



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
611 RYAN PLAZA DRIVE, SUITE 400  
ARLINGTON, TEXAS 76011-4005

May 19, 2005

Mike Blevins, Senior Vice President  
and Chief Nuclear Officer  
TXU Power  
ATTN: Regulatory Affairs  
Comanche Peak Steam Electric Station  
P.O. Box 1002  
Glen Rose, TX 76043

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION, UNITS 1 and 2 - INSPECTION  
REPORT 05000445/2005008; 05000446/2005008

Dear Mr. Blevins:

On May 17, 2005, the Nuclear Regulatory Commission (NRC) completed an inspection at the Comanche Peak Steam Electric Station, Units 1 and 2. The enclosed report documents the inspection findings, which were discussed in a debrief meeting at the end of the onsite inspection on February 11, 2005, with Mr. R. Flores, Vice President Nuclear Operations, and other members of your staff and in a telephonic exit meeting with Mr. T. Hope, Manager, Regulatory Performance, and other members of your staff on May 17, 2005.

During this triennial fire protection inspection, the inspection team examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and the conditions of your license. The inspection consisted of selected examination of procedures and records, observations of activities and installed plant systems, and interviews with personnel.

No findings of significance were identified during this inspection.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response 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).

Sincerely,

//RA// CFO'Keefe for

Linda Joy Smith, Chief  
Plant Engineering Branch  
Division of Reactor Safety

Dockets: 50-445; 50-446  
Licenses: NPF-87; NPF-89

TXU Power

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Enclosure:  
NRC Inspection Report  
50-445/05-08; 50-446/05-08

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SISP Review Completed: Yes    ADAMS:    : Yes     No    Initials:   cfo    
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RIV:DRS/PEB	PEB	PEB	PEB	PEB
JMMateychick	TAMcConnell	RPMullikin	DHOverland	PAGoldberg
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C:DRP/A	C:PEB			
WDJohnson	LJSmith			
/RA/	<b>CFO'Keefe for</b>			
3/22/05	5/19 /05			

**ENCLOSURE**

U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

Dockets: 05000445; 05000446  
Licenses: NPF-87; NPF-89  
Report No.: 05000445/2005008; 05000446/2005008  
Licensee: TXU Power  
Facility: Comanche Peak Steam Electric Station, Units 1 and 2  
Location: FM-56  
Glen Rose, Texas  
Dates: January 24 through May 17, 2005  
Team Leader J. M. Mateychick, Senior Reactor Inspector, Plant Engineering Branch  
Inspectors: P. Goldberg, Reactor Inspector, Plant Engineering Branch  
T. McConnell, Reactor Inspector, Plant Engineering Branch  
D. Overland, Reactor Inspector, Plant Engineering Branch  
Accompanying Personnel: R. Mullikin, Consultant  
Approved By: Linda Joy Smith, Chief  
Plant Engineering Branch  
Division of Reactor Safety

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## SUMMARY OF FINDINGS

IR 05000445/05-08, IR 05000446/05-08; 01/11/2005-05/17/2005; Comanche Peak Steam Electric Station; Units 1 and 2; Fire Protection (Triennial)

The NRC conducted an inspection with a team of five regional inspectors. The inspection identified two unresolved items. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609 "Significance Determination Process." Findings for which the significance determination process does not apply are indicated by "No Color" or by the severity level of the applicable violation. The NRC described its program for overseeing the safe operation of commercial nuclear power reactors in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

Cornerstones: Initiating Events and Mitigating Systems

No findings of significance were identified.

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## REPORT DETAILS

### 1 REACTOR SAFETY

#### 1R05 Fire Protection

The purpose of this inspection was to review the Comanche Peak Steam Electric Station's fire protection program for selected risk-significant fire areas. Emphasis was placed on verification of the licensee's post-fire safe shutdown capability. The inspection was performed in accordance with the NRC regulatory oversight process using a risk-informed approach for selecting the fire areas and attributes to be inspected. The team used the Individual Plant Examination for External Events for the Comanche Peak Steam Electric Station to choose risk-significant areas for detailed inspection and review. Inspection Procedure 71111.05T, "Fire Protection (Triennial)," requires selecting three to five fire areas for review. The three areas reviewed during this inspection were:

1. Fire Area EC                      Electrical and Control Building Unit 1 and Unit 2 Train B Battery Rooms Elevation 792'-0"
2. Fire Area SB                      Unit 2 Safeguards Building General Areas Elevations 790'-6", 810'-6" and 831'-6" (Fire Zone 2SB4)
3. Fire Area SE                      Unit 2 Safeguards Building Train B Electrical Equipment Areas Elevations 831'-6" and 852'-6" (Fire Zones 2SE16 and 2SE18)

For each of these fire areas, the inspection focused on fire protection features, systems and equipment necessary to achieve and maintain safe shutdown conditions, and licensing basis commitments.

Documents reviewed by the team are listed in the attachment.

#### .1 Shutdown From Outside Main Control Room

##### a. Inspection Scope

The team reviewed the functional requirements identified by the licensee as necessary for achieving and maintaining hot shutdown conditions to ensure that at least one post-fire safe shutdown success path was available in the event of fire in each of the selected areas and alternative shutdown for the case of control room evacuation. The team reviewed piping and instrumentation diagrams of systems credited in accomplishing safe shutdown functions to independently verify whether licensee's shutdown methodology had properly identified the required components. The team focused on the following functions that must be available to achieve and maintain safe shutdown conditions:

- Reactivity control capable of achieving and maintaining cold shutdown reactivity conditions,

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- Reactor coolant makeup capable of maintaining the reactor coolant inventory,
- Reactor heat removal capable of achieving and maintaining decay heat removal,
- Supporting systems capable of providing other services necessary to permit extended operation of equipment necessary to achieve and maintain hot shutdown conditions,
- Verify that a safe shutdown can be achieved and maintained with and without off-site power.

A review was also conducted to ensure that all required components in the selected systems were included in the licensee's safe shutdown analysis. The team identified the systems required for each of the primary safety functions necessary to achieve and maintain shutdown conditions. These systems were then evaluated to identify the systems that interfaced with the selected fire areas and were the most risk significant systems required for reaching hot shutdown conditions.

b. Findings

No findings of significance were identified.

.2 Protection of Safe Shutdown Capabilities

a. Inspection Scope.

The team verified that at least one post-fire safe shutdown success path was free of fire damage in the event of a fire in the selected fire areas. Specifically, the team examined the separation of safe shutdown cables, equipment, and components within the same fire areas, and reviewed the licensee's methodology for meeting the requirements of 10 CFR 50.48, Appendix A to NRC Branch Technical Position 9.5-1, and 10 CFR 50, Appendix R Sections III.G, III.J, and III.O. In addition, the team reviewed license documentation, such as NRC safety evaluation reports, the Comanche Peak Steam Electric Station Updated Final Safety Evaluation Report, submittals made to the NRC by the licensee in support of the NRC's review of their fire protection program, and deviations from NRC regulations to verify that the licensee met license commitments.

b. Findings

No findings of significance were identified.

.3 Passive Fire Protection

a. Inspection Scope.

For the selected fire areas, the team evaluated the adequacy of fire area barriers, penetration seals, fire doors, electrical raceway fire barriers and fire rated electrical cables.



The team observed the material condition and configuration of the installed barriers, seals, doors, and cables. The team compared the as-installed configurations to the approved construction details and supporting fire tests. In addition, the team reviewed license documentation, such as NRC safety evaluation reports, and deviations from NRC regulations and the National Fire Protection Association (NFPA) code to verify that fire protection features met license commitments.

b. Findings

No findings of significance were identified.

.4 Active Fire Protection

a. Inspection Scope.

For the selected fire areas, the team evaluated the adequacy of fire suppression and detection systems. The team observed the material condition and configuration of the installed fire detection and suppression systems. The team reviewed design documents and supporting calculations. In addition, the team reviewed license basis documentation, such as NRC safety evaluation reports, and deviations from NRC regulations and the National Fire Protection Association (NFPA) codes to verify that fire suppression and detection systems met license commitments.

The team also observed an announced site fire brigade drill. Team members observed the fire brigade turnout, donning of protective gear, simulated fire fighting activities in the plant, communications between the fire brigade members and with operations personnel, operations support of fire brigade activities, and the licensee's critique of the drill performance.

b. Findings

No findings of significance were identified.

.5 Protection From Damage From Fire Suppression Activities

a. Inspection Scope

For the sample areas, the team verified that redundant trains of systems required for hot shutdown were not subject to damage from fire suppression activities or from the rupture or inadvertent operation of fire suppression systems including the effects of flooding. The team also verified that where redundant trains of systems were located in the same fire area, the electrical cables of one train were protected.

b. Findings

No findings of significance were identified.

## 6 Alternative Shutdown Capability

### a. Inspection Scope

The team reviewed Procedure ABN-803B, "Response To A Fire In The Control Room Or Cable Spreading Room," Revision 3. Procedure ABN-803B provided instructions for performing an alternative shutdown from the remote shutdown panel and for manipulating equipment locally in the plant. The team observed a timed walkthrough of the procedure with licensed and non-licensed operators to determine its adequacy to direct safe shutdown. The team verified that the minimum number of available operators, exclusive of those required for the fire brigade, could reasonably be expected to perform the procedure actions within the applicable plant shutdown time requirements, and that equipment labeling was consistent with the procedure. The team verified that procedures, tools, dosimetry, keys, lighting, and communications equipment were available to support successfully performing the procedure as intended. The team also reviewed records for training conducted on this procedure.

The team reviewed the time-critical manual actions identified by the licensee as being necessary to support alternate shutdown from outside the control room. Calculations and analyses, which provided the bases for these critical times, were also reviewed. The simulated completion times recorded during the procedure walk-through were then compared to the analytical values to verify that the procedure could be implemented as intended.

### b. Findings

Introduction. The team identified several examples where simulated operator actions during a timed walkthrough of Procedure ABN-803B, "Response To A Fire In The Control Room Or Cable Spreading Room," were not performed within the analyzed times of the Fire Safe Shutdown Analysis calculation, and that all actions were not able to be performed. This will be treated as an unresolved item (URI) pending a determination of significance and enforcement.

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.

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 due to 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

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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 outside 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 walkdown 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 due to 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 due to 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 (TSC). However, the TSC 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. Additional analysis was needed from the licensee to determine the impact on plant conditions caused by not being able to meet some of the critical times specified in the safe shutdown analysis. This will be tracked as an unresolved item (URI) pending completion of that analysis and review by the NRC.

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Enforcement. The enforcement implications of this finding will be determined upon review of the additional analysis needed to determine the safety significance. This finding is identified as an unresolved item (URI 05000445,446/2005008-01, Operators Unable to Meet Some Critical Action Times During Alternative Shutdown Walkthrough).

## .7 Circuit Analyses

### a. Inspection Scope

The team reviewed the licensee's post-fire safe shutdown analysis to verify that the licensee had identified both required and associated circuits that may impact safe shutdown. The NRC inspection of associated circuits had been the subject of a moratorium since November 2000, but was reinitiated in January 2005.

On a sample basis, the team verified that cables for equipment required to achieve and maintain hot shutdown conditions in the event of fire in selected fire zones had been properly identified. In addition, the team verified that these cables had either been adequately protected from the potentially adverse effects of fire damage, mitigated with approved manual operator actions, or analyzed to show that fire-induced faults (e.g., hot shorts, open circuits, and shorts to ground) would not prevent safe shutdown. In order to accomplish this, the team reviewed electrical schematics and cable routing data for power and control cables associated with each of the selected components.

Since the licensee utilized thermoset cables, the team reviewed the following cable failure modes for selected required and associated circuits:

- Spurious actuations due to any combination of conductors within a single multiconductor cable
- A maximum of two cables considered where multiple individual cables may be damaged by the same fire
- For cases involving direct current control circuits, the potential spurious operation due to failures of the control cables.
- For cases involving decay heat removal system isolation valves at high-pressure/low-pressure interfaces, the vulnerability of three-phase power cables due to three-phase proper polarity hot shorts.

In addition, on a sampling basis, the team reviewed the adequacy of selected electrical protective devices (e.g., circuit breakers, fuses, relays), breaker coordination, and the adequacy of electrical protection provided for nonessential cables which share a common enclosure (e.g., raceway, junction box, conduit, etc.) with cables of equipment required to achieve and maintain safe shutdown conditions.

For the selected fire areas, the team also reviewed the location and installation of diagnostic instrumentation that was necessary for achieving and maintaining safe shutdown conditions

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to ensure that in the event of a fire, this instrumentation would remain functional.

b. Findings

No findings of significance were identified.

.8 Communications

a. Inspection Scope

The team reviewed the communication systems required to implement fire fighting and operations to achieve and maintain safe shutdown. The team verified the contents of the safe shutdown lockers, the availability of portable radios for the fire brigade and plant operators, the availability of the Gai-Tronics page/party system, the fire alarm tone generator system, and verified the adequacy of the radio repeater systems and ensured they would be available, operable, and adequate for the performance of safe shutdown functions. The team assessed the capability of the communication systems to support the operators in the conduct and coordination of their required actions.

b. Findings

Procedure ABN-803B, "Response To A Fire In The Control Room Or Cable Spreading Room," required that the Shift Manager/ Unit Supervisor to make an "All Page" announcement in the event of a control room fire requiring evacuation of the control room. The design basis document for the communications system, DBD-EE-048, identified that the Gai-Tronics system could be damaged by a control room fire. This finding is discussed in Section 1R05.6.

.9 Emergency Lighting

a. Inspection Scope

The team reviewed the emergency lighting system required for safe shutdown activities in the selected fire areas to verify it was adequate for supporting the performance of manual actions required to achieve and maintain hot shutdown conditions. The team evaluated the adequacy of emergency lighting for access and egress routes to the areas where manual actions were required in Procedure ABN-803B, "Response to a Fire in the Control Room or Cable Spreading Room," Revision 3, at control stations and plant parameter monitoring locations. The team reviewed repetitive tasks for testing and test data trending to verify that the individual battery operated units were capable of supplying sufficient illumination. The team reviewed that the batteries had at least an 8-hour capacity. The team reviewed that the operability testing and maintenance of the lighting units followed licensee procedures and accepted industry practices and were consistent with the manufacturers recommendations.

b. Findings

No findings of significance were identified.

#### .10 Cold Shutdown Repairs

##### a. Inspection Scope

The team reviewed licensee procedures to determine whether repairs were required to achieve cold shutdown and to verify that the repair material was available on the site. The team verified that the licensee had pre-staged equipment necessary to perform the repairs, as required by procedure. The team also evaluated whether cold shutdown could be achieved within the required time using the licensee's procedures and repair methods.

##### b. Findings

No findings of significance were identified.

#### .11 Compensatory Measures

##### a. Inspection Scope

The team reviewed the licensee's program with respect to compensatory measures in place for out-of-service, degraded, or inoperable fire protection and post-fire safe shutdown equipment, systems or features.

The team reviewed Procedures STA-722, "Fire Protection Program;" STA-723, "Fire Protection Systems/Equipment Requirements;" and STA-738, "Fire Protection/Systems/Equipment Impairments" to determine whether the procedures adequately controlled compensatory measures for fire protection systems, equipment and features (e.g., detection and suppression systems and equipment, and passive fire barriers).

The team reviewed Procedure STA-604, "Configuration Risk Management and Work Scheduling," and Instruction Number WCI-203, "Weekly Surveillances/Work Scheduling," to determine whether the procedures adequately controlled compensatory measures for out-of-service, degraded, or inoperable post-fire safe shutdown equipment, systems or features.

##### b. Findings

Introduction. The team identified an unresolved item involving the adequacy of assessing and managing increases in risk due to out-of-service, degraded, or inoperable post-fire safe shutdown equipment, systems or features.

Description. The team reviewed the licensee's procedure STA-604, "Configuration Risk Management and Work Scheduling," and Instruction Number WCI-203, "Weekly Surveillances/Work Scheduling," for treatment of post-fire safe shutdown equipment.

Procedure STA-604 defined the Configuration Risk Management Program for assessing the

risk impact of taking equipment out-of-service. The program included requirements for developing Contingency Plans which are approved plans of compensatory measures. Detailed implementing instructions were provided in the licensee's Instruction Number WCI-203. The licensee's Configuration Risk Management program followed the guidance of NUMARC 93-01 which was endorsed by the NRC in Regulatory Guide 1.182, "Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants".

The licensee considered that the fire protection program minimized the risk of a significant fire. Therefore, potential fire events were neither imminent nor have a high probability of occurring during the planned out-of-service duration and do not have to be considered in the risk assessment. The licensee entered the issue into their corrective action program for further evaluation as SmartForm SMF-2005-000263-00.

The licensee identified the equipment to be used for the post-fire safe shutdown and demonstrated by analysis that one train of the required equipment would remain free from fire damage in each fire area. For multiple fire areas, only one train of equipment would be available to perform the post-fire safe shutdown function, therefore, taking that equipment out-of-service would increase the risk of core damage due to fire events above that estimated in the IPEEE.

As an example, consider a plan to remove Centrifugal Charging Pump 2-01 from service for maintenance. Technical Specification 3.5.2, "ECCS-Operating," allows a centrifugal charging pump to be inoperable for 7 days. The required action is to restore the pump to operable status within 7 days. For Fire Areas EM, EN and EO, which include the control room, the only high pressure makeup source assured to be free from fire damage and available for the post-fire safe shutdown is Centrifugal Charging Pump 2-01. There would be some increase in risk due to possible fires in these areas, since this was the only high pressure makeup source available. This increase in risk should be assessed and managed.

Analysis. The safety significance of this issue will be determined upon completion of the enforcement assesment.

Enforcement. Section (a)(4) of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," states, "Before performing maintenance activities (including but not limited to surveillance, post-maintenance testing, and corrective and preventive maintenance), the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. The scope of the assessment may be limited to structures, systems, and components that a risk-informed evaluation process has shown to be significant to public health and safety."

Technical Specification 5.5.18, "Configuration Risk Management Program (CRMP)", stated in part, "The Configuration Risk Management Program (CRMP) provides a proceduralized risk-informed assessment to manage the risk associated with equipment inoperability. The program applies to technical specification structures, systems, or components for which a risk-informed Completion Time has been granted. The program shall include the following elements: .... e. Provisions for considering other applicable risk significant contributors such as Level 2 issues, and external events, qualitatively or quantitatively." The team noted that

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“external events” includes fires.

Additional NRC staff review was needed to determine whether the licensee’s practices were in compliance with 10 CFR 50.65(a)(4). This will be tracked as an unresolved item pending completion of this review. URI 05000445,446/2005008-02, Assessing and Managing Maintenance Risk for Post-Fire Safe Shutdown Equipment.

#### 4OA2 Problem Identification and Resolution

##### a. Inspection Scope

The team reviewed a sample of SmartForms to verify that the licensee was identifying fire protection-related issues at an appropriate threshold and entering those issues into the corrective action program. A listing of Smart Forms reviewed is provided in the attachment to this report.

##### b. Findings

No findings of significance were identified.

#### 4OA6 Management Meetings

##### Debrief Meeting Summary

The team leader presented the inspection results to Mr. R. Flores, Vice President Nuclear Operations, and other members of licensee management at the conclusion of the onsite inspection on February 11, 2005.

At the conclusion of this meeting, the team leader confirmed to the licensee's management that materials examined during the inspection considered to be proprietary had been returned to the licensee.

##### Exit Meeting

On May 17, 2005, a telephone exit meeting was held with Mr. T. Hope, Manager, Regulatory Performance, and other licensee staff members, during which the team leader characterized the results of the inspection.



## KEY POINTS OF CONTACT

### Licensee

K. Apple, Fire Protection Maintenance Supervisor  
H. Beck, Fire Safe Shutdown Analysis  
O. Bhatti, IST Program  
R. Calder, Executive Assistant  
R. Flores, Vice President Nuclear Operations  
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M. Lucas, Vice President Nuclear Engineering  
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W. Morrison, Maint Smart Team Manager  
D. Pendleton, Assistant to Senior Vice President  
L. Slaughter, INPO Project Coordinator  
R. Smith, Operations Manager  
S. Smith, System Engineering Manager  
J. Stone, Operations Procedures  
J. Taylor, Engineering Smart Team Manager  
C. Tran, Engineering Programs Manager  
R. Wakeman, Fire Protection Engineer  
M. Wisdom, Fire Protection System Engineer

### NRC

D. Allen, Senior Resident Inspector

## ITEMS OPENED AND CLOSED

### Opened and Closed

05000445,446/2005008-01	URI	Operators Unable to Meet Some Critical Action Times During Alternative Shutdown Walkthrough (Section 1R05.6)
05000445,446/2005008-02	URI	Assessing and Managing Maintenance Risk for Post-Fire Safe Shutdown Equipment (Section 1R05.11)

## LIST OF DOCUMENTS REVIEWED

The following documents were selected and reviewed by the team to accomplish the objectives and scope of the inspection.

### CABLE ROUTING DATA

<u>Component</u>	<u>Component</u>	<u>Component</u>	<u>Component</u>
2-8701A	2-8701B	2-8702A	2-8702B
2-8811A	2-8811B	2-8812A	2-8812B
2-FI-4536A	2-FI-4537A	2-HV4776	2-LCV-0112B
2-LCV-0112C	2-TE-0443A	2-TE-0413A	2-TE-0423A

### CALCULATIONS

<u>Number</u>	<u>Title</u>	<u>Revision</u>
2-FP-0006	Determination of the Pressure and Flow at the Fire Pump Discharge	1
2-FP-0031	Hydraulic design calculation for the Unit 2 Safeguards Building, 852' 6" Elevation, Electrical Equipment Room (2-103) Fire Protection System 334.783-4221	1
2-FP-0036	Hydraulic design calculation for the Unit 2 Safeguards Building, 790' 6" (Rooms (2-063, 2-064, 2-070 and 2-071), Fire Protection System 334.783-4101	1
2-FP-0081	As-Built Combustible Loading Calculation Unit 2 Safeguards Building	2
2-EE-0041	Ampacity of Firezone R Cable in Randomly Filled Tray	0
2-ME-0282	Fire Safe Shutdown Analysis CPSES Unit 2	1 CCN# 1
EE-1E-2EB2-1	480 VAC Motor Control Center CP2-EPMCB-02 (2EB2-1) Bus Based Calculation	4
TNE-EE-CA-0008-163	Coordination Study - 480V Class IE Switchgear Buses	3
WCAP-11331	CPSES Thermal/Hydraulic Analysis of Fire Safe Shutdown Scenario	31714

### DESIGN BASIS DOCUMENTS

DBD-ME-001	CPSES Fire Protection Program	6
DBD-ME-020	Fire Safe Shutdown Analysis	7
DBD-EE-047	Lighting System	7
DBD-EE-048	Communication System	11
DBD-ME-215	Diesel Fuel Oil Storage and Transfer System	11
DBD-ME-311	Safety Chilled Water System	1

DRAWINGS

<u>Number</u>	<u>Title</u>	<u>Revision</u>
E1-0159	BOP Auxiliary Relay Rack 5 CP1-ECPRCR-14 External Connection Diagram	CP-17
E2-0004, Sheet A	6.9 KV Auxiliaries One Line Diagram Safeguards Buses	CP-18
E2-0005	480V Auxiliaries - One Line Diagram - Safeguards Buses	CP-12
E2-0005, Sheet A	480V Auxiliaries - One Line Diagram - Safeguards Buses	CP-14
E2-0006	480V Auxiliaries - One Line Diagram - Normal Buses	CP-10
E2-0006, Sheet A	480V Auxiliaries - One Line Diagram - Normal Buses	CP-11
E2-0007	Safeguard And Auxiliary Buildings - Safeguard 480V MCC's - One Line Diagram	CP-24
E2-0007, Sheet A	Safeguard And Auxiliary Buildings - Safeguard 480V MCC's - One Line Diagram	CP-21
E2-0007, Sheet B	Safeguards and Auxiliary Buildings Safeguard 480V MCC's One Line Diagram	CP-18
E2-0007, Sheet C	Safeguard And Auxiliary Buildings - Safeguard 480V MCC's - One Line Diagram	CP-25
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## ENGINEERING REPORTS

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ER-EE-005	Assessment of Rockbestos One Hour Fire Rated Cable at CPSES (Firezone "R" Cable)	0
ER-ME-067	Evaluation of Thermo-Lag Fire Barrier Systems	1
ER-ME-089	Resolution of NRC Information Notice IN-92-018, Potential Loss of Remote Shutdown Capability Following Control Room Fire	0

## PROBLEM IDENTIFICATION REPORTS - SmartForms (SMFs)

SMF-2002-000395-00	SMF-2004-000622-00	SMF-2005-000316-00*
SMF-2002-002656-00	SMF-2004-002718-00	SMF-2005-000318-00*
SMF-2002-002874-00	SMF-2004-004095-00	SMF-2005-000335-00*
SMF-2002-002937-00	SMF-2005-000197-01*	SMF-2005-000504-00*
SMF-2003-002620-00	SMF-2005-000251-00*	SMF-2005-000507-00*
SMF-2004-003908-00	SMF-2005-000263-00*	SMF-2005-000509-00*
SMF-2003-003979-00	SMF-2005-000271-00*	SMF-2005-000515-00*
SMF-2004-000048-00		

\* Issued due to inspection activities.

## PROCEDURES

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ABN-301	Instrument Air System Malfunction	10
ABN-803B	Response To A Fire In The Control Room Or Cable Spreading Room	3
ABN-804B	Response to Fire in the Safeguards Building	2
ABN-806B	Response To Fire In The Electrical Control Building	2
EOP-0.0B	Reactor Trip of Safety Injection	1
FIR-202	Fire Protection Inspections	4
FPI-102B	Fire Preplan Instruction Manual - Unit 2 Safeguards Building - Elevation 790'-0"	2

FPI-107B	Fire Preplan Instruction Manual - Unit 2 Safeguards Building - Elevation 852' - Electrical Equipment Area & Feedwater Penetration Area	2
FPI-502	Fire Preplan Instruction Manual - Electrical & Control Building Unit 1 & 2 Battery Rooms, 792'-0" Elevations	1
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OPT-216B	Remote Shutdown Operability Test	8
OWI-203	Operations Department Management Periodic Reviews	10
SOP-802	Control Room Ventilation	10
STA-604	Configuration Risk Management and Work Scheduling	6
STA-661	Non-Plant Equipment Storage and Use Inside Seismic Category I Structures	4
STA-722	Fire Protection Program	6
STA-723	Fire Protection Systems/Equipment Requirements	5
STA-729	Control of Transient Combustibles, Ignition Sources and Fire Watches	7
STA-738	Fire Protection /Systems/Equipment Impairments	6

MISCELLANEOUS DOCUMENTS

<u>Number</u>	<u>Title</u>	<u>Revision</u>
	Comanche Peak Steam Electric Station Fire Protection Report Unit 1 and Unit 2	36052
	Comanche Peak Fire Induced Circuit Failure Assessment	-2004
	Comanche Peak Performance Report	December 2004
CPSES Self-Assessment Number SA-2004-058	RIS 2004-03 Impact Assessment	38244
LO44.SYS.FP1	CPSES Simulator Training Scenario ABN-803 Scenario	38335
PO48.SYS.FP1	Instructor Lesson Plan ABN-803/Fire in Control Room/Cable Spread Room	37384

ER-EA-006	Individual Plant Examination of External Events Fire Evaluation for Comanche Peak Steam Electric Station	April 1995
ER-EA-008	Individual Plant Examination of External Events for Severe Accident Vulnerabilities- Comanche Peak Steam Electric Station	34870
EVAL-2004-003908- 02-00	Management and Control of Combustible Storage Areas	0
EVAL-2005-000263- 01-00	White Paper Addressing Post-Fire Safe Shutdown Equipment Compensatory Actions	0
FSAR Section 9.5.1	Fire Protection System	Amendment 97
Instruction No. FPI- 104A	U-1, Train 'A' Diesel Generator & Equipment Elev. 810' and Fuel Oil Day Tank Room Elev. 844'	3
Instruction No. WCI- 203	CPSES Work Control Instruction Manual Weekly Surveillances / Work Scheduling	18
Instruction No. WCI- 607	Fluid Leak Management Process	0
NUMARC 93-01	Industry Guidelines for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants	3
Vendor Catalog W-1	Electroswitch Type W and W-2 Switches	36038
50-445/87-22	NRC Inspection Report	32153
50-445/92-49	NRC Inspection Report	33973
50-445;50-446/93-08	NRC Inspection Report	34022
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