Pre-Release Surveillance," Revision 0
- CLI-774 "WRGM Filter Replacement," Revision 4
- CLI-777 "Use of Gaseous Waste Sampling Equipment," Revision 2

MISCELLANEOUS DOCUMENTS

Selected liquid radioactive waste batch release permits

Selected waste gas holdup tank and containment vent and purge batch release permits

Effluent radiation monitor surveillance test and calibration procedures and records

Selected meteorological monitoring instrument calibration procedures and results

Engineered safety-feature ventilation filter systems surveillance test records

Annual Radioactive Effluent Release Reports - 1998 and 1999

Annual Radiological Environmental Operating Reports - 1998 and 1999

Offsite Dose Calculation Manual, Revision 18, December 20, 1999

ATTACHMENT 2

NRC'S REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety	Radiation Safety	Safeguards
<ul style="list-style-type: none">•Initiating Events•Mitigating Systems•Barrier Integrity•Emergency Preparedness	<ul style="list-style-type: none">•Occupational•Public	<ul style="list-style-type: none">•Physical Protection

To monitor these seven cornerstones of safety, the NRC used two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the significance determination process, and assigned colors of GREEN, WHITE, YELLOW, or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, or RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.