



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
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ARLINGTON, TEXAS 76011-4005**

July 22, 2006

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and Chief Nuclear Officer  
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**SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION - NRC INTEGRATED  
INSPECTION REPORT 05000445/2006003 AND 05000446/2006003**

Dear Mr. Blevins:

On June 23, 2006, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Comanche Peak Steam Electric Station, Units 1 and 2 facility. The enclosed integrated inspection report documents the inspection findings which were discussed on June 29, 2006, with you and other members of your staff.

This inspection examined activities conducted under your licenses as they related to safety and compliance with the Commission's rules and regulations and with the conditions of your licenses. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents two NRC-identified findings of very low safety significance (Green). Both findings were determined to involve violations of NRC requirements. However, because of their very low safety significance and because they were entered into your corrective action program, the NRC is treating the findings as noncited violations (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest any NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. 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 Resident Inspector at Comanche Peak Steam Electric Station.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be made available electronically for public inspection in the NRC Public Document Room 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/reading-rm/adams.html> (the Public Electronic Reading Room).

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

/RA/

Claude Johnson, Chief  
Project Branch A  
Division of Reactor Projects

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

Enclosure: NRC Inspection Report 05000445/2006003 and 05000446/2006003  
w/Attachment: Supplemental Information

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SUNSI Review Completed: \_\_CEJ\_\_ ADAMS: / Yes    ☐ No    Initials: \_\_CEJ\_\_  
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RIV:RI:DRP/A	SRI:DRP/A	C:DRS/EB	C:DRS/OB	C:DRS/PEB	C:DRS/PSB
AASanchez	DBAllen	JAClark	ATGody	LJSmith	MPShannon
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7/14/06	7/14/06	7/10/06	7/12/06	7/12/06	7/10/06
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**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION IV**

Dockets: 50-445, 50-446

Licenses: NPF-87, NPF-89

Report: 05000445/2006003 and 05000446/2006003

Licensee: TXU Generation Company LP

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

Location: FM-56, Glen Rose, Texas

Dates: March 25, 2006 through June 23, 2006

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Attachment: Supplemental Information

## TABLE OF CONTENTS

SUMMARY OF FINDINGS .....	-3-
REPORT DETAILS .....	-5-
REACTOR SAFETY .....	-5-
1R01 <u>Adverse Weather Protection (71111.01)</u> .....	-5-
1R04 <u>Equipment Alignment (71111.04)</u> .....	-5-
1R05 <u>Fire Protection (71111.05Q)</u> .....	-6-
1R06 <u>Flood Protection Measures (71111.06)</u> .....	-7-
1R07 <u>Heat Sink Performance (71111.07)</u> .....	-7-
1R11 <u>Licensed Operator Requalification Program (71111.11)</u> .....	-8-
1R12 <u>Maintenance Effectiveness (71111.12)</u> .....	-9-
1R13 <u>Maintenance Risk Assessments and Emergent Work Evaluation (71111.13)</u> .....	-11-
1R15 <u>Operability Evaluations (71111.15)</u> .....	-11-
1R19 <u>Postmaintenance Testing (71111.19)</u> .....	-12-
1R22 <u>Surveillance Testing (71111.22)</u> .....	-13-
1EP4 <u>Emergency Action Level and Emergency Plan Changes (71114.04)</u> .....	-14-
1EP6 <u>Drill Evaluation (71114.06)</u> .....	-15-
RADIATION SAFETY .....	-15-
2OS1 <u>Access Control to Radiologically Significant Areas (71121.01)</u> .....	-16-
2OS2 <u>ALARA Planning and Controls (71121.02)</u> .....	-18-
OTHER ACTIVITIES .....	-19-
4OA1 <u>Performance Indicator Verification (71151)</u> .....	-19-
4OA2 <u>Problem Identification and Resolution (71152)</u> .....	-21-
4OA3 <u>Event Followup (71153)</u> .....	-23-
4OA5 <u>Other Activities</u> .....	-24-
4OA6 <u>Meetings, Including Exit</u> .....	-27-
SUPPLEMENTAL INFORMATION .....	A-1
KEY POINTS OF CONTACT .....	A-1
ITEMS OPENED, CLOSED, AND DISCUSSED .....	A-1
LIST OF DOCUMENTS REVIEWED .....	A-2
LIST OF ACRONYMS .....	A-7

## SUMMARY OF FINDINGS

IR 05000445/2006003, 05000446/2006003; 03/25/2006-06/23/2006; Comanche Peak Steam Electric Station, Units 1 and 2. Access Control to Radiologically Significant Areas and Other Activities.

This report covered a 3-month period of inspection by two resident inspectors, two emergency preparedness inspectors, one health physicist, two engineering inspectors, one senior operations engineer, and one consultant. Two Green findings, both of which were NCVs, were identified. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using the Inspection Manual Chapter 0609, "Significance Determination Process." Findings for which the Significance Determination Process does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

### A. NRC-Identified and Self-Revealing Findings

#### Cornerstone: Mitigating Systems

- Green. The team identified a Green noncited violation of License Condition 2.G and Technical Specification 5.4.1.d for failure to complete simulated operator actions within analyzed times and for the inability to perform some of the required actions with five examples. Specifically, the following deficiencies were identified: (1) the shift manager was unable to easily obtain the keys needed to access the transfer and hot shutdown panels, which delayed taking the required actions; (2) directions for starting the safety chiller, if not already operating, were not provided, which could have delayed accomplishing the task; (3) the licensee had not accounted for 1.5 minutes needed by operators to perform required actions prior to evacuating the control room; (4) operators took 4 minutes to mitigate a spuriously open power-operated relief valve, whereas, the analysis used 3 minutes; and (5) the 3.5 minutes needed to don the flash protective gear prevented completion of subsequent procedure steps within the time analyzed. The cause of the finding is related to the crosscutting aspect of human performance because: (1) operations personnel were unfamiliar with procedures and did not have some pertinent procedure steps available, and (2) organizations failed to communicate changes to the procedure that impacted the response time.

The team determined that this finding had more than minor significance because the inadequate procedure impacted the mitigating systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of the system that responds to the event to prevent undesirable consequences. A Phase 3 analysis of the above issues concluded the finding was of very low risk significance. Specifically, the Phase 3 analysis concluded that the 8-minute delay in transferring equipment from the control room and an additional 10-minute delay in accessing the remote shutdown room, did not result in a significant increase in risk. The analyst determined that a hot-short to

a power operated relief valve was the most risk significant situation. The risk associated with a stuck open power-operated relief valve combined with a fire in the control room panel not suppressed was determined to be 2.7E-11/year. The analyst concluded that it would require a 22 percent increase in the stress levels of the operators to result in the risk exceeding the threshold to be considered greater than that of very low risk significance (Section 4OA5).

Cornerstone: Occupational Radiation Safety

- Green. The inspector identified three examples of a noncited violation of 10 CFR 20.1902(a) because the licensee failed to conspicuously post a radiation area. Specifically, on May 18, 2006, two discrete radiation areas in the fuel building and one in the auxiliary building were identified as not being conspicuously posted. The highest general area dose rate was 15 millirem per hour. The licensee conspicuously posted these areas and entered the finding into their corrective action program as Smart Form SMF-2006-001787-00.

The finding was greater than minor because it was associated with the Occupational Radiation Safety Cornerstone attribute of Program and Process and affected the cornerstone objective to ensure the adequate protection of a worker's health and safety from exposure to radiation because not alerting workers to the presence of radiation could prevent them from taking measures to minimize radiation exposure. The finding was processed through the Occupational Radiation Safety Significance Determination Process and determined to be of very low safety significance because it was not as low as reasonably achievable finding, there was no overexposure or substantial potential for an overexposure, and the ability to assess dose was not compromised (Section 2OS1).

B. Licensee-Identified Violations

None.



## REPORT DETAILS

### Summary of Plant Status

Comanche Peak Steam Electric Station (CPSES) Units 1 and 2 operated at essentially 100 percent power for the entire reporting period.

#### 1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

##### 1R01 Adverse Weather Protection (71111.01)

###### a. Inspection Scope

The inspectors reviewed Abnormal Conditions Procedure Manual (ABN) ABN-907, "Acts of Nature," Revision 10, in the Unit 1 control room in anticipation of severe weather conditions (thunderstorms and high winds) predicted for the weekend of May 5 - 7, 2006. The inspectors interviewed the work week coordinator to determine the scheduled work activities and the potential risk impact due to the weather. On May 5, 2006, the inspectors performed a walkdown of the exterior areas of the protected area to assess the plant's readiness for high wind velocities, including the material staged in the laydown areas and the status of missile shields, access hatches and exterior doors. The Smart Form (SMF) data base was reviewed for weather related problems that could impact mitigating systems and their support systems to determine if the problems had been properly addressed for resolution.

The inspectors completed one sample.

###### b. Findings

No findings of significance were identified.

##### 1R04 Equipment Alignment (71111.04)

###### a. Inspection Scope

The inspectors: (1) walked down portions of the below listed risk important systems and reviewed plant procedures and documents to verify that critical portions of the selected systems were correctly aligned; and (2) compared deficiencies identified during the walkdown to the licensee's corrective action program to ensure problems were being identified and corrected.

- Unit 2 Turbine Driven Auxiliary Feedwater (TDAFW) system in accordance with Operations Testing Manual (OPT) Procedure OPT-206B, "AFW System," Revision 18 while Emergency Diesel Generator (EDG) 2-01 was inoperable for scheduled maintenance and surveillance testing on April 5, 2006

- C Unit 2 Train A EDG system in accordance with System Operating Procedure (SOP) SOP-609B, "Diesel Generator System," Revision 9 while the Train B EDG system was inoperable for scheduled surveillance on April 19, 2006
- C Unit 1 Train B EDG system in accordance with SOP-609A, "Diesel Generator System," Revision 17 while the TDAFW pump was inoperable for speed droop troubleshooting activities on April 25, 2006

The inspectors completed three samples.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05Q)

Fire Area Tours

a. Inspection Scope

The inspectors walked down the listed plant areas to assess the materiel condition of active and passive fire protection features and their operational lineup and readiness. The inspectors: (1) verified that transient combustibles and hot work activities were controlled in accordance with plant procedures; (2) observed the condition of fire detection devices to verify they remained functional; (3) observed fire suppression systems to verify they remained functional; (4) verified that fire extinguishers and hose stations were provided at their designated locations and that they were in a satisfactory condition; (5) verified that passive fire protection features (electrical raceway barriers, fire doors, fire dampers, steel fire proofing, penetration seals, and oil collection systems) were in a satisfactory materiel condition; (6) verified that adequate compensatory measures were established for degraded or inoperable fire protection features; and (7) reviewed the corrective action program to determine if the licensee identified and corrected fire protection problems.

- C Fire Zone EN064 - Unit 1 cable spreading room on April 20, 2006
- C Fire Zone EM063 - Unit 2 cable spreading room on April 20, 2006
- C Fire Zone EA0043 - steam generator blowdown room on April 21, 2006
- C Fire Zone 1SB02A - Unit 1 Train A emergency core cooling pump rooms, 773 foot elevation, on May 10, 2006
- C Fire Zone 1SB015 - Unit 1 containment access corridor, 831 foot elevation, on May 10, 2006
- C Fire Zone 2SB015 - Unit 2 containment access corridor, 831 foot elevation, on May 11, 2006

C Fire Zone AA21A - Units 1 & 2 auxiliary building, 790 foot elevation, on June 4, 2006

The inspectors completed seven samples.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

External Flood Protection

a. Inspection Scope

The inspectors: (1) reviewed the Updated Safety Analysis Report, the Design Basis Document DBD-CS-071, "Probable Maximum Flood (PMF)," Revision 10, and the applicable plant procedure ABN-907, "Acts of Nature," Revision 10, to assess the CPSES site's susceptibility to external flooding; (2) reviewed the corrective action program to determine if the licensee identified and corrected flooding problems; and (3) on April 14, 2006, walked down the areas of the plant below grade level to verify the adequacy of equipment seals and floor and wall penetration seals located below the maximum flood level.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

The inspectors reviewed the licensee's program for maintenance and testing for the three risk-important heat exchangers listed below. The inspectors performed the review to ensure that these heat exchangers are capable of performing their required safety function during the design basis accident. Specifically, the inspectors observed the physical condition before and after cleaning activities and verified that the frequency of monitoring and inspection was sufficient to detect degradation prior to loss of heat removal capabilities below design requirements. Corrective action documents and design basis documents were also reviewed by the inspectors. The service water system and fouling monitoring program manager was also interviewed. The following heat exchangers were reviewed for this inspection:

C On February 16, 2006 the inspectors observed and reviewed the cleaning of the Unit 2 Containment Spray Pump 2-04 lube oil coolers.

- C On March 23, 2006, the inspectors interviewed the system engineer and reviewed photographs of the Unit 1 Safety Injection Pump (SIP) 1-02 lube oil cooler.
- C On April 25, 2006, the inspectors observed the as found, cleaning, and as left condition of the Unit 2 SIP 2-01 lube oil cooler.

The inspectors completed three samples.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Resident Inspector Quarterly Review (71111.11Q)

a. Inspection Scope

The inspector observed a licensed operator requalification training scenario in the control room simulator on April 27, 2006. The scenario began with a short event to recognize a reactor coolant pump under-frequency trip and take appropriate actions to manually trip the reactor. The main scenario began with operators taking the watch with the reactor at 100 percent power. The following events then took place: (1) steam generator transmitter failed high; (2) steam generator tube leak; (3) steam generator feedwater regulating valve failed close, (4) required reactor trip and safety injection; and (5) a steam generator tube rupture and a Loss of Coolant Accident with subcooled recovery.

Simulator observations included formality and clarity of communications, group dynamics, the conduct of operations, procedure usage, command and control, and activities associated with the emergency plan. The inspectors also verified that evaluators and the operators were identifying crew performance problems as applicable.

On April 24, 2006 a classroom session on the upcoming steam generator and reactor vessel head was also attended.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

.2 Regional Biennial Review

a. Inspection Scope

Following the completion of the annual operating examination testing cycle, which ended the week of March 27, 2006, the inspector reviewed the overall pass/fail results of the annual individual job performance measure operating tests, and simulator operating tests administered by the licensee during the operator licensing requalification cycle. Fourteen separate crews participated in simulator operating tests, and job performance measure operating tests, totaling 83 licensed operators. All of the crews tested passed the simulator portion of the annual operating test. All of the licensed operators passed the job performance measure portion of the examination.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Maintenance Effectiveness Inspection

a. Inspection Scope

The inspectors independently verified that CPSES personnel properly implemented 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," for the following equipment performance items:

- C Recent functional failures of Unit 2 Safety Chiller 2-06, and reviews of unavailability and issues of associated safety chillers in both units and both trains. The more pertinent issues were entered into the licensee's corrective action program as SMF-2006-002124-00 and SMF-2006-001814-00.
- C Units 1 and 2 containment spray systems related SMFs and performance issues, including maintenance activities that resulted in greater unavailability time than scheduled, system leaks, repeated unavailability due to low flow to pump bearing coolers from station service water, and degraded pipe wall in Containment Spray Pump 1-04 pump casing drain pipe.

The inspectors reviewed whether the structures, systems, or components (SSCs) that experienced problems were properly characterized in the scope of the Maintenance Rule Program and whether the SSC failure or performance problem was properly characterized. The inspectors assessed the appropriateness of the performance criteria established for the SSCs where applicable. The inspectors also independently verified that the corrective actions and responses were appropriate and adequate.

The inspectors completed two samples.

b. Findings

No findings of significance were identified.

.2 Triennial Review

a. Inspection Scope

Periodic Evaluation Reviews

The inspectors reviewed the licensee's overall implementation of the Maintenance Rule, 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." The inspectors reviewed scope and depth of the licensee's Maintenance Rule periodic assessments for May 22, 2003, to February 20, 2005. The inspectors then assessed the effectiveness of corrective actions and program adjustments as a result of the assessment findings.

The inspectors also selected samples of four SSCs within the scope of the licensee's Maintenance Rule program that had degraded performance at some point during the review period. These samples were used to assess the licensee's response to the degraded performance within the scope of the Maintenance Rule program. Inspection Procedure 71111.12B requires that the inspector review four to six SSC samples. The inspectors selected the following four samples for a detailed review:

- Station Service Water System
- Reactor Protection System
- Component Cooling Water System
- Main Steam System

For these SSCs, the inspectors reviewed the use of performance history and operating experience, both internal and industry wide, in adjusting preventive maintenance, (a)(1) goals, and (a)(2) performance criteria. For structures being monitored through condition monitoring, the inspectors reviewed the licensee's performance criteria and condition monitoring procedures to determine whether there was consistency and monitoring of proper attributes which would be predictive of degradation. The inspectors also reviewed adjustments to the scope of the Maintenance Rule program and changes made during the assessment period.

The inspectors completed four samples.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation (71111.13)

a. Inspection Scope

The inspectors reviewed selected activities regarding risk evaluations and overall plant configuration control. The inspectors discussed emergent work issues with work control personnel and reviewed the potential risk impact of these activities to verify that the work was adequately planned, controlled, and executed. The activities reviewed were associated with:

- C The unexpected Electric Reliability Council of Texas (ERCOT) implementation of their emergency electric curtailment plan due to extremely warm temperatures resulting in electrical line overloads throughout the Texas grid on April 17-18, 2006
- C Postponement of Unit 1 TDAFW pump run due to severe weather on April 20, 2006
- C Escalation of the Unit 1 risk to Red due to unexpected severe thunderstorm warnings while the TDAFW pump was inoperable for troubleshooting activities on April 25, 2006
- C Emergent work on Unit 1 TDAFW pump (replaced governor and current to pneumatic (I/P) converter) which caused rescheduling of SIP 1-01 maintenance on May 2, 2006
- C A trip of Unit 2 Safety Chiller 2-06 (Train B) during a Train A maintenance work week, which led to start of the Train A safety chiller and realignment of reactor coolant system charging, spent fuel pool cooling, and control room air conditioning system cooling on June 19-20, 2006

The inspectors completed five samples.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors: (1) reviewed plant status documents such as operator shift logs, emergent work documentation, deferred modifications, and standing orders to determine if an operability evaluation was warranted for degraded components; (2) referred to the Updated Safety Analysis Report and design basis documents to review the technical adequacy of licensee operability evaluations; (3) evaluated compensatory measures associated with operability evaluations; (4) determined degraded component impact on any Technical Specifications; (5) used the significance

determination process (SDP) to evaluate the risk significance of degraded or inoperable equipment; and (6) verified that the licensee has identified and implemented appropriate corrective actions associated with degraded components. The inspectors interviewed appropriate licensee personnel to provide clarity to operability evaluations, as necessary. Specific operability evaluations reviewed are listed below:

- C SMF-2006-001290-00, following maintenance on the Unit 1 Containment Spray Pump 1-03, a 30 drop per minute leak was discovered in the threaded station service water pipe connection to the outboard bearing oil cooler of the pump, reviewed on April 23, 2006
- C Evaluation (EVAL) 2006-001177-01-00, determine effects on operability and plant design of removing approximately 8 inches of piping insulation on an 8-inch line SI-2-037 in Room 2-062E, specifically the environmental qualification of the equipment in the room, reviewed on June 4, 2006
- C EVAL-2006-001178-01-00, determine operability of Component Cooling Water (CCW) Pump 1-02 Recirculation Flow Valve 1-FV-4537 after it exceeded the Alert and Acceptance stroke time criteria per OPT-208A, "CCW System," Revision 11, reviewed on June 4, 2006
- C EVAL 2006-001714-01-00, engineering determined acceptability of design qualification of the spent fuel pool gates with gaps up to 1/16-inch between the new washers and the gate hinges, reviewed the week of June 4, 2006
- C Quick Technical Evaluation QTE-2006-000972-01-03, Unit 1 TDAFW pump turbine speed control drift issue following troubleshooting that yielded more information on possible equipment problems, reviewed the weeks of April 25, 2006, and June 12, 2006
- C EVAL-2006-000976-03, Unit 1 TDAFW Pump 1-01 Discharge to Steam Generator 1-01 Isolation Valve 1-HV-2491-A after failing the "as found," surveillance for thrust criteria, reviewed on June 23, 2006

The inspectors completed six samples.

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

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



- C Unit 1 Centrifugal Charging Pump 1-01 following the motor breaker replacement, in accordance with OPT-201A, "Charging System," Revision 13, on March 28, 2006
- C Unit 1 Atmospheric Relief Valve 1-PV-2327 following the replacement of the I/P converter, in accordance with OPT-504A, "MS Section XI Valves," Revision 11, on April 3, 2006
- C Unit 1 Containment Fan Coolers 1 & 2 condensate fill rate Channel 5163 following the replacement of lead-lag and power supply cards, in accordance with Instrument and Control Manual (INC) procedures INC-2301, "Alignment and Functional Test Westinghouse 7300 Series Lead/Lag Amplifier (NLL) Card," Revision 3 and INC-7849-A, "Channel Calibration Containment Aircooler Condensate Flowrate Channel 5162/63," Revision 2, on April 7, 2006
- C Unit 2 SIP 2-01 following annual maintenance on the lube oil cooler, in accordance with OPT-204B, "SI System," Revision 10, on April 25, 2006
- C Unit 1 TDAFW pump following replacement of the governor valve and I/P converter to correct a speed drift issue, in accordance with OPT-206A, "AFW System," Revision 25, on May 2, 2006
- C Unit 1 Main Steam Line Loop 2 calibration following replacement of the failed power supply card, in accordance with INC-7301A, "Analog Channel Operational Test and Channel Calibration Steam Pressure, Loop 2, Protection Set III, Channel 0526," Revision 6, on June 2, 2006

In each case, the associated work orders and test procedures were reviewed in accordance with the inspection procedure to determine the scope of the maintenance activity and to determine if the testing was adequate to verify equipment operability.

The inspectors completed six samples.

b. Findings

No findings of significance 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, and the adequacy of acceptance criteria. Other aspects evaluated included test frequency and test equipment accuracy, range, and calibration; procedure adherence; record keeping; the restoration of standby equipment; test failure

evaluations; system alarm and annunciator functionality; and the effectiveness of the licensee's problem identification and correction program. The following surveillance test activities were observed and/or reviewed by the inspectors:

- C Unit 2 Containment Spray Pumps 2-01 and 2-03 in accordance with OPT-205B, "Containment Spray System," Revision 13, observed on March 29, 2006
- C Unit 2 Train A residual heat removal system in accordance with OPT-203B, "Residual Heat Removal System," Revision 11, observed on April 6, 2006
- C Unit 2 Containment Recirculation Sumps Trains A and B in accordance with OPT-306, "Containment Sump Inspection," Revision 6, observed on April 7 and 21, 2006
- C Unit 1 Train B EDG operability test in accordance with OPT-214A, "Diesel Generator Operability Test," Revision 18, and OPT-491A, "Train B Safeguards Slave Relay K609 Actuation Test," Revision 4, observed on April 12, 2006
- C Unit 2 TDAFW pump in accordance with OPT-206B, "AFW System," Revision 18, observed on April 13, 2006
- C Unit 2 monthly core physics testing in accordance with Nuclear Engineering Manual (NUC) procedure NUC-201, "Surveillance of Core Power Distribution Factors," Revision 12, NUC-203, "Incore/Excore Detector Calibration," Revision 16, NUC-204, "Target Axial Flux Difference," Revision 16, and NUC-205, "Core Reactivity Balance," Revision 10, reviewed on April 17, 18, and 23, 2006
- C Unit 2 Train B CCW operability test in accordance with OPT-208B, "CCW System," Revision 9, observed on June 4, 2006

The inspectors completed seven samples.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

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

a. Inspection Scope

The inspector performed in-office reviews of Revision 33 to the Comanche Peak, Units 1 and 2, Emergency Plan, and Revision 11-1 to Emergency Plan Procedure EPP-201, "Assessment of Emergency Action Levels Emergency Classification and Plan Activation," both submitted in February 2006.

These revisions changed emergency classification level descriptions and revised emergency action levels as described in NRC Bulletin 2005-002, "Emergency Preparedness and Response Actions for Security-Based Events," updated the Letters of Agreement, and made other editorial changes.

These revisions were compared to their previous revisions, to the criteria of NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, to Nuclear Energy Institute (NEI) 99-01, "Methodology for Development of Emergency Action Levels," Revision 2, to NRC Bulletin 2005-02, and to the requirements of 10 CFR 50.47(b) and 50.54(q), to determine if the licensee adequately implemented 10 CFR 50.54(q).

This review was not documented in a Safety Evaluation Report and did not constitute approval of licensee changes, therefore these changes are subject to future inspection.

The inspector completed two samples during this inspection.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The resident inspectors evaluated the conduct of a routine licensee emergency drill on April 5, 2006, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation (PAR) development activities. The scenario included opportunities for classification, notification, and PAR development to be counted towards the licensee Drill/Exercise Performance (DEP) performance indicator. The inspectors observed activities in the control room simulator, technical support center, and the emergency operations center. The inspectors reviewed the scenario and drill objectives, observed the licensee's critique to verify that the licensee was adequately conducting drills and critiquing drill performance.

The inspector completed one sample.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

## 2OS1 Access Control to Radiologically Significant Areas (71121.01)

### a. Inspection Scope

This area was inspected to assess the licensee's performance in implementing physical and administrative controls for airborne radioactivity areas, radiation areas, high radiation areas, and worker adherence to these controls. The inspector used the requirements in 10 CFR Part 20, the Technical Specifications, and the licensee's procedures required by Technical Specifications as criteria for determining compliance. During the inspection, the inspector interviewed the radiation protection manager, radiation protection supervisors, and radiation workers. The inspector performed independent radiation dose rate measurements and reviewed the following items:

- Performance indicator events and associated documentation packages reported by the licensee in the Occupational Radiation Safety Cornerstone
- Controls (surveys, posting, and barricades) of radiation, high radiation, or airborne radioactivity areas
- Radiation work permits, procedures, engineering controls, and air sampler locations
- Conformity of electronic personal dosimeter alarm set points with survey indications and plant policy; workers' knowledge of required actions when their electronic personnel dosimeter noticeably malfunctions or alarms
- Self-assessments, audits, licensee event reports, and special reports related to the access control program since the last inspection
- Radiation work permit briefings and worker instructions
- Adequacy of radiological controls such as, required surveys, radiation protection job coverage, and contamination controls during job performance

The inspector completed 8 of the required 21 samples.

### b. Findings

Introduction: The inspector identified three examples of a noncited violation (NCV) of 10 CFR 20.1902(a) because the licensee failed to conspicuously post a radiation area. The violation had very low safety significance.

Description: On May 18, 2006, the inspector toured the Instrument and Calibration Hot Lab, Room X-165, on the 790-foot elevation of the auxiliary building, and identified radiation dose rates in excess of 5 millirem per hour from pipe at the top of the stairway leading to the 802-foot elevation of the fuel building. The dose rates were later

confirmed by the licensee to be up to 30 millirem per hour at 30 cm from this pipe. This area was not conspicuously posted as a radiation area, although the entrance to Room X-165 was posted on the 790-foot elevation. This room was large enough that posting the discrete radiation area at the top of the stairway was warranted.

The second and third examples were identified during tours and subsequent review of survey maps of the fuel building. The licensee had posted the entire fuel building as a radiation area. However, posting the entire fuel building was not warranted because the licensee's surveys showed that there were two separate and discrete radiation areas in the fuel building. One radiation area was located on the 810-foot elevation corridor in the drum storage area, which had maximum dose rates of 10 millirem per hour at 30 centimeters. The second location was on the 800-foot elevation in Room X-247, the drum storage pit, which had maximum dose rates of 15 millirem per hour at 30 centimeters.

The inspector reviewed the applicable guidance in NUREG/CR-5569, Revision 1, Health Physics Positions 036, "Posting of Entrances to a Large Room or Building as a Radiation Area," and 066, "Guidance for Posting Radiation Areas." Because each of these examples were discrete radiation areas, the inspector concluded that posting the entire fuel building and the doorway to Room X-165, rather than each discrete radiation area, was not sufficient to alert radiation workers to radiological hazards in their immediate work areas.

Analysis: The failure to conspicuously post a radiation area is a performance deficiency. The finding was greater than minor because it was associated with the Occupational Radiation Safety Cornerstone attribute of Program and Process and affected the cornerstone objective to ensure the adequate protection of a worker's health and safety from exposure to radiation because not alerting workers to the presence of radiation could prevent them from taking measures to minimize radiation exposure. Because the finding involved the potential for unplanned, unintended dose resulting from conditions that were contrary to NRC regulations, the finding was evaluated using the Occupational Radiation Safety SDP. The finding was determined to be of very low safety significance because: (1) it did not involve as low as reasonably achievable (ALARA) planning or work controls, (2) there was no personnel overexposure, (3) there was no substantial potential for personnel overexposure, and (4) the finding did not compromise the licensee's ability to assess dose.

Enforcement: 10 CFR 20.1003 defines a radiation area as an area, accessible to individuals, in which radiation levels could result in an individual receiving a dose equivalent in excess of 5 millirem in an hour at 30 centimeters from the radiation source or from any surface that the radiation penetrates. 10 CFR 20.1902(a) requires each radiation area be posted with a conspicuous sign or signs. Contrary to this requirement, on May 18, 2006, the licensee failed to conspicuously post three discrete radiation areas. This violation was entered into the licensee's corrective action program as SMF-2006-001787-00. Because this finding is of very low safety significance and was entered into the licensee's corrective action program, it is being treated as a noncited violation, consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 05000445;446/2006003-01, Three Examples of a Failure to Conspicuously Post a Radiation Area.

## 2OS2 ALARA Planning and Controls (71121.02)

### a. Inspection Scope

The inspector assessed licensee performance with respect to maintaining individual and collective radiation exposures ALARA. The inspector used the requirements in 10 CFR Part 20 and the licensee's procedures required by Technical Specifications as criteria for determining compliance. The inspector interviewed licensee personnel and reviewed:

- Current 3-year rolling average collective exposure
- Five outage work activities scheduled during the inspection period and associated work activity exposure estimates that were likely to result in the highest personnel collective exposures
- Site specific trends in collective exposures, plant historical data, and source-term measurements
- Site specific ALARA procedures
- Five work activities of highest exposure significance completed during the last outage
- ALARA work activity evaluations, exposure estimates, and exposure mitigation requirements
- Intended versus actual work activity doses and the reasons for any inconsistencies
- Integration of ALARA requirements into work procedure and radiation work permit documents
- Shielding requests and dose/benefit analyses
- Post-work reviews
- Assumptions and basis for the current annual collective exposure estimate, the methodology for estimating work activity exposures, the intended dose outcome, and the accuracy of dose rate and man-hour estimates
- Use of engineering controls to achieve dose reductions and dose reduction benefits afforded by shielding
- Self-assessments, audits, and special reports related to the ALARA program since the last inspection
- Resolution through the corrective action process of problems identified through post-work reviews and post-outage ALARA report critiques

- Corrective action documents related to the ALARA program and follow-up activities such as initial problem identification, characterization, and tracking

The inspector completed 10 of the required 15 samples and 5 of the optional samples.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 Barrier Integrity Cornerstone

a. Inspection Scope

The inspector reviewed a sample of the performance indicator (PI) data submitted by the licensee regarding the barrier integrity cornerstone to verify that the licensee's data was reported in accordance with the requirements contained in NEI 99-02, "Regulatory Assessment Indicator Guideline," Revision 3. The sample included data taken from reactor coolant system water inventory Forms OPT-303-3 and the dose equivalent Iodine-131 data from the Forms CHM-506-1, "Reactor Coolant System Control, Technical Specification, and Fuel Performance, Mode 1-3," Revision 26, for the period July 2004 to March 2006 for both Units 1 and 2. The inspectors interviewed licensee personnel accountable for collecting and evaluating the PI data. The inspector compared this to the information available on the NRC web page for July 2004 to March 2006 for both Units 1 and 2 for the following PIs:

- Units 1 and 2 Reactor Coolant System Activity
- Units 1 and 2 Reactor Coolant System Leakage

The inspectors completed four samples in this cornerstone.

b. Findings

No findings of significance were identified.

.2 Mitigation Systems Cornerstone

a. Inspection Scope

The inspector reviewed a sample of PI data submitted by the licensee regarding the mitigating system cornerstone to verify that the licensee's data was reported in accordance with the requirements of NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 3. Reactor operator logs, limiting condition for operation action requirement logs, SMF-2004-4109, SMF-2005-0094, SMF-2005-2587, SMF-2005-3675, SMF-2006-0011, SMF-2006-0981, and licensee event reports submitted between July 2004 and March 2006, were reviewed for both Units 1 and 2 to identify for the following PI:



- Units 1 and 2 Safety System Functional Failures

The inspectors completed two samples in this cornerstone.

b. Findings

No findings of significance were identified.

.3 Occupational Radiation Safety Cornerstone

a. Inspection Scope

- Occupational Exposure Control Effectiveness

The inspector reviewed licensee documents from July 1, 2005, through March 31, 2006. The review included corrective action documentation that identified occurrences in locked high radiation areas (as defined in the licensee's Technical Specifications), very high radiation areas (as defined in 10 CFR 20.1003), and unplanned personnel exposures (as defined in NEI 99-02). Additional records reviewed included ALARA records and whole-body counts of selected individual exposures. The inspector interviewed licensee personnel that were accountable for collecting and evaluating PI data. In addition, the inspector toured plant areas to verify that high radiation, locked high radiation, and very high radiation areas were properly controlled. PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Indicator Guideline," Revision 3, were used to verify the basis in reporting for each data element.

The inspector completed the required one sample in this cornerstone.

b. Findings

No findings of significance were identified.

.4 Public Radiation Safety Cornerstone

a. Inspection Scope

- Radiological Effluent Technical Specification/Offsite Dose Calculation Manual  
Radiological Effluent Occurrences

The inspector reviewed licensee documents from July 1, 2005, through March 31, 2006. Licensee records reviewed included corrective action documentation that identified occurrences for liquid or gaseous effluent releases that exceeded PI thresholds and those reported to the NRC. The inspector interviewed licensee personnel that were accountable for collecting and evaluating the PI data. PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Indicator Guideline," Revision 3, were used to verify the basis in reporting for each data element.

The inspector completed the required one sample in this cornerstone.



b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution (71152)

.1 Review of Items Entered into the Corrective Action Program

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," and in order to help identify repetitive equipment failures or specific human performance issues for followup, the inspectors performed a routine screening of all items entered into the licensee's corrective action program. This review was accomplished by reviewing the licensee's computerized corrective action program database SMFs, reviewing hard copies of selected SMFs and attending related meetings such as Plant Event Review Committee (PERC) meetings.

b. Findings

No findings of significance were identified.

.2 Semiannual Trend Review

a. Inspection Scope

On June 20, 2006, the inspectors completed a semiannual review of licensee internal documents, reports, and performance indicators to identify trends that might indicate the existence of more safety significant issues. The inspectors reviewed the following types of documents:

- C Corrective Action Documents (Smart Forms)
- C System Health Reports
- C Planned Maintenance Work Week Critiques
- C CPSES Nuclear Overview Department Evaluation Reports (Audits)
- C Human Performance Program Health Indicators Package
- C Corrective Action Program Health report
- C Station Reliability Issues
- C Degraded conditions evaluated in accordance with Generic Letter 91-18
- C CPSES Self-Assessment Reports

b. Findings and Observations

No findings of significance were identified. However, during the review, the inspectors did note trends or concerns that had been identified by the licensee and/or NRC which warrant continued attention. These included (1) foreign material exclusion, (2) use of error prevention tools, (3) industrial safety practices, (4) radiation worker practices and dose management, and (5) change management, specifically in the area of work force resources. The inspectors did not identify any additional trends.

The inspectors determined that the licensee had adequately identified adverse trends and entered them into the corrective action program using an appropriate threshold.

.3 Selected Issue Followup - SMF-2004-002797-01, Engineering Evaluation of Modification Failed to Identify Adverse Impact on Electrical Area and Primary Plant Ventilation System Pressure Boundary

a. Inspection Scope

This issue was selected because it was a long term, licensee identified engineering issue with some technical complexity, multiple cause determinations and a high level of significance (level 2) within the CPSES corrective action program.

The inspectors assessed the licensee's cause analysis using the inspection guidance in Inspection Procedure 95001 as an aid. Other attributes assessed included: complete and accurate identification of the problem in a timely manner; evaluation and disposition of operability and reportability issues; consideration of extent of condition, generic implications, common cause, and previous occurrences; classification and prioritization of the resolution of the problem; identification of root and contributing causes of the problem; identification of corrective actions which were appropriately focused to correct the problem; and completion of corrective actions in a timely manner commensurate with the safety significance of the issue.

The inspector completed one sample.

b. Findings

No findings of significance were identified. During testing after implementing a modification to the Unit 1 main steam/feedwater area ventilation system, the licensee identified that some normal combinations of running fans caused a negative differential pressure between the safeguards electrical area and the primary plant area. The licensee further determined that the ventilation systems may not be capable of maintaining the design differential pressures during a safety injection with a single failure to trip of a non-safety related train of main steam/feedwater area ventilation.

The licensee's cause analysis stated that the original scope of the modification was to make permanent a temporary modification which had already been reviewed for significant design impacts. The review did not consider that a non-safety related system may fail to trip or that a safety actuation on a single train could result in one train of non-safety ventilation continuing to run. A change to the modification during installation was

not communicated to the engineer performing airflow analysis. Corrective actions included changing the modification to eliminate the concern, correcting the associated documentation and conducting training based on the lessons learned.

.4 Radiation Safety Inspection

a. Inspection Scope

The inspector evaluated the effectiveness of the licensee's problem identification and resolution process with respect to the following inspection areas:

- Access Control to Radiologically Significant Areas (Section 2OS1)
- ALARA Planning and Controls (Section 2OS2)

b. Findings

No findings of significance were identified.

.5 Maintenance Effectiveness Triennial Review

a. Inspection Scope

The inspectors evaluated the use of the corrective action program within the Maintenance Rule program. The review was accomplished by the examination of a sample of corrective action documents and work orders. The purpose of the review was to determine that the identification of problems and implementation of corrective actions were acceptable.

b. Findings

No findings of significance were identified.

4OA3 Event Followup (71153)

.1 (Closed) Licensee Event Report (LER) 05000445/2004-003-00 Reactor Coolant System Leak Detection Instrumentation Inoperable for Periods Due to a Design Related Siphoning Condition

On July 26, 2004, the licensee determined that the Unit 1 containment sump level and flow monitoring system had been inoperable on December 15, 2003, for a period greater than allowed by the Technical Specifications. The licensee determined that sump inoperability was caused by an original design flaw in system piping elevations that allowed the containment sumps to be siphoned to the floor drain tank. Corrective action consisted of a system modification to add vacuum breakers to eliminate siphoning events. No new findings were identified by the inspector's review. This finding constitutes a violation of minor significance that is not subject to enforcement action in accordance with Section IV of the NRC's Enforcement Policy. The licensee has documented this issue in SMF-2004-002244-00. This LER is closed.

.2 (Closed) LER 05000446/2005-001-00 Unit 2 Containment Personnel Airlock Door Inoperable for a Period of Time Longer than Allowed by Technical Specifications

On January 18, 2005, the licensee identified that one of the two Unit 2 containment personnel airlock doors had been inoperable for a period of time longer than allowed by the Technical Specifications. The engineering staff determined that the airlock doors were inoperable because the doors gaskets on both doors had been improperly installed because of an inadequate procedure. Corrective actions included installing the door gaskets correctly and revising procedures for installing the gaskets and postmaintenance testing. No new findings were identified by the inspector's review. This finding constitutes a violation of minor significance that is not subject to enforcement action in accordance with Section IV of the NRC's Enforcement Policy. The licensee has documented this issue in SMF-2004-004007-00. This LER is closed.

.3 (Closed) LER 05000446/2005-002-00 Auxiliary Feedwater System Actuation Due to Momentary Loss of the 138KV Switchyard

On February 23, 2005, at 1:53 a.m., a momentary interruption of power to the 138KV switchyard occurred causing the Unit 2 6.9KV safeguards buses to transfer to their alternate power source. This resulted in actuation of the Unit 2 black out sequencers and actuation of the turbine driven auxiliary feedwater pump, as expected. The licensee believed the event was caused by a lightning strike on the Stephenville transmission line and a misconfigured jumper in the power line communication equipment located at the DeCordova end of the other transmission line. The jumper configuration was corrected and the transmission company verified the jumper settings at other adjacent switchyards. The LER was reviewed by the inspectors and no findings of significance were identified and no violations of NRC requirements occurred. This event was documented in Section 1R14 of NRC Inspection Report 05000445;446/2005002 and by the licensee in SMF-2005-000722-00. This LER is closed.

4OA5 Other Activities

.1 (Closed) Unresolved Item (URI) 05000445;05000446/2005005-02: Notification Form Accuracy Requires Additional Guidance

a. Inspection Scope

The inspector previously reviewed data supporting licensee submittals for the Drill and Exercise performance indicator for the period July 2004 through September 2005, and identified 11 instances in which the licensee evaluated offsite notification forms as accurate when a site-wide emergency condition was marked as applying only to Unit 1. The inspector reviewed Frequently Asked Question #58.2, approved by the Performance Indicator Joint Working Group on February 23, 2006, and determined the licensee was required to provide guidance for evaluating all aspects of notification accuracy, but was not required to revise previously submitted performance indicator data. The inspector determined that the licensee did not revise previously submitted performance indicator for the period July 2004 through September 2005.

b. Findings

No findings of significance were identified.

.2 (Closed) URI 05000445; 05000446/2005008-01: Operators Unable to Meet Some Critical Action Times During Alternative Shutdown Walkthrough

Introduction. The team identified a Green noncited violation of License Condition 2.G and Technical Specification 5.4.1.d with five examples for failure to complete simulated operator actions within analyzed times and for the inability to perform some of the required actions. The licensee entered this item into their corrective action program.

Description. The team identified the following examples of inadequate procedural guidance for achieving post-fire safe shutdown following evacuation of the control room by performing reviews and timed walkthroughs of procedure ABN-803B, "Response To A Fire In The Control Room or Cable Spreading Room," Revision 3.

A walkthrough of Procedure ABN-803B was timed by the NRC regional inspectors to observe the actions of the shift manager/unit supervisor, licensed control room operators and non-licensed plant equipment operators. The shift manager was unfamiliar with the location of keys needed to gain access to the transfer panels and hot shutdown panels. As a result, the crews of both units would have been delayed in transferring control. Without access to the hot shutdown panel and the transfer switch panel, the mitigation of spurious actuations because of fire damage would not have been accomplished. The licensee has modified the "Controlled Keys" key locker to replace the locking mechanism with a door latch and provided additional labeling to aid in locating the safe shutdown keys. Operations shift orders were issued to train the operators on this issue and resulting changes.

During a timed performance of the alternate shutdown Procedure ABN-803B by NRC inspectors, approximately 1.5 minutes were required to perform the steps inside the control room prior to evacuation from the control room. The licensee verification and validation of procedure ABN-803B did not account for the time that the operators need to perform their actions in the control room. This was inconsistent with the fire safe shutdown analysis. The safe shutdown analysis specified that operators must take actions to mitigate a spuriously open power operated relief valve within 3 minutes. However, the team observed that it took 4 minutes to accomplish these actions (not accounting for the delay in obtaining keys).

During the timed walk down of Procedure ABN-803B with plant operators, it was noted that in Procedure ABN-803B, Attachment 4, Step I required the plant operator to ensure that the safety chiller was operating. The procedure did not provide the operator specific directions for restarting the safety chiller if not already running. The team observed that the equipment operator was unable to perform that step because of the lack of procedural detail. Without the chiller operating, all personnel, all running emergency core cooling system motors, and the sole operating emergency diesel generator would be subjected to elevated temperatures because of ventilation without cooling.

Procedure ABN-803B also did not adequately address potential fire damage to the public address and fire alarm systems in the event of a fire in the control room. The design basis document for the communication system stated that for a control room fire, the Gai-Tronics system could become inoperable. Procedure ABN-803B required the shift manager to make an announcement using the "All Page" function of the Gai-Tronics station in the control room, and to sound the fire alarm from the same location.

The alternate station for the "All Page" function was the Technical Support Center. However, the Technical Support Center would be uninhabitable during a control room fire because it used the same ventilation system.

Licensee policy required the donning of flash protective gear when operating energized breakers in high voltage switchgear. The plant equipment operators were required to open the four reactor coolant pump breakers and to open the startup transformer breaker to mitigate the effects of spurious actuations. These were 6.9 kV breakers and would be energized and loaded during the performance of this procedure. The inspectors determined that the 3.5 minutes required for the plant equipment operator to don the protective gear and continue with the procedure did not allow accomplishment of subsequent actions within the times defined by the safe shutdown analysis.

Analysis. The team determined that this finding had more than minor significance because the inadequate procedure impacted the mitigating systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of the system that responds to the event to prevent undesirable consequences. A Phase 3 analysis of the above issues concluded the finding was of very low risk significance. Specifically, the Phase 3 analysis concluded that the 8-minute delay in transferring equipment from the control room and an additional 10-minute delay in accessing the remote shutdown room, did not result in a significant increase in risk. The analyst determined that a hot-short to a power operated relief valve was the most risk significant situation. The risk associated with a stuck open power-operated relief valve combined with a fire in the control room panel not suppressed was determined to be  $2.7E-11$ /year.

The analyst concluded that it would require a 22 percent increase in operator failure rates to result in the risk exceeding the threshold to be considered greater than that of very low risk significance. Human reliability models were not available to quantify the effect of the initial problems that would be encountered during the control room evacuation, but as an estimate, the analyst determined that the increased stress (which would be small because the baseline stress of any control room evacuation is very high) and 10-minute time loss in performing actions would not increase the failure rate of remote shutdown by more than 22 percent overall.

The cause of the finding is related to the crosscutting aspect of human performance because (1) operations personnel were unfamiliar with procedures and did not have some pertinent procedure steps available, and (2) organizations failed to communicate changes to the procedure that impacted the response time.

Enforcement. License Condition 2.G specifies, "TXU Generation Company LP shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report through Amendment 78 and as approved in the safety evaluation report (SER) (NUREG-0797) and its supplements through 24." Technical Specification 5.4.1.d requires that written procedures covering fire protection program implementation be established, implemented, and maintained. Procedure ABN-803B, "Response To A Fire In The Control Room or Cable Spreading Room," Revision 3, described required time-dependent actions for evacuating the control room. Contrary to the above, the inspectors determined that the procedure failed to ensure that all time-dependent actions could be accomplished in the time assumed in the analysis and/or could be accomplished. Specifically, the following deficiencies were identified: (1) the shift manager was unable to easily obtain the keys



needed to access the transfer and hot shutdown panels, which delayed taking the required actions; (2) directions for starting the safety chiller, if not already operating, were not provided, which could have delayed accomplishing the task; (3) the licensee had not accounted for 1.5 minutes needed by operators to perform required actions prior to evacuating the control room; (4) operators took 4 minutes to mitigate a spuriously open power-operated relief valve, whereas the analysis used 3 minutes; and (5) the 3.5 minutes needed to don the flash protective gear prevented completion of subsequent procedure steps within the time analyzed.

The licensee attributed root cause to a failure of operations to coordinate a revised safety requirement with plant personnel who understood the potential impact on the alternate shutdown time line. As immediate corrective actions, the licensee evaluated their time line and determined that sufficient margin existed and that the actions could be accomplished. The licensee initiated SMF-2005-000316-00 to take the appropriate corrective actions. Because this violation was determined to be of very low safety significance, it is being treated as a noncited violation, consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 05000445;446/2006003-02 Operators Unable to Meet Some Critical Action Times During Alternative Shutdown Walkthrough.

.3 Implementation of Temporary Instruction (TI) 2515/165 - Operational Readiness of Offsite Power and Impact on Plant Risk

a. Inspection Scope

The objective of TI 2515/165, "Operational Readiness of Offsite Power and Impact on Plant Risk," was to confirm, through inspections and interviews, the operational readiness of offsite power systems in accordance with NRC requirements. On March 13 through 17, 2006, the inspectors reviewed licensee procedures and discussed the attributes identified in TI 2515/165 with licensee personnel. In accordance with the requirements of TI 2515/165, the inspectors evaluated the licensee's operating procedures used to assure the functionality/operability of the offsite power system, as well as, the risk assessment, emergent work, and/or grid reliability procedures used to assess the operability and readiness of the offsite power system.

The information gathered while completing this Temporary Instruction was forwarded to the Office of Nuclear Reactor Regulation for further review and evaluation.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On April 10, 2006, the inspector conducted a telephonic exit meeting to present the emergency preparedness inspection results to Mr. M. Bozeman, Supervisor, Emergency Planning, who acknowledged the findings. The inspector confirmed that proprietary information was not provided or examined during the inspection.

On May 19, 2006, the inspector presented the occupational radiation safety inspection results to Mr. M. Kanavos, Plant Manager, and other members of his staff who acknowledged the findings. The inspector confirmed that proprietary information was not provided or examined during the inspection.

On May 22, 2006, the inspector presented the results of the notification form accuracy unresolved item closure to Mr. R. Kidwell, Licensing Engineer, who acknowledged the findings.

On May 22, 2006, the inspector discussed the results of the licensed operator requalification program inspection with Mr. Gary Struble, Operations Training Supervisor. The licensee acknowledged the findings presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On May 25, 2006, the inspector presented the maintenance effectiveness triennial inspection results to Mr. P.M. Polefrone, Plant Manager, and other members of licensee management at the conclusion of the onsite inspection. The inspector verified that no proprietary information was reviewed during the inspection.

On May 25, 2006, the inspector conducted a telephonic exit meeting with Mr. Fred Madden, Director, Regulatory Affairs, to discuss the significance of the finding that resulted from closeout of the alternative shutdown walkthrough unresolved item.

On June 29, 2006, the inspectors presented the resident inspection results to Mr. M. Blevins, Senior Vice President and Chief Nuclear Officer, and other members of licensee management. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION



## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee Personnel

J. Alldredge, Supervisor, Radiation Protection  
M. Blevins, Senior Vice President and Chief Nuclear Officer  
D. Bozeman, Manager, Emergency Planning  
S. Bradley, Supervisor, Health Physics, Radiation Protection & Safety Services  
T. Clouser, Manager, Shift Operations  
J. Curtis, Radiation Protection Manager, Radiation and Industrial Safety  
D. Ellis, Level III Qualified Data Analyst  
R. Flores, Vice President, Nuclear Operations  
M. Kanavos, Plant Manager  
S. Karpyak, Risk & Reliability Engineering Supervisor  
R. Kidwell, Licensing Engineer  
B. Knowles, Supervisor, Radiation Protection  
D. Kross, Director, Maintenance  
J. Lamarca, Engineering Smart Team Manager  
M. Lucas, Vice President Nuclear Engineering  
F. Madden, Director, Regulatory Affairs  
J. Mercer, Maintenance Rule Coordinator  
J. Meyer, Technical Support Manager  
W. Morrison, Maintenance Smart Team Manager  
P. Polefrone, Plant Manager  
V. Polizzi, Steam Generator Programs Engineer  
L. Pope, System Engineer  
R. Smith, Director, Operations  
S. Smith, Director, System Engineering  
G. Struble, Operations Training Supervisor  
J. Taylor, Engineering Smart Team Manager  
C. Tran, Engineering Programs Manager  
D. Wilder, Radiation and Industrial Safety Manager

#### NRC

D. Allen, Senior Resident Inspector  
A. Sanchez, Resident Inspector

### **ITEMS OPENED, CLOSED, AND DISCUSSED**

#### Opened

None

#### Opened and Closed

05000445;446/2006003-01    NCV    Three Examples of a Failure to Conspicuously Post a Radiation Area (Section 2OS1)

05000445;446/2006003-02 NCV Operators Unable to Meet Some Critical Action Times During Alternative Shutdown Walkthrough (Section 4OA5.2)

Closed

05000445/2004-003-00 LER Reactor Coolant System Leak Detection Instrumentation Inoperable for Periods Due to a Design Related Siphoning Condition (Section 4OA3.1)

05000446/2005-001-00 LER Unit 2 Containment Personnel Airlock Door Inoperable for a Period of Time Longer than Allowed by Technical Specifications (Section 4OA3.2)

05000446/2005-002-00 LER Auxiliary Feedwater System Actuation Due to Momentary Loss of the 138KV Switchyard (Section 4OA3.3)

05000445;446/2005005-02 URI Notification Form Accuracy Requires Additional Guidance (Section 4OA5.1)

05000445;446/2005008-01 URI Operators Unable to Meet Some Critical Action Times During Alternative Shutdown Walkthrough (Section 4OA5.2)

Discussed

None

**LIST OF DOCUMENTS REVIEWED**

**Section 1R05: Fire Protection**

STA-729, Control of Transient Combustibles, Ignition Sources and Fire Watches, Revision 7

STA-738, Fire Protection System/Equipment Impairments, Revision 6

FPI-101A, Unit 1 Safeguards Building Elevation 773'-0" Train "A" & "B" - RHR, SI & CS Pump Rooms, Revision 3

FPI-102A, Unit 1 Safeguards Building Elevation 790'-6", Revision 3

FPI-103A, Unit 1 Safeguards Building Elevation 810'-6" Rad. Pen. Area & Elec. Equip Rooms, Revision 3

FPI-106A, Unit 1 Safeguards Building Elevation 831'-6" Main Corridor, RB Access, & Electrical Equipment Area, Revision 4

FPI-401, Auxiliary Building Elevation 790'-6", Revision 3

## **Section 1R06: Flood Protection**

STA-696, Hazard Barrier Controls, Revision 2  
50.50 Screen 59SC-2004-001702-08-00  
SMF-2004-002217-00  
EVAL-2004-002217-01-00  
SMF-2005-002127-00  
59SC-2005-002127-01-00  
FDA-2005-002127-01-00  
SMF-2005-003667-00  
EVAL-2005-003667-01-00

## **Section 1R12: Maintenance Effectiveness- Routine**

SMF-2006-000302-00  
SMF-2006-000640-01  
SMF-2006-000707-00  
SMF-2006-001702-00  
SMF-2006-001206-00  
SMF-2006-001290-00  
SMF-2006-001344-00  
SMF-2006-002133-00  
SMF-2004-003379-00  
CPSES System Status Report for 1<sup>st</sup> Quarter FY06  
CPSES System Status Report for 4th Quarter FY05  
STA-744, "Maintenance Effectiveness Monitoring Program," Revision 3

## **Section 1R12: Maintenance Effectiveness- Triennial**

### Smart Forms

2004-000566-00	2005-003238-00	2004-003984-00
2004-003610-00	2005-003235-00	2005-002633-00
2005-000228-00	2005-003531-00	2005-000085-00
2005-002654-00	2005-004280-00	2005-002399-00
2005-003804-00	2005-000972-00	2005-003087-01
2006-000125-00	2005-000971-00	2005-003350-00
2006-001356-00	2005-000206-00	2005-003967-00
2006-000946-00	2004-003985-00	2005-002313-00
2005-003342-00		

### Procedures

"Performance Criteria Guide for Monitoring Maintenance Effectiveness," Revision 6, dated February 27, 2004

"Maintenance Effectiveness Monitoring Program, Maintenance Rule Review Panel Guidance Document," Revision 2, dated April 6, 1998

"Goal Setting and Monitoring Guide," Revision 3, dated February 26, 2004

"Maintenance Preventable Functional Failure Guide," Revision 4, dated May 23, 1999

OPT-443A, "Reactor Trip Breaker and Stationary Gripper Coil Response Time," Revision 3

STA-744, "Maintenance Effectiveness Monitoring Program," Revision 2, dated November 25, 1999

"Comanche Peak Performance Report," February 2005

"Maintenance Rule Function," February 27, 2006

"System Performance Criteria," October 29, 2004

#### Evaluations

EVAL-2001-002576-03-02	EVAL-2005-000164-01-00	EVAL-2005-002654-01-00
EVAL-2004-000427-01-00	EVAL-2005-000228-01-00	EVAL-2005-003804-01-00
EVAL-2004-003610-00	EVAL-2005-002399-00	EVAL-2006-000125-01-00
EVAL-2005-000085-05-00	EVAL-2005-002633-01-00	EVAL-2006-000287-02-00
EVAL-2005-000105-02-01		

#### Drawings

M1-0229, Sheet A, Flow Diagram Component Cooling Water System  
M1-0230, Flow Diagram Component Cooling Water System  
M1-0234, Flow Diagram Station Service Water System  
M1-0206, Flow Diagram Auxiliary Feedwater System  
M1-0230, Sheet A, Flow Diagram Component Cooling Water System  
M1-0229, Sheet B, Flow Diagram Component Cooling Water System  
M1-0233, Flow Diagram Station Service Water System

#### Miscellaneous

"Investigation of Failed Volume Booster Relays," Southwest Research Institute, submitted to TXU, October, 2005

SA-2004-044, "Maintenance Rule Periodic Assessment #6," February 17, 2005

01-020-259, "Determination of Adequacy of Line Shaft Bearing Lube Water Flow," dated January 4, 2006

#### **Section 1R15: Operability Evaluations**

SMF-2006-001674-00  
WO 5-06-505058-AB  
WO 5-06-505058-AC  
WO 5-06-505058-AD

## **Section 2OS1: Access Controls to Radiologically Significant Areas**

### Smart Forms

2005-3627, 2006-144, 2006-1787

### Procedures

NQA-3.02      Audit and Surveillance Programs, Revision 2  
RPI-602        Radiological Surveillance and Posting, Revision 27  
STA-660        Control of High Radiation Areas, Revision 9

## **Section 2OS2: ALARA Planning and Controls**

### Smart Forms

2005-4217, 2006-1762, 2006-1770, 2006-1795, 2006-1781

### Audits and Self-Assessments

EVAL-2005-010      Annual Radiation Protection Audit  
SA-2006-004        Radiation Protection Training Program  
SA-2005-059        Analysis of Personnel Contaminations during 1RF11

### Shielding Requests

06-03, 06-12, 06-13

### Radiation Work Permits

2005-1210            1RF11 Work Activities in Lower Loop Room 1/4 Room 1-154 I/L  
2005-1212            1RF11 Work Activities in 808' West Corridor Loop 1/4 Room 1-154 A/D  
2005-1300            N-1 Steam Generator Walkdowns  
2005-1308            Loop Room Scaffolding  
2005-1600            Refueling Activities During 1RF11  
2006-24              Containment Entry to perform minor maintenance during Modes 1 and 2  
2006-0221            Operations Valve Position Verifications  
2006-0224            GSI-191 Unit 1 and 2 Laser Templating and Rebar Scanning

### Procedures

STA-302              Station Records, Revision 20  
STA-650              General Health Physics Plan, Revision 5  
STA-655              Exposure Monitoring Program, Revision 14  
STA-656              Radiation Work Control, Revision 12  
RPI-606              Radiation Work and General Access Permits, Revision 14  
RPI-608              Control of Shielding, Revision 8

### Miscellaneous

ALARA Review Committee Meeting Minutes, July 5, 2005, through February 23, 2006.

## **Section 4OA1: Performance Indicator Verification**

### Procedures

Radiation Safety NRC Performance Indicators Job Aide, Definitions, and Flow Chart, February 14, 2006

## **Section 4OA2.2: Semiannual Trend Review**

Self-Assessment and Benchmarking Program Health Report- 1<sup>st</sup> Quarter 2006

CPSES Self-Assessment Report SA-2005-048, Operator Fundamentals

CPSES Self-Assessment Report SA-2005-026, Focused Self-Assessment of Engineering Human Performance Program Implementation

CPSES Self-Assessment Report SA-2005-060, Margin Management/Configuration Management Implementation in Engineering

Human Performance Program Health Indicators Package - 1<sup>st</sup> Quarter 2006

Center of Excellence 1<sup>st</sup> Quarter Site Roll-up and Trending Report

## **Section 4OA2.3: Selected Issue Followup - SMF-2004-002797-01**

FDA-1999-003133

EVAL-1999-003133-09-00

EVAL-2004-002720-01-01

59SC-2004-002720-01-00

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DBD-ME-302B, "Electrical Area Ventilation System," Revision 13

DBD-ME-302C, "Main Steam and Feedwater Area Ventilation System," Revision 10

## **Section 4OA5: Temporary Instruction TI 2515/165**

ABN-601, Response to a 138/345 KV System Malfunction, Revision 9

IPO-003A/B, Power Operations, Revisions 24/15

STA-604, Configuration Risk Management and Work Scheduling, Revision 6

STA-629, Switchyard Control, Revision 4

WCI-203, Weekly Surveillances / Work Scheduling, Revision 19

## LIST OF ACRONYMS

ABN	abnormal conditions procedure
ALARA	as low as reasonably achievable
CCW	component cooling water
CFR	<i>Code of Federal Regulations</i>
CPSES	Comanche Peak Steam Electric Station
EDG	emergency diesel generator
ERCOT	Electric Reliability Council of Texas
EVAL	evaluation
I/P	current to pneumatic
INC	instrument and control manual
LER	licensee event report
NCV	noncited violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
NUC	nuclear engineering manual
OPT	operations testing manual
PAR	protective action recommendation
PERC	plant event review committee
PI	performance indicator
SDP	significance determination process
SIP	safety injection pump
SMF	smart form
SOP	system operating procedure
SSC	structures, systems, or components
TDAFW	turbine driven auxiliary feed water
TI	temporary instruction
URI	unresolved item

