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

February 8, 2008

Mike Blevins, Executive Vice President
and Chief Nuclear Officer
Luminant Generation Company, LLC
ATTN: Regulatory Affairs
Comanche Peak Steam Electric Station
P.O. Box 1002
Glen Rose, TX 76043

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION - NRC INTEGRATED INSPECTION REPORT 05000445/2007005 AND 05000446/2007005

Dear Mr. Blevins:

On December 31, 2007, 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 report documents the inspection findings that were discussed on January 2, 2008, with Tim Hope, Nuclear Licensing Manager, and members of your staff.

This inspection examined activities conducted under your licenses as they relate 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.

Based on the results of this inspection, two self-revealing findings of very low safety significance (Green) were identified. Both of these findings were determined to involve violations of NRC requirements. Additionally, licensee-identified violations which were determined to be of very low safety significance are listed in this report. However, because of the very low safety significance and because they are entered into your corrective action program, the NRC is treating these findings as noncited violations (NCVs) 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, U.S. Nuclear Regulatory Commission, Region IV, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011-4005; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Comanche Peak Steam Electric Station.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be 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/

Claude E. Johnson, Chief
Project Branch A
Division of Reactor Projects

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

Enclosure:
NRC Inspection Report 05000445/2007005
and 05000446/2007005
w/attachment: Supplemental Information

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SUNSI Review Completed: _CEJ_ ADAMS: √ Yes ☐ No Initials: _CEJ__
√ Publicly Available ☐ Non-Publicly Available ☐ Sensitive √ Non-Sensitive

R:_REACTORS_CPSES\2007\CP2007-05 DBA.wpd

| RIV:RI:DRP/A | SRI:DRP/A | RI/EB2 | SRI:DRP/A |
|---|---|---|---|
| AASanchez;mjs | JLDixon | SMAlferink | DBAllen |
| E-CEJ /RA/ | E-CEJ /RA/ | /RA/ | /RA electronic/ |
| 1/28/08 | 1/29/08 | 2/4/08 | 1/28 /08 |

| C:DRS/EB1 | C:DRS/OB | C:DRS/EB2 | C:DRS/PSB |
|---|---|---|---|
| RLBywater | RELantz | LJSmith | MPShannon |
| /RA/ | /RA LMG for/ | /CFO for/ | /RA/ |
| 1/23/08 | 1/23/08 | 1/23/08 | 1/23/08 |

| C:DRP/A | | | |
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| CEJohnson | | | |
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| 2/8/08 | | | |

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**U.S. NUCLEAR REGULATORY COMMISSION**

REGION IV

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|---|---|
| Dockets: | 50-445, 50-446 |
| Licenses: | NPF-87, NPF-89 |
| Report: | 05000445/2007005 and 05000446/2007005 |
| Licensee: | Luminant Generation Company, LLC |
| Facility: | Comanche Peak Steam Electric Station, Units 1 and 2 |
| Location: | FM-56, Glen Rose, Texas |
| Dates: | September 22 through December 31, 2007 |
| Inspectors: | D. Allen, Senior Resident Inspector<br>A. Sanchez, Resident Inspector<br>J. Dixon, Senior Resident Inspector, South Texas Project<br>S. Alferink, Reactor Inspector, Engineering Branch 2<br>D. Stearns, Health Physicist<br>P. Elkmann, Emergency Preparedness Inspector |
| Approved By: | C. E. Johnson, Chief, Project Branch A<br>Division of Reactor Projects |
| Attachment: | Supplemental Information |

SUMMARY OF FINDINGS

IR 05000445/2007005, 05000446/2007005; 09/22/2007-12/31/2007; Comanche Peak Steam Electric Station, Units 1 and 2. Integrated Resident and Regional Report; Access Control to Radiologically Significant Areas, Identification & Resolution of Problems.

This report covered a 3-month period of inspection by three resident inspectors, an Engineering Branch reactor inspector, an emergency preparedness inspector, and an occupational radiation safety inspection by a health physicist. Two Green self-revealing findings, both of which were noncited violations, were identified. Three licensee identified violations are also documented in this report. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using 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: Initiating Events

- Green: A Green self-revealing noncited violation of Technical Specification 5.4.1.a was identified for the failure to use a procedure appropriate to the circumstances when performing maintenance on safety-related equipment. Specifically, on October 22, 2006, the licensee used a procedure not appropriate to the circumstances when making adjustments to the Exhaust Pilot Valve 2-HV-2452-1-PR3 on the Main Steam Line 2-04 to Auxiliary Feedwater Pump Turbine Steam Supply Valve 2-HV-2452-1. The adjustments to the exhaust pilot valve eventually led to three inadvertent operations of the turbine driven auxiliary feedwater pump on March 12, 2007. The licensee entered the finding into their corrective action program. One corrective action included adding additional information and guidance to the procedures.

  This issue was determined to be more than minor because it is similar to Example b of Section 4, "Insignificant Procedural Errors," in Manual Chapter 0612, Appendix E, "Examples of Minor Issues." Specifically, this issue is more than minor because it led to a plant transient that resulted in a reduction in reactor power. Additionally, this issue is associated with the Initiating Events cornerstone attribute of human performance and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. This finding was determined to be of very low safety significance because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. The cause of the finding is related to the cross-cutting aspect of Human Performance in that the licensee failed to use a systematic decision making process to determine unintended consequences that would occur in decreasing the stroke time of the exhaust pilot valve (H.1.(a)) (Section 4OA2).

Cornerstone: Occupational Radiation Safety

- Green. The inspector reviewed a self-revealing noncited violation of 10 CFR 20.1501(a) for failure to conduct a radiological survey. Specifically, on April 16, 2007, a worker's electronic dosimeter alarmed when the individual attempted to move a bag containing a small vacuum cleaner from a posted contaminated and radiation area. The bag of materials had not been surveyed for radiation levels and, therefore, had not been labeled to indicate the potential hazard. The bag was subsequently surveyed and found to have radiation levels of 600 millirem per hour on contact and 150 millirem per hour at 30 centimeters from the surface. Corrective actions include counseling of personnel, evaluation of possible organizational changes, and generation of a training request to include this event in future training.

  The failure to conduct a radiological survey is a performance deficiency. This finding is greater than minor because it is associated with the Occupational Radiation Safety Program and Process attribute and affected the cornerstone objective, which is to ensure adequate protection of worker health and safety from exposure to radiation. The failure to perform the radiation survey led to a worker receiving unintended and additional exposure. Using the Occupational Radiation Safety Significance Determination Process, the inspector determined that the finding was of very low safety significance because it did not involve: (1) as low as is reasonably achievable planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. In addition, this finding has a cross-cutting component associated with human performance and work coordination because the licensee failed to keep workers apprised of work status and plant conditions that may affect work activities prior to removing contaminated items from the reactor containment building (H.3(b)) (Section 2OS1).

B. Licensee-Identified Violations

Violations of very low safety significance which were identified by the licensee have been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into their corrective action program. These violations and corrective actions are listed in Section 4OA7 of this report.

## REPORT DETAILS

Summary of Plant Status

Comanche Peak Steam Electric Station (CPSES) Unit 1 began the inspection period operating at 100 percent power. On December 13, while performing the monthly control rod repositioning, Control Rod J13 (in Shutdown Bank B) dropped to the full in position. The reactor power was subsequently reduced to less than 50 percent. Upon recovery of the control rod, reactor power was restored to 100 percent on December 15, 2007.

CPSES Unit 2 operated at 100 percent power for the duration of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignment

.1 Partial System Walkdown (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 1 Residual Heat Removal (RHR) System 1-01 in accordance with System Operating Procedures Manual (SOP) SOP-1-02A, “Residual Heat Removal System,” Revision 15, while RHR System 1-02 (Train B) was inoperable for scheduled maintenance and surveillance testing on November 1, 2007

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

.2 Detailed Semiannual System Walkdown (71111.04S)

a. Inspection Scope

The inspectors conducted a detailed semiannual inspection of the control room air conditioning system, to verify the functional capability of the system. The inspectors referenced and used the following documents to verify the proper system alignment, electrical power supply, and setpoints:

- SOP-802, “Control Room Ventilation System,” Revision 11

- Drawing M1-0304, “Ventilation Control Room Air Conditioning,” Revision CP-34
- Operations Department Administration Manual ODA-308, “LCO Tracking Program,” Revision 11
- Design Basis Document DBD-ME-304, “Control Room Air Conditioning System,” Revision 17
- Design Basis Document DBD-ME-003, “Control Room Habitability,” Revision 10

The inspectors also reviewed recent corrective action documents, system health reports, outstanding work requests, and design issues to determine if any of these items impact the system’s ability to operate as designed or indicated a degradation in capability. A complete field walkdown was performed by the inspectors during the week of December 17, 2007.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

Fire Area Tours

a. Inspection Scope

The inspectors walked down the plant areas listed below to assess the material 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 material 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.

- Fire Zone SG010 – Unit 1 Train A Emergency Diesel Generator (EDG) rooms 84, 99B and 99D on 810 foot and 844 foot elevations on October 9, 2007
- Fire Zone AA21F - Auxiliary Building 852 foot elevation on November 4, 2007

- Fire Zone 2SB4 - Unit 2 Safeguards Building 790 foot elevation on November 5, 2007

- Fire Zones EA54, EA57 through EA61 - Electrical and Control Building 792 foot elevation, Units 1 and 2 Train C inverter and battery rooms on November 6, 2007

- Fire Zone 2SI012 - Unit 2 Train B EDG rooms 2-85, 2-99A, and 2-99C on November 6, 2007

The inspectors completed five samples.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11Q)

a. Inspection Scope

On October 25, 2007, the inspectors observed examination simulator scenarios with two different operating crews. The scenario began at 100 percent reactor power. The following events then took place: (1) a heater drain pump failure causing a runback to 800 MWe; (2) an unisolable condenser vacuum leak that caused the operators to manually trip the reactor; (3) a main steam leak from Steam Generator 1-4 outside of containment; and (4) an automatic Phase A containment isolation failure. The scenario was terminated following the crew demonstrating its ability to isolate the faulted steam generator. An Alert emergency classification was declared and the notification was made in a timely manner.

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 operators were identifying crew performance deficiencies as applicable.

The inspectors also reviewed the quality of the examination scenario for qualitative and quantitative attributes according to Appendix A of this inspection procedure.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

Routine Maintenance Effectiveness Inspection

a. Inspection Scope

The inspectors reviewed the two maintenance activities listed below to: (1) verify the appropriate handling of structure, system, and component (SSC) performance or condition problems; (2) verify the appropriate handling of degraded SSC functional performance; (3) evaluate the role of work practices and common cause problems; and (4) evaluate the handling of SSC issues reviewed under the requirements of the Maintenance Rule, 10 CFR Part 50, Appendix B, and the Technical Specifications (TS).

- Unit 2 Component Cooling Water Heat Exchanger 2-02 emergent heat exchanger cleaning activities stemming from macro-fouling that caused unexpected unavailability, documented in Smart Form (SMF) SMF-2007-2444-00

- Unit 1 and 2 atmospheric relief valve isolation valves' remote operator modification that resulted in a number of hours of unavailability for the system

The inspectors completed two samples.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed the five below listed assessment activities to verify: (1) performance of risk assessments when required by 10 CFR 50.65(a)(4) and site procedures prior to changes in plant configuration for maintenance activities and plant operations; (2) the accuracy, adequacy, and completeness of the information considered in the risk assessment; (3) that the licensee recognizes, and/or enters as applicable, the appropriate risk category according to the risk assessment results and site procedures; and (4) the licensee identified and corrected problems related to maintenance risk assessments.

- Emergent work for troubleshooting Turbine Driven Auxiliary Feedwater (TDAFW) Steam Admission Valve 2-HV-2452-2, in conjunction with the rescheduled remote shutdown panel operability test of the auxiliary feedwater (AFW) system, reviewed on October 11, 2007

- Scheduled and emergent work activities for the week of October 7 through 13, 2007, including scheduled outage of offsite power via Transformer XST1, and routine surveillances of EDG 1-01 and TDAFW Pump 2-01, reviewed on October 15, 2007

- Scheduled and emergent work activities for the week of October 14 through 20, 2007, including scheduled outage of the 138 kV line from the DeCordova station and routine surveillances of EDG 2-01 and TDAFW Pump 1-01, reviewed on October 15, 2007

- Scheduled EDG 2-02 surveillance testing with the 138 kV DeCordova power line de-energized for line and tower modification (at the DeCordova substation), which required the safety-related buses to be realigned to their alternate power source, Transformer XST2 (supplied from the 345 kV switchyard), reviewed on October 31, 2007

- Scheduled 345 kV Transformer XST2 maintenance outage, scheduled surveillance run of EDG 2-02, and the emergent corrective maintenance on EDG 1-02 to replace Fuel Pump 6L, reviewed November 26-28, 2007

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 UFSAR 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:

- SMF-2007-3098-00, documents the operability determination for piping insulation not included in the Combustible Loading Calculation 0210-063-0002 for Unit 1 Train A containment spray room, reviewed on November 26, 2007

- SMF-2007-2218-00, documenting incorrect information used in the calculations for the Units 1 and 2 refueling water storage tank setpoints and the minimum containment flood levels, and the corrective actions taken, reviewed on December 4, 2007

- SMF-2007-3107-00, documenting Main Steam Line 1-01 before main steam isolation valve drip pot isolation Valve 1-HV-2409 closing stroke time to be in the alert range, reviewed on December 5, 2007

- SMF-2007-2909-00, documents the operability determination of the Unit 2 TDAFW pump following the discovery of a leak in the 2-HV-2452-2 steam admission valve, reviewed on December 11-12, 2007

The inspectors completed four samples.

b. Findings

No findings of significance were identified.

1R19 Post-maintenance Testing (71111.19)

a. Inspection Scope

The inspectors selected the below listed post-maintenance test activity of a risk-significant component. The inspectors: (1) reviewed the applicable licensing basis and/or design basis documents to determine the safety functions, (2) evaluated the safety functions that may have been affected by the maintenance activity, and (3) reviewed the test procedure to ensure it adequately tested the safety function that may have been affected. The inspectors either witnessed or reviewed test data to verify that acceptance criteria were met, plant impacts were evaluated, test equipment was calibrated, procedures were followed, jumpers were properly controlled, the test data results were complete and accurate, the test equipment was removed, the system was properly realigned, and deficiencies during testing were documented. The inspectors also reviewed the UFSAR to determine if the licensee identified and corrected problems related to post-maintenance testing.

- Unit 1 RHR Valve 1-8812A, Refueling Water Storage Tank to RHR Pump 1-01 suction valve, in accordance with Operations Testing Manual (OPT) OPT-512A, "RHR and SI Subsystem Valve Test," Revision 9, following a major inspection of the valve performed on October 11, 2007

The inspectors completed one sample.

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:

- Unit 2 remote shutdown panel surveillance test in accordance with OPT-216B, "Remote Shutdown Operability Test," Revision 9, observed on October 11, 2007

- Unit 1 RHR Pump 1-01 (inservice test) surveillance in accordance with OPT-203A, "Residual Heat Removal System," Revision 15, observed on October 11, 2007

The inspectors completed two 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 verified that Inspection Procedure 71114.04 was not documented in an inspection report during the period January through December 2007 because, (1) the licensee did not submit changes to their Emergency Plan or emergency plan implementing procedures that required regulatory review, or (2) all changes to the licensee's emergency plan and implementing procedures implemented during the inspection period were determined to be of minor significance, not requiring documentation according to the criteria of Inspection Procedure 71114.04.

The inspector completed one sample.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06 and 71114.07)

a. Inspection Scope

For the two below listed drill and simulator-based training evolutions contributing to drill/exercise performance (DEP) and emergency response organization drill participation (ERO) performance indicators, the inspectors: (1) observed the training evolution to identify any weaknesses and deficiencies in classification, notification, and protective action recommendations development activities; (2) compared the identified weaknesses and deficiencies against licensee identified findings to determine whether the licensee is

properly identifying failures; and (3) determined whether licensee performance is in accordance with the guidance of the Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, acceptance criteria.

- October 17, 2007, Force-on-Force exercise, Day Two

- November 8, 2007, emergency preparedness exercise, observed from the simulator and the emergency operations facility, with the occurrence of an earthquake and subsequent damage to the spent fuel pool, resulting in the declaration of a General Emergency.

The inspectors completed two samples.

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

- Self-assessments, audits, licensee event reports, and special reports related to the access control program since the last inspection

- Adequacy of the licensee's internal dose assessment for any actual internal exposure greater than 50 millirem committed effective dose equivalent

- Corrective action documents related to access controls

- Radiation work permit briefings and worker instructions

- Changes in licensee procedural controls of high dose rate - high radiation areas and very high radiation areas

- Posting and locking of entrances to all accessible high dose rate - high radiation areas and very high radiation areas

- Radiation worker and radiation protection technician performance with respect to radiation protection work requirements

The inspector completed 12 of the required 21 samples.

b. Findings

Introduction. The inspector reviewed a self-revealing noncited violation of 10 CFR 20.1501(a) for the failure to evaluate the actual radiological hazards before removing a bag of items from a posted area in containment.

Description. On April 16, 2007, a worker's electronic dosimeter alarmed when the individual attempted to move a bag containing a small vacuum cleaner from a posted area inside containment to the control point located at the entrance to containment. The bag of materials had not been surveyed for radiation levels and therefore had not been labeled to indicate the potential hazard.

After performance of an integrated leak rate test a small portable vacuum used to clean up broken glass was left in a posted contaminated area near the refuel cavity. A discussion was held between the decontamination technicians and the radiation protection technician concerning the cleanup of the broken glass, but the radiological status of the vacuum was not discussed. The radiation protection technician intended to survey the vacuum, but other activities distracted the technician from evaluating the area.

After shift turnover, containment cleanup started, including removal of material from inside the posted contaminated area on the 860' elevation near the reactor cavity. Arrangements were made with radiation protection and maintenance services to remove the items from the contaminated area without a survey, and to perform the survey at the containment exit area on the 832' elevation. The vacuum was placed in a bag at the contamination area boundary. During transport of the bag to the control point on the 832' elevation, a maintenance service person received an unanticipated dose rate alarm from the bag containing the vacuum. Surveys performed on the vacuum indicated 600 millirem per hour on contact and 150 millirem per hour at 30 centimeters. As corrective action, the licensee counseled personnel who authorized the tagging of material at a location other than at the contamination area, generated actions to consider organizational changes, and generated a training request to include this event in future training.

Analysis. The failure to perform a radiological survey is a performance deficiency. This finding is greater than minor because it is associated with the Occupational Radiation Safety Program and Process attribute and affected the cornerstone objective, which is to ensure adequate protection of worker health and safety from exposure to radiation. The failure to perform the radiation survey led to a worker receiving unintended and additional exposure. Using the occupational radiation safety significance determination process, the inspector determined that the finding was of very low safety significance because it

did not involve: (1) as low as is reasonably achievable (ALARA) planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. In addition, this finding had a crosscutting component associated human performance and work coordination because the licensee failed to keep workers apprised of work status and plant conditions that may affect work activities prior to removing contaminated items from the reactor containment building (H.3(b)).

Enforcement. Part 20.1501(a) of Title 10 of the Code of Federal Regulations states that each licensee shall make, or cause to be made, surveys that: (1) may be necessary for the licensee to comply with the regulations in this part; and (2) are reasonable under the circumstances to evaluate the magnitude and extent of radiation levels, concentrations or quantities of radioactive material, and the potential radiological hazards. Part 20.1003 of Title 10 of the Code of Federal Regulations defines survey as an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of radioactive material or other sources of radiation. Part 20.1201 requires the licensee to control the occupational dose to individual adults. Contrary to these requirements, radiation protection technicians failed to survey a bag of contaminated material prior to workers moving the bag from a posted contaminated area. Because the failure to perform a radiological survey is of very low safety significance and has been entered into the licensee's corrective action program (Smart Form 2007-1337-00), this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy: (NCV 05000445;446/2007005-01, "Failure To Evaluate Radiological Conditions").

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
- 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

- Person-hour estimates provided by maintenance planning and other groups to the radiation protection group with the actual work activity time requirements
- Post-job (work activity) 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
- Method for adjusting exposure estimates, or re-planning work, when unexpected changes in scope or emergent work were encountered
- Records detailing the historical trends and current status of tracked plant source terms and contingency plans for expected changes in the source term due to changes in plant fuel performance issues or changes in plant primary chemistry
- Radiation worker and radiation protection technician performance during work activities in radiation areas, airborne radioactivity areas, or high radiation areas
- Self-assessments, audits, and special reports related to the ALARA program since the last inspection
- Corrective action documents related to the ALARA program and follow-up activities, such as initial problem identification, characterization, and tracking
- Effectiveness of self-assessment activities with respect to identifying and addressing repetitive deficiencies or significant individual deficiencies

The inspector completed 12 of the required 15 samples and 3 of the optional samples.

b. Findings

No findings of significance were identified.

## 4. OTHER ACTIVITIES

### 4OA1 Performance Indicator (PI) Verification (71151)

.1 Mitigating 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 5. Reactor operator logs, limiting condition for operation action requirement logs, EVAL-2006-2236-01, EVAL-2006-2750-01, SMF-2006-2750-00,

EVAL-2006-3636-01, EVAL-2007-1172-01, EVAL-2007-2208-01, EVAL-2007-2846-01, and licensee event reports submitted between April 2006 and September 2007, 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.

.2 Occupational Radiation Safety Cornerstone

a. Inspection Scope

Occupational Exposure Control Effectiveness

The inspector reviewed licensee documents from April 1 through September 30, 2007. 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, "Regulatory Assessment Indicator Guideline," Revision 5). 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 the performance indicator data. In addition, the inspector toured plant areas to verify that high radiation, locked high radiation, and very high radiation areas were properly controlled. Performance indicator definitions and guidance contained in NEI 99-02, Revision 5, were used to verify the basis in reporting for each data element.

The inspector completed the required sample (1) in this cornerstone.

b. Findings

No findings of significance were identified.

.3 Public Radiation Safety Cornerstone

a. Inspection Scope

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

The inspector reviewed licensee documents from April 1 through September 30, 2007. Licensee records reviewed included corrective action documentation that identified occurrences for liquid or gaseous effluent releases that exceeded performance indicator thresholds and those reported to the NRC. The inspector interviewed licensee personnel that were accountable for collecting and evaluating the performance indicator data. Performance indicator definitions and guidance contained in NEI 99-02, Revision 5, were used to verify the basis in reporting for each data element.

The inspector completed the required sample (1) in this cornerstone.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

The inspectors performed a daily screening of items entered into CPSES's corrective action program. This assessment was accomplished by reviewing SMFs and event trend reports and attending daily operational meetings. The inspectors: (1) verified that equipment, human performance, and program issues were being identified by CPSES at an appropriate threshold and that the issues were entered into the corrective action program; (2) verified that corrective actions were commensurate with the significance of the issue; and (3) identified conditions that might warrant additional follow-up through other baseline inspection procedures.

b. Findings

No findings of significance were identified.

.2 Semiannual Trend Review

a. Inspection Scope

On December 21, 2007, 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:

- Corrective Action Documents (Smart Forms)
- System Health Reports
- Planned Maintenance Work Week Critiques
- CPSES Nuclear Overview Department Evaluation Reports (Audits)

- Human Performance Program Health Indicators Package
- Corrective Action Program Health report
- Station Reliability Issues
- Degraded conditions evaluated in accordance with Generic Letter 91-18
- CPSES Self-Assessment Reports

b. Findings and Observations

No findings of significance were identified. The inspectors did note that the licensee was implementing a new process for capturing and displaying equipment performance parameters for the purpose of trending. The inspector's initial observation was that this should assist operations and engineering in reviewing data and identifying trends in a more timely manner. The inspector did not identify any additional trends.

.3 Selected Issue Follow-Up Inspection - Cumulative Effects of Operator Workarounds

a. Inspection Scope

The inspectors reviewed the cumulative effects of the operator workarounds to determine: (1) the reliability, availability, and potential for misoperation of a system; (2) if multiple mitigating systems could be affected; (3) the ability of operators to respond in a correct and timely manner to plant transients and accidents; and (4) if the licensee has identified and implemented appropriate corrective actions associated with operator workarounds.

b. Findings

No findings of significance were identified.

.4 Selected Issue Follow-Up Inspection - Review of Inadvertent Actuations of Unit 2 Turbine Driven Auxiliary Feedwater Pump

a. Inspection Scope

The inspectors reviewed the circumstances, events, and issues surrounding three inadvertent operations of the Unit 2 TDAFW pump on March 12, 2007. These actuations led to a 60-day notification to the NRC Operations Center. This issue was selected for review due to the risk significance of the TDAFW pump, and the event resulting in a reduction in power and entry into a TS Limited Condition for Operation with a shutdown action requirement.

As part of the review, the inspectors reviewed procedures, work orders, and smart forms associated with this event. The inspectors reviewed the root cause analysis to assess the detail of the review, adequacy of the root cause, and proposed corrective actions.

The licensee's investigation determined that the root cause of the actuations was the maintenance stroke timing restrictions. The inspectors discussed the events and analysis with system engineering and the root cause analyst.

The inspectors completed two samples of selected issue follow-up.

b. Findings and Observations

Introduction: A Green self-revealing noncited violation of TS 5.4.1.a was identified for the failure to use a procedure appropriate to the circumstances when performing maintenance on safety-related equipment. Specifically, the licensee used a procedure not appropriate to the circumstances when making adjustments to the Exhaust Pilot Valve 2-HV-2452-1-PR3 on the Main Steam Line 2-04 to Auxiliary Feedwater Pump Turbine Steam Supply Valve 2-HV-2452-1. The adjustments to the exhaust pilot valve eventually led to three inadvertent operations of the TDAFW pump.

Description: On October 8, 2006, the licensee replaced the Exhaust Pilot Valve 2-HV-2452-1-PR3 and rebuilt the pressure regulator on Valve 2-HV-2452-1 as a scheduled preventive maintenance activity. These activities were performed under Work Order 03-05-341936-01. The as-found actuation pressure for the old exhaust pilot valve and the as-left actuation pressure for the new exhaust pilot valve were recorded as 27.2 psig. The licensee did not perform post work testing of valve 2-HV-2452-1 at that time.

Around October 15, 2006, while in Mode 5, the licensee performed post work testing of Valve 2-HV-2452-1 using procedure OPT-206B, "AFW System," Revision 18, Section 8.2.3. Valve 2-HV-2452-1 failed to meet the post work test acceptance criteria by opening too slowly. On October 22, 2006, while in Mode 4, the licensee again performed post work testing on Valve 2-HV-2452-1 using procedure OPT-206B. Again, the valve failed to meet the post work test acceptance criteria by opening too slowly, and it became a Mode 3 restraint to leaving the outage.

The licensee assembled a team to resolve the slow opening of Valve 2-HV-2452-1. The team determined that reducing the actuation pressure of the exhaust pilot valve would allow the Valve 2-HV-2452-1 air actuator to exhaust faster, which would reduce the amount of time the valve took to open. The valve team worked under Work Order 03-05-341936-01 and rotated the exhaust pilot valve adjustment screw to decrease the actuation pressure. Later testing determined that this adjustment decreased the actuation pressure to approximately 0 psig.

Work Order 03-05-341936-01 included Data Sheet MDA-1105-3, "TSS Valve Data Sheet," which contained information and instructions for Valve 2-HV-2452-1. The data sheet specifically noted that "minor adjustments of PR2 [throttle valve] needle valve may be necessary in order to satisfy valve stroke time per OPT-206B." The data sheet, however, did not discuss adjustments to PR3 (exhaust pilot valve), nor did it provide clear guidance on acceptable limits for the actuation pressure for the exhaust pilot valve.

Due to the small actuation pressure setpoints, the exhaust pilot valve eventually started venting to atmosphere. On March 12, 2007, an operator heard air venting from the

exhaust pilot valve and placed his hand close to the valve. This action restricted the venting air flow and increased the back pressure sensed by one of the valve's ports. Since the actuation pressure was set at such a low value, this small amount of back pressure was sufficient to actuate the valve. The pilot valve swapped, exhausting the diaphragm. Consequently, Valve 2-HV-2452-1 opened and the TDAFW pump started and reached full flow. Operations personnel responded by manually running back the main turbine to 1100 MW to ensure reactor power remained less than 100%. Approximately 15 minutes later, Operations personnel secured the TDAFW pump, closed Valve 2-HV-2452-1, and placed the associated Hand switch 2-HS-2452-1 in auto. The Prompt Team was requested to determine the cause of the valve failure.

While examining the valve actuator and tubing joints, a Prompt Team technician came in close proximity to Valve 2-HV-2452-1 and restricted the venting air flow, increasing the back pressure sensed by one of the exhaust pilot valve's ports. Again, this small amount of back pressure caused the exhaust pilot valve to swap ports, exhausting the diaphragm. Consequently, Valve 2-HV-2452-1 opened and the TDAFW pump reached full flow a second time.

The licensee then closed the upstream isolation valve, Valve 2-MS-0128. While in the process of closing this valve, the operator heard air venting and placed his hand under the exhaust pilot valve, increasing the back pressure sensed by one of the exhaust pilot valve's ports. For a third time, this small amount of back pressure caused the exhaust pilot valve to swap ports, exhausting the diaphragm. Consequently, Valve 2-HV-2452-1 opened a third time. This time, the TDAFW pump reached a partial flow because the upstream isolation valve was partially closed.

Operations personnel initiated a clearance to prevent further inadvertent actuations of the TDAFW pump and a work order to determine the valve failure mechanism. On March 13, 2007, the licensee declared the TDAFW pump operable. The licensee entered the inadvertent operations of the TDAFW pump into their corrective action program for resolution. The licensee performed several corrective actions for this finding, including adding additional information and guidance to the MDA-1105 data sheet.

Analysis: The adjustment of the exhaust pilot valve actuation pressure outside of the acceptable performance band was the performance deficiency. This issue was determined to be more than minor because it is similar to Example b of Section 4, "Insignificant Procedural Errors," in Manual Chapter 0612, Appendix E, "Examples of Minor Issues." Specifically, this issue is more than minor because it led to a plant transient that resulted in a reduction in reactor power. Additionally, this issue is associated with the Initiating Events cornerstone attribute of human performance and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. This finding was determined to be of very low safety significance because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. The cause of the finding is related to the cross-cutting aspect of Human Performance in that the licensee failed to use a systematic decision making process to determine unintended consequences that would occur in decreasing the stroke time of the exhaust pilot valve (H.1.(a)).

Enforcement: Technical Specification 5.4.1.a states, in part, that "Written procedures shall be established, implemented, and maintained covering ...The applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978." Regulatory Guide 1.33, Appendix A, Item 9 states, in part, that "Maintenance that can affect the performance of safety-related equipment should be properly preplanned and performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances." Contrary to the above, on October 22, 2006, the licensee failed to use a procedure appropriate to the circumstances when performing maintenance on safety-related equipment. Specifically, the licensee used a procedure not appropriate to the circumstances when making adjustments to the Exhaust Pilot Valve 2-HV-2452-1-PR3 on the Main Steam Line 2-04 to Auxiliary Feedwater Pump Turbine Steam Supply Valve 2-HV-2452-1. The adjustments to the exhaust pilot valve eventually led to three inadvertent operations of the TDAFW pump. Because this finding is of very low safety significance and because it was entered into the licensee's corrective action program as Smart Form SMF-2007-0903-00, this violation is being treated as a non-cited violation, consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 05000446/2007005-02, Failure to Use a Procedure Appropriate to the Circumstances Led to Inadvertent Actuations of the Turbine Driven Auxiliary Feedwater Pump.

.5 Radiation Safety Inspection

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)

No findings of significance were identified.

4OA3 Event Followup (71153)

.1 Unit 1 Dropped Control Rod

a. Inspection Scope

During the performance of monthly rod repositioning on December 13, 2007, the Unit 1 Control Rod J13 in Shutdown Bank B dropped to the full-in position with the remaining Shutdown Bank B rods in the full out position. The inspectors responded to the Unit 1 control room and observed the control room operators implement Abnormal Procedure ABN-712, "Rod Control System Malfunction," Revision 10. The inspectors observed the operators enter the applicable Technical Specification and Technical Requirement Manual required actions within the specified completion times, and reduce power, initially to 1150 MWe, then less than 75 percent reactor power, and subsequently to less than 50 percent reactor power. The inspectors also observed the troubleshooting efforts to identify the cause of the dropped rod and the briefings between the control room staff and the maintenance, engineering, and fuel vendor representatives.

The inspectors observed the restoration of Control Rod J13 to its desired position and reviewed the subsequent activities to restore core axial flux difference and quadrant power flux ratio to acceptable, steady state values.

The inspectors interviewed the core performance engineers and assessed the actions taken by the licensee to control reactor power and core power distributions during the event and during the restoration to normal full power operations. The inspectors also reviewed the initial troubleshooting results to assess the extent and thoroughness of the efforts to identify the cause of the dropped rod.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On October 25, 2007, 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 December 20, 2007, the resident inspection results were presented in a pre-exit briefing to Mr. M. Blevins, Executive Vice President and Chief Nuclear Officer, and other members of Luminant Power management. The inspectors communicated to the licensee that a final exit would occur upon completion of the inspection. Luminant Power acknowledged the findings presented.

On December 27, 2007, the inspector conducted a telephonic exit meeting with Mr. R. Kidwell, Senior Nuclear Analyst, Regulatory Affairs, to verify that no changes to the licensee's emergency plan or implementing procedures were submitted by the licensee between January and December 2007.

On January 2, 2008, the inspector conducted a telephonic exit meeting with Mr. T. Hope, Nuclear Licensing Manager, upon completion of the resident inspections.

The inspectors asked Luminant Power whether any materials examined during the inspection should be considered proprietary. Proprietary information was reviewed by the inspectors and left with Luminant Power at the end of the inspection.

4OA7 Licensee Identified Violations

The following violations of very low safety significance (Green) were identified by the licensee and are violations of NRC requirements which meets the criteria of Section VI of the NRC Enforcement Policy for being dispositioned as an NCV:

- Licensee Technical Specifications Section 5.4.1.e requires written procedures be established, implemented, and maintained covering all programs in TS 5.5, which

includes TS 5.5.16 Containment Leakage Rate Testing Program. 10 CFR 50 Appendix J, paragraph III.A.1(d) requires that vented systems shall be drained of water ...to assure exposure of the ... valves to containment air test pressure. Contrary to this requirement, on July 23, 2007, the licensee identified that the procedure implementing local leak rate testing of containment penetration 2-MIV-0001 did not assure exposure of the valves to air. The piping configuration included an N16 delay loop, which acted as a loop seal and prevented the line from draining. This piping configuration was identified by the licensee while reviewing isometric drawings to troubleshoot a leaking containment isolation valve. The licensee performed a risk evaluation required by TS SR 3.0.3 for a surveillance delayed greater than 24 hours, and determined that, although the administrative leakage limit for this containment isolation valve may have been exceeded, past failures have resulted in leak rates significantly less than the available margin for the overall TS containment leak rate. This condition was documented in SMF-2007-2302-00. This violation is more than minor because it affected the Barrier Integrity cornerstone objective to assure the containment's ability to protect the public from radio nuclide releases, but is very low significance (Green) because it does not increase core damage frequency and, due to the small size of the tubing/piping, would not contribute to large early release frequency.

- Licensee Technical Specification Section 5.7.1.a. requires that each entryway to high radiation areas not exceeding 1.0 rem per hour be barricaded and conspicuously posted as a high radiation area. Contrary to this requirement, on July 26, 2007, after performing a resin transfer, the lower valve gallery was de-posted from a high radiation area to a radiation area. Upon reviewing the survey it was noted that two areas should have remained posted as high radiation areas. This issue was entered into the licensee's corrective action program as SMF-2007-2351-00. This finding is of very low safety significance because it did not involve a very high radiation area or personnel overexposure.

- Licensee Technical Specification Section 5.7.2. requires that each entryway to high radiation areas exceeding 1.0 rem per hour but less than 500 rads per hour be barricaded and conspicuously posted as a high radiation area and requires the area to be conspicuously posted and locked or continuously guarded. The Technical Specification also states that if no enclosure can reasonably be constructed around the area, a clearly visible flashing light shall be activated at the area as a warning device. Contrary to this requirement, on July 26, 2007, the fuel handling building was not posted as a high radiation area and was neither guarded or identified with a visible flashing light during transfer of a high integrity container to a storage cask. This event was entered into the licensee's corrective action program as Smart Form 2007-2322-00. This finding is of very low safety significance because it did not involve a very high radiation area or personnel overexposure. This is also considered a Performance Indicator occurrence and was properly reported with the third quarter performance data.

ATTACHMENT: SUPPLEMENTAL INFORMATION

**SUPPLEMENTAL INFORMATION**

**KEY POINTS OF CONTACT**

Luminant Power personnel

M. Blevins, Executive Vice President and Chief Nuclear Officer
M. Bozeman, Supervisor, Emergency Planning
S. Bradley, Supervisor, Health Physics
A. Caves, ALARA Coordinator, Radiation Protection
R. Fishencord, Sr. Nuclear Specialist, Emergency Planning
R. Flores, Site Vice President
J. Gallman, Senior Nuclear Analyst (Work Week Coordinator)
J. Goodrich, ALARA Technician, Radiation Protection
D. Holland, Senior Nuclear Analyst (Work Week Coordinator)
T. Hope, Nuclear Licensing Manager
M. Kanavos, Plant Manager
S. Karpyak, Risk & Reliability Engineering Supervisor
R. Kidwell, Senior Nuclear Analyst, Regulatory Affairs
B. Kneels, Supervisor, Radiation Protection
B. Knowles, Supervisor, Radiation Protection
G. Krishnan, Procurement Engineering & Program Manager, SHAW
D. Kross, Director, Operations
F. Madden, Director, Regulatory Affairs
S. Maier, Design Engineering Analysis Manager, Technical Support
M. McCutchen, System Engineer
J. Mercer, Maintenance Rule Coordinator
J. Meyer, Technical Support Manager
W. Morrison, Maintenance Smart Team Manager
D. O'Connor, Supervisor, Radiation Protection
B. Patrick, Manager, Radiation Protection
D. Reimer, Manager of Plant Support
J. Rankin, ALARA Technician, Radiation Protection
J. Rincon, ALARA Technician, Radiation Protection
T. Robison, Sr. Nuclear Specialist, Emergency Planning
J. Seawright, Consulting Engineer, Regulatory Affairs
R. Segura, Nuclear Analyst Consultant (Electrical Systems)
S. Smith, Director, System Engineering
D. Sparks, Senior Nuclear Analyst (Work Week Coordinator)
C. Tran, Engineering Programs Manager
D. Wilder, Manager, Security, Emergency Planning, and Environmental

NRC

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

## LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Opened and Closed

| | | |
|---|---|---|
| 05000445;446/2007005-01 | NCV | Failure to Evaluate Radiological Conditions (Section 2OS1) |
| 05000446/2007005-02 | NCV | Failure to Use a Procedure Appropriate to the Circumstances Led to Inadvertent Actuations of the Turbine Driven Auxiliary Feedwater Pump (Section 4OA2.4) |

Closed

None

Discussed

None

## LIST OF DOCUMENTS REVIEWED

**Section 1R04: Equipment Alignment (71111.04)**

Unit 1 Train A Residual Heat Removal System

Drawings

M1-0229, Component Cooling Water System, Revision CP-22
M1-0260, Residual Heat Removal System, Revision CP-32
M1-0263, Safety Injection System, Revision CP-13

Control Room Air Conditioning System

STA-759, “Control Room Envelope Habitability Program,” Revision 0
STA-758, “Ventilation Filter Testing Program,” Revision 0
OPT-210, “Control Room VAC. System,” Revision 9
Technical Specifications 3.7.10 Control Room Filtration/Pressurization System (CREFS)
Technical Specifications 3.7.11 Control Room Air Conditioning System (CRACS)
Current Maintenance Rule Reliability Status
CPNPP System Status Report, 3rd Quarter 2007

**Section 1R05: Fire Protection (71111.05Q)**

Comanche Peak Steam Electric Station Fire Protection Report, Section II, Unit 1 and Unit 2 Fire Hazards Analysis Report, Revision 26

Fire Preplan Instruction Procedure (FPI), FPI-102B, "Unit 2 Safeguards Building Elevation 790'-0," Revision 2

FPI-104A, "U-1, Train A Diesel Generator & Equipment Elev. 810' and Fuel Oil Day Tank Room Elev. 844'," Revision 3

FPI-105B, "U2, Train B Diesel Generator & Equipment Elev. 810' and Fuel Oil Day Tank Room Elev. 844' " Revision 1

FPI-408, "Auxiliary Building Elevation 852'-6"," Revision 3

FPI-502, "Electrical & Control Building Unit 1 & 2 Battery Rooms, 792'-0"," Revision 1

**Section 1R15 Operability Evaluations (71111.15)**

EVAL-2006-3080-7
FDA-2005-3364-21
LCOAR T1-07-248

SMF-2006-1104-00
SMF-2007-2218-00
SMF-2007-2223-00
SMF-2007-2228-00
SMF-2007-2229-00
SMF-2007-2429-00
SMF-2007-2429-01
SMF-2007-3107-00

WO 3-06-333555-01
WO 5-06-505191-AA
WO 5-06-505192-AA
WO 5-06-505693-AA

ME-CA-0000-5066, "Calculation of Minimum Flood Level in the Containment Building Following a Large Break LOCA, Small Break LOCA and MSLB," Revision 3

ME(B)-389, "RWST Setpoints, Volume Requirements, and Time Depletion Analysis," Revision 10

WPT-16928, "TXU POWER COMANCHE PEAK STEAM ELECTRIC STATION UNIT 1 and 2 Maximum Residual Heat Removal Pump Flow in Safety Injection Mode," Dated April 16, 2007

WPT-17071, "LUMINANT COMANCHE PEAK NUCLEAR POWER PLANT UNITS 1 and 2 RHR Flow Clarification and Recalculation of RWST Draindown Times," Dated November 15, 2007

Unit 2 TDAFWP

SMF-2002-2004-00
SMF-2003-1282-00
SMF-2006-1749-00
SMF-2007-2909-00

WO-4-07-176008-00

Procedures

ALM-0082B, Alarm Procedure 2-ALB-8B," Revision 7

CPNPP AOV Component Health, 3rd Quarter, 2007

Drawing

M1-0202, Main Steam Reheat and Steam Dump, Revision CP-33

Fire Loading

SMF-2007-3095-00
SMF-2007-3098-00

CPNPP Fire Protection Report, Revision 26

**Section 2OS1: Access Controls to Radiologically Significant Areas (71121.01)**

Corrective Action Documents

| | | | |
|---|---|---|---|
| SMF-2007-001157 | SMF-2007-001275 | SMF-2007-001549 | SMF-2007-001600 |
| SMF-2007-001809 | SMF-2007-002059 | SMF-2007-002096 | SMF-2007-002182 |
| SMF-2007-002322 | SMF-2007-002351 | SMF-2007-002454 | SMF-2007-002499 |
| SMF-2007-002695 | SMF-2007-002775 | | |

Audits and Self-Assessments

SA-2007-013 Analysis of Personnel Contaminations during 1RF12

Procedures

| | |
|---|---|
| STA-650 | General Health Physics Plan, Revision 5 |
| STA-660 | Control of High Radiation Areas, Revision 10 |
| RPI-110 | Radiation Protection Shift Activities, Revision 12 |
| RPI-213 | Survey and Release of Material and Personnel, Revision 11 |

**Section 2OS2: ALARA Planning and Controls (71121.02)**

Corrective Action Documents

| | | | |
|---|---|---|---|
| SMF-2007-001210 | SMF-2007-001257 | SMF-2007-001337 | SMF-2007-001388 |
| SMF-2007-001582 | SMF-2007-001599 | SMF-2007-001605 | SMF-2007-002051 |
| SMF-2007-002683 | SMF-2007-002752 | SMF-2007-002809 | |

Radiation Work Permits

| | |
|---|---|
| 2007-1302 | Steam Generator Replacement; Scaffold |
| 2007-1306 | Steam Generator Replacement; Secondary Side Activities |
| 2007-1600 | Refueling |
| 2007-1301 | Steam Generator Replacement; Field Engineering |
| 2007-1406 | Pressurizer heater Activities |

Procedures

| | |
|---|---|
| STA-650 | General Health Physics Plan, Revision 5 |
| STA-651 | ALARA Program, Revision 9 |
| STA-655 | Exposure Monitoring Program, Revision 14 |
| STA-656 | Radiation Work Control, Revision 12 |
| STA-657 | ALARA Job Planning/Debriefing, Revision 11 |
| RPI-606 | Radiation Work and General Access Permits, Revision 15 |
| RPI-516 | Dose Determination, Revision 19 |

Miscellaneous Documents

Nuclear Policy Statement 118

Training Lesson Plan ETC1.ALA.EN1, ALARA for Engineers, dated 8/11/04

ALARA Committee Meeting Minutes for; September 13, 2007, October 9, 2007, and October 16, 2007

1RF12 Radiation Protection ALARA Report

1RF12 NSSS Upgrade ALARA Report Supplement

**Section 4OA1: Performance Indicator Verification (71151)**

Corrective Action Documents

SMF-2007-002322

**Section 4OA2.3: Cumulative Effects of Operator Workarounds (71152)**

Operator Work Around List - tracked by SMF 2003-1912 and SMF 2006-3735

Operations Standing Order OSO-003 Revision 0, Long-Term Evaluated Work-Arounds, Approved September 7, 2004, reference EVAL 2004-0374-01-00

Operations Shift Order, dated 11/04/07

Operator Compensatory Actions (LAN data base), printed 11/4/2007

Unit Differences (LAN database), printed 11/4/2007

Station Tactical Equipment Issues (part of Plan of the Day) 11/03/07

Unit 1 Operational Focus Items (part of Plan of the Day) 11/03/07

Unit 2 Operational Focus Items (part of Plan of the Day) 11/03/07

Course of Action (COA)

COA 2006-2030-02-00, High TPCW - Lake water temperature
COA 2007-1650-01-00, High Unit 2 RCS Xenon-133 activity
COA 2007-1999-01-00, Low Unit 1 Primary water stator flow

**Section 4OA2.4: Inadvertent Actuations of Unit 2 Turbine Driven Auxiliary Feedwater Pump (71152)**

Analysis of Fisher Type 122A Switching Valve Setpoints Pressures with Varying Stem Positions and Tubing Configurations, March 14, 2007

EVAL-2006-003564-01-00
EVAL-2006-003564-02-01
EVAL-2006-003564-03-01
EVAL-2007-000903-01-01
EVAL-2007-000903-02-01
EVAL-2007-000903-03-00
EVAL-2007-000903-04-00
EVAL-2007-000903-05-01
EVAL-2007-000903-06-02

MDA-1005, “Maintenance Department Data Sheet Program,” Revision 3
MDA-1105, TSS Valve Data Sheet for Valve 2-HV-2451-1
OPT-206B, “AFW System,” Revision 19

Reactor Plant Event Notification Worksheet, Event Number # 43354

SMF-2006-003564-00
SMF-2007-000903-00

SMF-2007-001259-00
SMF-2007-001380-00
SMF-2007-001409-00
SMF-2007-001466-00

WO 3-05-341936-01
WO 4-07-173080-00
WO 4-07-173160-00

**Section 4OA7: Licensee Identified Violations**

Procedure OWI-801, Operations Department Local Leak Rate Testing, Revision 5

Procedure OPT-830B, Appendix J Leak Rate Test of Penetration 2-MIV-0001(b) (2-HV-4168, 2-HV-4169, 2-HV-4170, and 2PS-0503), Revision 4

SMF-2007-002302-00
EVAL-2007-002302-01-00
EVAL-2007-002302-02-00
EVAL-2007-002302-05-00
SMF -2002-001179-00
EVAL-2002-001179-01-00

## LIST OF ACRONYMS

| | |
|---|---|
| ADAMS | Agencywide Documents Access and Management System |
| AFW | auxiliary feedwater |
| ALARA | as low as is reasonably achievable |
| CFR | *Code of Federal Regulations* |
| CPSES | Comanche Peak Steam Electric Station |
| DEP | drill/exercise performance PI |
| EDG | emergency diesel generator |
| ERO | emergency response organization drill participation PI |
| EVAL | evaluation |
| NCV | noncited violation |
| NEI | Nuclear Energy Institute |
| NRC | Nuclear Regulatory Commission |
| OPT | operations testing manual |
| PARS | publicly available records system |
| PI | performance indicator |
| RHR | residual heat removal |
| SDP | significance determination process |
| SMF | Smart Form |
| SOP | system operating procedure |
| SSC | structure, system or component |
| TDAFW | turbine driven auxiliary feedwater |
| TS | Technical Specifications |
| UFSAR | updated final safety analysis report |
| WO | work order |