



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
612 EAST LAMAR BLVD, SUITE 400
ARLINGTON, TEXAS 76011-4125

May 3, 2011

Mr. Rafael Flores, Senior Vice President
and Chief Nuclear Officer
Luminant Generation Company, LLC
Comanche Peak Nuclear Power Plant
P.O. Box 1002
Glen Rose, TX 76043

Subject: COMANCHE PEAK NUCLEAR POWER PLANT - NRC INTEGRATED INSPECTION
REPORT 05000445/2011002 AND 05000446/2011002

Dear Mr. Flores:

On March 19, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Comanche Peak Nuclear Power Plant. The enclosed integrated inspection report documents the inspection findings, which were discussed on March 28, 2011, with Mr. M. Lucas, Site Vice President, and other members of your staff.

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

This report documents one self-revealing and two NRC-identified findings of very low safety significance (Green). All of these findings were determined to involve violations of NRC requirements. However, because of the very low safety significance and because they were entered into your corrective action program, the NRC is treating these findings as non-cited violations (NCVs), consistent with Section 2.3.2.a of the NRC Enforcement Policy. If you contest the NCVs or the significance of the NCVs, 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, D.C. 20555-0001, with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 612 E. Lamar Blvd, Suite 400, Arlington, Texas, 76011-4125; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the Comanche Peak Nuclear Power Plant. In addition, if you disagree with the cross-cutting aspect of the findings in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region IV, and the NRC Resident Inspector at the Comanche Peak Nuclear Power Plant.

In accordance with Title 10 of the Code of Federal Regulations (CFR) 2.390 of the NRC's "Rules of Practice," a copy of this letter, and its enclosure, will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's Agencywide Documents Access and Management 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/

Wayne C. Walker, Chief
Project Branch A
Division of Reactor Projects

Docket: 50-445: 50-446
License: NPF-87; NPF-89

Enclosure:
NRC Inspection Report 05000445/2011002 and 05000446/2011002
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket: 50-445, 50-446

License: NPF-87, NPF-89

Report: 05000445/2011002 and 05000446/2011002

Licensee: Luminant Generation Company LLC

Facility: Comanche Peak Nuclear Power Plant, Units 1 and 2

Location: FM-56, Glen Rose, Texas

Dates: January 1 through March 19, 2011

Inspectors: J. Kramer, Senior Resident Inspector
B. Tindell, Resident Inspector
L. Carson II, Senior Health Physicist
D. Stearns, Health Physicist

Approved By: Wayne Walker, Chief
Project Branch A
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000445/2011002, 05000446/2011002; 1/1/2011 - 3/19/2011; Comanche Peak Nuclear Power Plant, Units 1 and 2; Equipment Alignment, Fire Protection, Operability Evaluations.

The report covered a three month period of inspection by resident inspectors and announced baseline inspections by region based inspectors. Three Green non-cited violations (NCVs) were identified. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process." Findings for which the significance determination process does not apply may be Green or be assigned a severity level after a U.S. Nuclear Regulatory Commission (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 4, dated December 2006.

A. NRC-Identified Findings and Self-Revealing Findings

Cornerstone: Initiating Events

- Green. The inspectors identified a non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action" for the failure of the licensee to promptly identify and correct a safety injection reset malfunction caused by a design error. As a result, this malfunction could have delayed the termination of an inadvertent safety injection, a time critical action for avoiding the reactor coolant system reaching water solid conditions. The licensee entered the finding into the corrective action program as Condition Report CR-2011-003476.

The finding was more than minor because it was associated with the design control attribute of the initiating events cornerstone and adversely affected the cornerstone objective, in that, the finding increased the likelihood of the reactor coolant system reaching water solid conditions during an inadvertent safety injection. Using IMC 0609, Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings," the finding was determined to require a Phase 2 analysis because, as a potential loss of coolant accident initiator, the worst case degradation of ineffective operator actions would result in exceeding reactor coolant system leakage limits. The inspectors determined that a Phase 2 analysis was not applicable to the performance deficiency. A senior reactor analyst reviewed the licensee's risk estimate and determined that no further analysis was needed to conclude that the conditional risk of an inadvertent safety injection was very low. The licensee's analysis did not consider the risk related to a steam line break inside containment where the recovery would be complicated by multiple valve manipulations needed to restore reactor coolant pump thermal barrier cooling before securing the charging pumps. However, the low frequency of a sufficiently-sized steam line break inside containment combined with the low probability, two percent, that the safety injection could not be reset reduced the scenario of concern to a frequency of less than 1.0E-6/yr. Therefore, the analyst concluded that the performance deficiency was of very low safety significance. The finding has a problem identification and resolution crosscutting aspect associated with the corrective action program because the licensee failed to thoroughly evaluate the problem (P.1(c)). (Section 1R15)

Cornerstone: Mitigating Systems

- Green. The inspectors reviewed a self-revealing NCV of Technical Specification 5.4.1.a for the failure to implement a boric acid system procedure. As a result, an emergency boration flow path was isolated. The licensee entered the finding into the corrective action program as Condition Report CR-2011-000590.

The finding was more than minor because it was associated with the human performance attribute of the mitigating systems cornerstone and adversely affected the cornerstone objective to ensure the availability of systems that respond to initiating events to prevent undesirable consequences. Specifically, an emergency boration flow path was inadvertently isolated. Using IMC 0609, Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings," the finding was determined to represent an actual loss of safety function of non-technical specification equipment designated as risk-significant per 10 CFR 50.65 for greater than 24 hours. Therefore, the finding was determined to require an Appendix A significance determination process Phase2 analysis. The inspectors determined that, for evaluation purposes, a total failure of emergency boration capability bounded the event. The inspectors evaluated the finding using the Phase2 pre-solved table for "operator fails to initiate emergency boration." Since the flow path was isolated from January 17 to January 18, 2011, the inspectors used the less than three days section of the table for evaluating the finding and determined the finding was of very low safety significance. The finding has a human performance crosscutting aspect associated with work practices because licensee personnel proceeded in the face of unexpected circumstances and did not consult supervision (H.4 (a)). (Section 1R04)

- Green. The inspectors identified a NCV of Technical Specification 5.4.1.d for the failure of the licensee to identify a critical item failure during an unannounced fire drill. As a result, the licensee evaluated the control room operators' performance during a fire drill as being successful when the actual performance resulted in a drill failure. The licensee entered the finding into the corrective action program as Condition Report CR-2011-001803.

The finding was more than minor because the failure of the licensee to identify fire drill performance deficiencies, if left uncorrected, would have the potential to lead to a more significant safety concern. Findings associated with operator performance during fire drills are not evaluated using IMC 0609, Attachment F, "Fire Protection Significance Determination Process," and require NRC management review using Appendix M, "Significance Determination Process Using Qualitative Criteria". Regional management concluded that the finding was of very low safety significance because it reflected personnel performance during a training drill rather than during an actual fire. The finding has a human performance crosscutting aspect associated with resources because the licensee failed to ensure that the procedure, drill package F11-01, was complete to adequately assure nuclear safety (H.2 (c)). (Section 1R05.2)

B. Licensee-Identified Violations

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

REPORT DETAILS

Summary of Plant Status

Comanche Peak Nuclear Power Plant Unit 1 began the reporting period at 100 percent power. On January 13, 2011, operators performed a unit shutdown as a result of electrical arcing in the potential transformer cabinet of reactor coolant pump 1-01. The licensee completed the potential transformer repairs the following day and performed a reactor startup. On January 15, 2011, the unit returned to 100 percent power and operated at approximately 100 percent power for the remainder of the inspection period.

Comanche Peak Nuclear Power Plant Unit 2 began the reporting period at 100 percent power. On March 9, 2011, a heater drain pump discharge valve drifted to an almost closed position. This caused a low main feedwater pump suction pressure and the automatic opening of the low pressure feedwater heater bypass valve. As a result, operators performed a manual turbine runback to 900 megawatts and stabilized reactor power at approximately 78 percent. The licensee completed the repairs to the heater drain pump valve the following day and commenced raising power. On March 11, 2011, the unit returned to 100 percent power and operated at approximately 100 percent power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, and Emergency Preparedness

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope

The inspectors performed a review of the licensee's adverse weather procedures for seasonal extreme low temperatures. The inspectors verified that weather-related equipment deficiencies identified during the previous year were corrected prior to the onset of low temperatures and evaluated the implementation of the adverse weather preparation procedures and compensatory measures.

The inspectors focused on plant-specific design features and the licensee's procedures used to mitigate or respond to adverse weather conditions. The inspectors placed additional emphasis on fire protection, service water, and the diesel generators. The inspectors reviewed the Final Safety Analysis Report and performance requirements for systems selected for inspection, and verified that procedures were appropriate. Specific documents reviewed during this inspection are listed in the attachment. The inspectors also reviewed corrective action program items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into the corrective action program in accordance with station corrective action procedures.

These activities constitute completion of one readiness for seasonal adverse weather sample as defined in Inspection Procedure (IP) 71111.01-05.

b. Findings

No findings were identified.

1R04 Equipment Alignments (71111.04)

a. Inspection Scope

The inspectors performed partial system walkdowns of the following risk-significant systems:

- January 21, 2011, Unit 2 emergency boration flow paths after boric acid transfer pumps were inadvertently isolated;
- January 24, 2011, Units 1 and 2 diesel generators and turbine driven auxiliary feedwater pumps when transformer XST2 was unavailable for maintenance; and
- March 8, 2011, Unit 2 containment spray train A when containment spray train B was unavailable for maintenance

The inspectors selected these systems based on their risk significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors focused on any discrepancies that could affect the function of the system and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, Final Safety Analysis Report, technical specification requirements, outstanding work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also walked down accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the corrective action program with the appropriate significance characterization.

These activities constitute completion of three partial system walkdown samples as defined in IP 71111.04-05.

b. Findings

Introduction. The inspectors reviewed a Green self-revealing NCV of Technical Specification 5.4.1.a for the failure to implement a boric acid system procedure. As a result, an emergency boration flow path was isolated.

Description. On January 17, 2011, licensee personnel observed that boric acid filter 2-01 exhibited an abnormally high differential pressure of 50 pounds per square inch. Procedure SOP-105, "Concentrated Boric Acid System," Revision 12, Section 5.2.2, Step H states, in part, that if boric acid filter 2-01 differential pressure is greater than 20 pounds per square inch, then bypass the filter. Licensee personnel had intended to isolate the filter and open the bypass valve in order to support work on the filter. However, when licensee personnel isolated the filter, they failed to open the bypass valve. This isolated the emergency boration flow path from the boric acid transfer pumps for Unit 2. On January 18, 2011, licensee personnel discovered the inadvertent isolation after the boric acid transfer pumps failed to develop flow during a

routine boration. The licensee immediately opened the filter bypass valve which restored the emergency boration flow path. Two other emergency boration flow paths remained operable throughout the inadvertent isolation. However, the isolated emergency boration flow path was designated as having high risk significance in the licensee's maintenance rule program.

The inspectors determined that the licensee personnel performing the procedure proceeded in the face of unexpected circumstances when the filter differential pressure was abnormal, in that, they did not use the procedural guidance for filter operation and later did not consult supervision when plant conditions did not match a clearance tag note.

Analysis. The licensee's failure to implement the boric acid system procedure that resulted in the isolation of an emergency boration flow path was a performance deficiency. The performance deficiency was more than minor because it was associated with the human performance attribute of the mitigating systems cornerstone and adversely affected the cornerstone objective to ensure the availability of systems that respond to initiating events to prevent undesirable consequences. Specifically, an emergency boration flow path was inadvertently isolated. Using IMC 0609, Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings," the finding was determined to represent an actual loss of safety function of non-technical specification equipment designated as risk-significant per 10 CFR 50.65 for greater than 24 hours. Therefore, the finding was determined to require an Appendix A significance determination process Phase 2 analysis.

The inspectors performed a Phase 2 analysis and determined that, for evaluation purposes, a total failure of emergency boration capability bounded the event. The inspectors evaluated the finding using the Phase 2 pre-solved table for "operator fails to initiate emergency boration." Since the flow path was isolated from January 17 to January 18, 2011, the inspectors used the less than three days section of the table for evaluating the finding and determined the finding was of very low safety significance. The finding has a human performance crosscutting aspect associated with work practices because licensee personnel proceeded in the face of unexpected circumstances and did not consult supervision (H.4 (a)).

Enforcement. Technical Specification 5.4.1.a requires, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, "Quality Assurance Program Requirements," Revision 2, Appendix A. Regulatory Guide 1.33, Revision 2, Appendix A, Item 3.n, requires, in part, procedures for startup, shutdown, and changing modes of operation for the chemical and volume control system. Licensee procedure SOP-105, "Concentrated Boric Acid System," Revision 12, Step 5.2.2.H states, in part, that if boric acid filter 2-01 differential pressure is greater than 20 pounds per square inch, then bypass the filter. Contrary to the above, on January 17, 2011, the licensee failed to implement procedure SOP-105 when boric acid filter 2-01 differential pressure was greater than 20 pounds per square inch and not bypassed. Since the violation was of very low safety significance and was documented in the licensee's corrective action program as Condition Report CR-2011-000590, it is being treated as a NCV, consistent with Section 2.3.2.a of the NRC Enforcement Policy: NCV 05000446/2011002-01, "Emergency Boration Flow Path Isolated."

1R05 Fire Protection (71111.05AQ)

.1 Quarterly Fire Inspection Tours (71111.05Q)

a. Inspection Scope

The inspectors conducted fire protection walkdowns in the following risk-significant plant areas:

- January 20, 2011, fire zone 65, Units 1 and 2 control room;
- January 20, 2011, fire zone 63, Unit 2 cable spreading room;
- February 8, 2011, Unit 1 feedwater flow control valve, 852 foot elevation roof; and
- March 5, 2011, fire zone SD9, Unit 2 train A switchgear

The inspectors reviewed areas to assess if licensee personnel had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant; effectively maintained fire detection and suppression capability; maintained passive fire protection features in good material condition; and had implemented adequate compensatory measures for out of service, degraded or inoperable fire protection equipment, systems, or features, in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant's individual plant examination of external events, their potential to affect equipment that could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event. The inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use, that fire detectors and sprinklers were unobstructed, that transient material loading was within the analyzed limits, and fire doors, dampers, and penetration seals appeared to be in satisfactory condition.

These activities constitute completion of four quarterly fire protection inspection samples as defined in IP 71111.05-05.

b. Findings

No findings were identified.

.2 Annual Fire Protection Drill Observation (71111.05A)

a. Inspection Scope

On February 16, 2011, the inspectors observed a fire brigade drill for a simulated fire in Unit 2 switchgear room 96 in the safeguards building. The observation evaluated the readiness of the plant fire brigade and control room staff to fight fires. The inspectors verified that the licensee staff identified deficiencies; openly discussed them in a self-critical manner at the drill debrief, and took appropriate corrective actions. Specific attributes evaluated were: (1) proper wearing of turnout gear and self-contained breathing apparatus; (2) proper use and layout of fire hoses; (3) employment of appropriate fire fighting techniques; (4) sufficient firefighting equipment brought to the scene; (5) effectiveness of fire brigade leader communications, command, and control; (6) search for victims and propagation of the fire into other plant areas; (7) smoke removal operations; (8) utilization of preplanned strategies; and (9) adherence to the preplanned drill scenario.

These activities constitute completion of one annual fire protection inspection sample as defined by IP 71111.05-05.

b. Findings

Introduction. The inspectors identified a Green NCV of Technical Specification 5.4.1.d for the failure of the licensee to identify a critical item failure during an unannounced fire drill. As a result, the licensee evaluated the control room operators' performance during a fire drill as being successful when the actual performance resulted in a drill failure.

Description. The inspectors observed a fire drill from various plant locations including the control room. The inspectors determined that the performance of the operators and the drill evaluator in the control room was inadequate. The licensee determined that this resulted in a drill failure. The inspectors determined that the fire brigade performance in the field was acceptable.

Control room operators correctly entered procedure ABN-804B, "Response to Fire in the Safeguards Building," Revision 3, in response to cues provided by the evaluator. However, the operators incorrectly entered Section 3.0, "Fires Affecting Safeguards Building Fire Area 2SB," instead of Section 6.0, "Fires Affecting Safeguards Building Fire Area 2SE." Operator use of the incorrect procedure section would have resulted in taking actions for equipment not affected by the fire and failing to take actions for fire damaged equipment.

The inspectors discussed the operators' performance with the control room drill evaluator. The evaluator had concluded that the operators performed the correct procedural actions and the drill was a success. The inspectors informed the evaluator that the incorrect section of the procedure was used to simulate plant operations in response to the fire drill and, in accordance with plant procedures; the drill should be considered a failure. The inspectors and evaluator returned to the control room and questioned the operators about the section of the procedure used during the fire drill. Based on the inspector's input, the evaluator concluded that the wrong procedure section was utilized and the drill should be classified as a failure since a critical evaluation step was incorrectly performed.

The licensee performed immediate remediation of the control room operators involved in the drill and entered the drill failure into the corrective action program.

The inspectors determined, through discussion with licensee personnel, that the fire drill package did not have sufficient information for the evaluator to assess whether the operators entered the correct procedure.

Analysis. The licensee's failure to correctly evaluate the control room operators' performance during a fire drill was a performance deficiency. The finding was more than minor because the failure to identify fire drill performance deficiencies, if left uncorrected, would have the potential to lead to a more significant safety concern. Findings associated with operator performance during fire drills are not evaluated using IMC 0609, Attachment F, "Fire Protection Significance Determination Process," and require NRC management review using Appendix M, "Significance Determination Process Using Qualitative Criteria." Regional management concluded that the finding was of very low safety significance because it reflected personnel performance during a

training drill rather than during an actual fire. The finding has a human performance crosscutting aspect associated with resources because the licensee failed to ensure that the procedure, drill package F11-01, was complete to adequately assure nuclear safety (H.2 (c)).

Enforcement. Technical Specification 5.4.1.d requires, in part, that written procedures shall be established, implemented, and maintained for implementation of the fire protection program. Procedure STA-722, "Fire Protection Program," Revision 6, Step 6.4 states, in part, that Procedure TRA-104, "Fire Protection Training," outlines the specific requirements for fire protection training. Procedure TRA-104, "Fire Protection Training," Revision 14, Step 6.3.4.8.I, states, in part, that the fire drill package is used by fire drill evaluators for the evaluation of the drills. Fire drill package F11-01, "Fire Drill-U2SG Room 96 Ops Kelly Booth," Revision 02/02/2011, the note after Step 6.11 states, in part, that critical items are in bold print and any critical item evaluated as "NO" in an unannounced drill will result in a failure with remediation required. Contrary to the above, on February 16, 2011, the licensee failed to properly implement written procedures that were part of the fire protection program. Specifically, when control room operators entered the incorrect section of a procedure, a critical item in bold print during an announced drill, the licensee evaluator failed to evaluate the item as "NO." Instead, the evaluator marked the item as "YES" indicating the correct procedure was used and the drill performance was successful. Since the violation was of very low safety significance and was documented in the licensee's corrective action program as Condition Report CR-2011-001803, it is being treated as a NCV, consistent with Section 2.3.2.a of the NRC Enforcement Policy: NCV 05000445/2011002-02; 05000446/2011002-02, "Inadequate Fire Drill Evaluation."

1R11 Licensed Operator Regualification Program (71111.11)

a. Inspection Scope

On January 31, 2011, the inspectors observed a crew of licensed operations personnel in the plant's simulator to verify that performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- Licensed operations personnel performance;
- Crew's clarity and formality of communications;
- Crew's ability to take timely actions in the conservative direction;
- Crew's prioritization, interpretation, and verification of annunciator alarms;
- Crew's correct use and implementation of abnormal and emergency procedures;
- Control board manipulations;
- Oversight and direction from supervisors; and
- Crew's ability to implement appropriate emergency plan actions and notifications

The inspectors compared the crew's performance in these areas to pre-established operator action expectations and successful critical task completion requirements.

These activities constitute completion of one quarterly licensed operations personnel requalification program sample as defined in IP 71111.11.

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed licensee personnel's evaluation and management of plant risk for the maintenance and emergent work activities affecting risk-significant and safety-related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- January 24, 2011, transformer XST2 removal from service for design change to install transformer XST2A;
- March 2, 2011, risk assessment for missed surveillance of valve 1-CT-0309, bonnet relief valve for containment spray recirculation isolation valve 1-HV-4782; and
- March 9, 2011, diesel generator 1-02 removed from service for water rolls and fast start operability testing

The inspectors selected these activities based on potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that licensee personnel performed risk assessments as required by 10 CFR 50.65(a)(4) and that the assessments were accurate and complete. When licensee personnel performed emergent work, the inspectors verified that the licensee personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed the technical specification requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

These activities constitute completion of three maintenance risk assessments and emergent work control inspection samples as defined in IP 71111.13-05.

b. Findings

No findings were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:

- CR-2010-003476, during safety injection test, slave relays K-608A and K-609A failed to reset with the safety injection reset switch;

- CR-2010-003640, Unit 1 steam generator auxiliary feedwater feed ring height to prevent water hammer;
- CR-2011-000950, motor operated valve refurbishment timeliness; and
- CR-2011-002035, containment pressure channel instrument relay high continuity resistance

The inspectors selected these potential operability issues based on the risk-significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that technical specification operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the technical specifications and Final Safety Analysis Report to the licensee's evaluations, to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of four operability evaluation inspection samples as defined in IP 71111.15-05.

b. Findings

Introduction. The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action" for the failure of the licensee to promptly identify and correct a safety injection reset malfunction caused by a design error. As a result, this malfunction could have delayed the termination of an inadvertent safety injection, a time critical action for avoiding the reactor coolant system reaching water solid conditions.

Description. The licensee identified in Condition Report CR-2010-003476 that some Unit 1 solid state protection system slave relays failed to reset using the safety injection reset switch on April 7, 2010, during a planned surveillance. Licensee personnel determined that a relay race inherent to the solid state protection system design caused an intermittent reset issue. The licensee evaluation determined that an alternate safety injection reset method was proceduralized, so no corrective actions were necessary. The inspectors noted that a similar condition had occurred in 2002 with no corrective actions. However, the inspectors noted that the malfunction could affect safety injection reset, a time critical operator action for loss of coolant recirculation and an inadvertent safety injection. The inspectors identified through interviews that the alternate safety injection reset method was significantly more time consuming than manipulating the reset switch. Therefore, the inspectors determined that the licensee failed to evaluate the effects of the time delay of alternate safety injection reset on time critical operator actions assumed in the design basis as specified in the final safety analysis report.

Licensee personnel evaluated the effects of the malfunction on an inadvertent safety injection. The licensee concluded that operations personnel would be unable to complete the time critical action of terminating injection before reaching water solid

conditions. This would increase the likelihood that a pressurizer relief valve would stick open and create a loss of coolant accident because the valves are not designed to relieve water. However, the licensee determined that the emergency operating procedures for an inadvertent safety injection allowed operations personnel to secure both centrifugal charging pumps when reactor coolant pump thermal barrier cooling was available. The inspectors determined that this proceduralized operator action would allow sufficient time for operations personnel to perform the alternate reset method without the reactor coolant system reaching water solid conditions and not damage other equipment. The inspectors also reviewed the potential effects of the malfunction on loss of coolant recirculation and determined that it would not affect the recirculation function.

The inspectors concluded that the licensee failed to thoroughly evaluate the design basis requirements in 2002 and again in 2010 when the slave relay malfunctions occurred.

Analysis. The licensee's failure to promptly identify and correct a safety injection reset malfunction that could have resulted in the reactor coolant system reaching water solid conditions under design basis conditions was a performance deficiency. The finding was more than minor because it was associated with the design control attribute of the initiating events cornerstone and adversely affected the cornerstone objective, in that, the performance deficiency increased the likelihood of the reactor coolant system reaching water solid conditions during an inadvertent safety injection. Using IMC 0609, Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings," the finding was determined to require a Phase 2 analysis because as a potential loss of coolant accident initiator, the worst case degradation of ineffective operator actions would result in exceeding reactor coolant system leakage limits. The inspectors determined that a Phase 2 analysis was not applicable to the performance deficiency. A senior reactor analyst reviewed the licensee's risk estimate provided in Condition Report CR-2010-003476 and determined that no further analysis was needed to conclude that the conditional risk of an inadvertent safety injection was very low. The licensee's analysis did not consider the risk related to a steam line break inside containment where the recovery would be complicated by multiple valve manipulations needed to restore reactor coolant pump thermal barrier cooling before securing the charging pumps. However, the low frequency of a sufficiently-sized steam line break inside containment combined with the low probability, two percent, that the safety injection could not be reset reduced the scenario of concern to a core damage frequency of less than $1.0E-6/\text{yr}$. Therefore, the analyst concluded that the performance deficiency was of very low safety significance.

The finding has a problem identification and resolution crosscutting aspect associated with the corrective action program because the licensee failed to thoroughly evaluate the problem (P.1 (c)).

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action" requires, in part, that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. Contrary to the above, from October 25, 2002 to April 7, 2010, the licensee failed to promptly identify and correct a condition adverse to quality. Specifically, due to the design of the solid state protection system, the licensee may not have been able to reset safety injection within the final safety analysis report assumed time for an inadvertent safety injection. Since the violation was of very low safety significance and was documented in the licensee's corrective action program as Condition Report CR-2010-003476, it is being treated as a

NCV with Section 2.3.2.a of the NRC Enforcement Policy: NCV 05000445/2011002-03; 05000446/2011002-03, "Failure to Identify and Correct Safety Injection Reset Malfunction."

1R18 Plant Modifications (71111.18)

a. Inspection Scope

During the week of January 24, 2011, the inspectors reviewed and observed the permanent modification that installed 345 kV transformer XST2A. The inspectors reviewed key affected parameters associated with materials/components, timing, equipment protection from hazards, operations, ventilation boundary, structural, process medium properties, licensing basis, and failure modes for the modification. The inspectors verified that modification preparation, staging, and implementation did not impair emergency or abnormal operating procedure actions, key safety functions, or operator response to loss of key safety functions; postmodification testing will maintain the plant in a safe configuration during testing by verifying that unintended system interactions will not occur, systems, structures and components' performance characteristics still meet the design basis, the appropriateness of modification design assumptions, and the modification test acceptance criteria will be met; and licensee personnel identified and implemented appropriate corrective actions associated with permanent plant modifications. In addition, the inspectors performed a walkdown of the completed modification. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one permanent plant modification sample as defined in IP 71111.18-05.

b. Findings

No findings were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed the following postmaintenance activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- January 12, 2011, Unit 1 diesel generator 1-02 testing following fuel injector pump maintenance;
- January 31, 2011, Transformer XST2A testing following maintenance activities; and
- March 2, 2011, Unit 1 safety injection pump 1-01 following oil cooler clean and inspect and offline motor analysis

The inspectors selected these activities based upon the structure, system, or component's ability to affect risk. The inspectors evaluated the activities to ensure the

testing was adequate for the maintenance performed, the acceptance criteria were clear, and the test ensured equipment operational readiness.

The inspectors evaluated the activities against technical specifications, the Final Safety Analysis Report, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with postmaintenance tests to determine whether the licensee was identifying problems and entering them into the corrective action program and that the problems were being corrected commensurate with their importance to safety. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of three postmaintenance testing inspection samples as defined in IP 71111.19-05.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the Final Safety Analysis Report, procedure requirements, technical specifications, and corrective action documents to ensure that the surveillance activities listed below demonstrated that the systems, structures, and/or components tested were capable of performing their intended safety functions:

Pump or Valve Inservice Test

- February 23, 2011, Unit 1, inservice test of service water pump 1-01 in accordance with procedure OPT-207A, "Service Water System," Revision 15

Routine Surveillance Testing

- January 26, 2011, offsite sources verification in accordance with procedure OPT-215, "Class 1E Electrical Systems Operability" Revision 14
- March 3, 2011, control room inleakage test in accordance with procedure PPT-SX-7525B, "Control Room Envelope Inleakage Using Tracer Gas Train B," Revision 0

The inspectors either witnessed or reviewed test data to verify that the significant surveillance test attributes were adequate to address the following:

- Preconditioning;
- Evaluation of testing impact on the plant;
- Acceptance criteria;
- Test equipment;
- Procedures; and
- Jumper/lifted lead controls

- Test data;
- Testing frequency and method demonstrated technical specification operability;
- Test equipment removal;
- Restoration of plant systems;
- Fulfillment of ASME Code requirements;
- Updating of performance indicator data;
- Reference setting data; and
- Annunciators and alarms setpoints

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of three surveillance testing inspection samples (one pump or valve inservice test sample, and two routine surveillance testing samples) as defined in IP 71111.22-05.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstones: Occupational and Public Radiation Safety

2RS04 Occupational Dose Assessment (71124.04)

a. Inspection Scope

This area was inspected to: (1) determine the accuracy and operability of personal monitoring equipment; (2) determine the accuracy and effectiveness of the licensee's methods for determining total effective dose equivalent; and (3) ensure occupational dose is appropriately monitored. The inspectors 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 inspectors interviewed licensee personnel, performed walkdowns of various portions of the plant, and reviewed the following items:

- External dosimetry accreditation, storage, issue, use, and processing of active and passive dosimeters;
- The technical competency and adequacy of the licensee's internal dosimetry program;
- Adequacy of the dosimetry program for special dosimetry situations such as declared pregnant workers, multiple dosimetry placement, and neutron dose assessment; and
- Audits, self-assessments, and corrective action documents related to dose assessment since the last inspection.

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of the one occupational dose assessment sample as defined in IP 71124.04-05.

b. Findings

No findings were identified.

2RS05 Radiation Monitoring Instrumentation (71124.05)

a. Inspection Scope

This area was inspected to verify the licensee is assuring the accuracy and operability of radiation monitoring instruments that are used to: (1) monitor areas, materials, and workers to ensure a radiologically safe work environment; and (2) detect and quantify radioactive process streams and effluent releases. The inspectors 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 inspectors interviewed licensee personnel, performed walkdowns of various portions of the plant, and reviewed the following items:

- Selected plant configurations and alignments of process, post-accident, and effluent monitors with descriptions in the Final Safety Analysis Report and the offsite dose calculation manual;
- Select instrumentation, including effluent monitoring instrument, portable survey instruments, area radiation monitors, continuous air monitors, personnel contamination monitors, portal monitors, and small article monitors to examine their configurations and source checks;
- Calibration and testing of process and effluent monitors, laboratory instrumentation, whole body counters, post-accident monitoring instrumentation, portal monitors, personnel contamination monitors, small article monitors, portable survey instruments, area radiation monitors, electronic dosimetry, air samplers, continuous air monitors; and
- Audits, self-assessments, and corrective action documents related to radiation monitoring instrumentation since the last inspection

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of the one radiation monitoring instrumentation sample as defined in IP 71124.05-05.

b. Findings

No findings were identified.

4OA1 Performance Indicator Verification (71151)

.1 Data Submission Issue

a. Inspection Scope

The inspectors performed a review of the data submitted by the licensee for the fourth quarter 2010 performance indicators for any obvious inconsistencies prior to its public release in accordance with IMC 0608, "Performance Indicator Program."

This review was performed as part of the inspectors' normal plant status activities and, as such, did not constitute a separate inspection sample.

b. Findings

No findings were identified.

.2 Unplanned Scrams per 7000 Critical Hours (IE01)

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned scrams per 7000 critical hours performance indicator for Units 1 and 2 for the period from January through December 2010. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, was used. The inspectors reviewed the licensee's operator narrative logs, event reports and NRC integrated inspection reports to validate the accuracy of the submittals. The inspectors also reviewed the corrective action database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of two unplanned scrams per 7000 critical hours samples as defined in IP 71151.05.

b. Findings

No findings were identified.

.3 Unplanned Power Changes per 7000 Critical Hours (IE03)

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned power changes per 7000 critical hours performance indicator for Units 1 and 2 for the period from January through December 2010. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, was used. The inspectors reviewed the licensee's operator narrative logs, maintenance rule records, event reports and NRC integrated inspection reports to validate the accuracy of the submittals. The inspectors also reviewed the licensee's corrective action database to determine if any problems had

been identified with the performance indicator data collected or transmitted for this indicator. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of two unplanned power changes per 7000 critical hours samples as defined in IP 71151.05.

.4 Unplanned Scrams with Complications (IE04)

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned scrams with complications performance indicator for Units 1 and 2 for the period from January through December 2010. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, was used. The inspectors reviewed the licensee's operator narrative logs, event reports and NRC integrated inspection reports to validate the accuracy of the submittals. The inspectors also reviewed the licensee's corrective action database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of two unplanned scrams with complications samples as defined in IP 71151.05.

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's corrective action program at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. The inspectors reviewed attributes that included: the complete and accurate identification of the problem; the timely correction, commensurate with the safety significance; the evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent of condition reviews, and previous occurrences reviews; and the classification, prioritization, focus, and timeliness of corrective actions. Minor issues entered into the licensee's corrective action program because of the inspectors' observations are included in the attached list of documents reviewed.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure, they were considered an

integral part of the inspections performed during the quarter and documented in Section 1 of this report.

b. Findings

No findings were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's corrective action program. The inspectors accomplished this through review of the station's daily corrective action documents.

The inspectors performed these daily reviews as part of their daily plant status monitoring activities, so these reviews did not constitute any separate inspection samples.

b. Findings

No findings were identified.

4OA3 Event Follow-up (71153)

(Closed) Licensee Event Reports 05000445/2010-002-00 and 05000445/2010-002-01, Loss of Automatic Initiation of Auxiliary Feedwater Upon Loss of Main Feedwater

On January 20, 2010, licensee personnel reviewed industry operating experience and identified that the anticipatory actuation of the auxiliary feedwater pumps on a loss of all main feedwater pumps would not function under certain conditions. Specifically, the logic would not actuate on trip of a single operating main feedwater pump when the second main feedwater pump is secured and reset. Two channels of auxiliary feedwater actuation logic on a trip of all main feedwater pumps is required to be operable in Modes 1 and 2 as specified by Technical Specification Table 3.3.2-1, Function 6.g. If one required trip channel is inoperable, the inoperable trip channel must be placed in a trip condition within six hours or the plant must be placed in Mode 3 within the following 72 hours.

A review by the licensee discovered occurrences where the required trip channel was inoperable and the technical specification required action was not completed. The licensee determined that the occurrences constituted a condition prohibited by technical specifications and was a common-cause inoperability of independent channels. The inspectors reviewed the licensee's submittal and determined that the report adequately documented the summary of the event, the potential safety consequences, and the corrective actions required to address the performance deficiency. The enforcement aspects of this violation are discussed in Section 4OA7.1 of this report. No additional violations were identified during the inspectors' review. These licensee event reports are closed.

4OA6 Meetings

Exit Meeting Summary

On February 17, 2011, the inspectors presented the results of the radiation safety inspections to Mr. M. Lucas, Site Vice President, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On March 28, 2011, the inspectors presented the resident inspection results to Mr. M. Lucas, Site Vice President, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors acknowledged review of proprietary material during the inspection. No proprietary information has been included in the report.

4OA7 Licensee-Identified Findings

The following violations of very low safety significance (Green) were identified by the licensee and were violations of NRC requirements which meet the criteria of Section 2.3.2.a of the NRC Enforcement Policy for being dispositioned as NCVs.

.1 Loss of Automatic Initiation of Auxiliary Feedwater Upon Loss of Main Feedwater

Technical Specification 3.3.2, Table 1, "Engineered Safety Feature Actuation System Instrumentation," Function 6.g, requires, in part, two operable channels of auxiliary feedwater actuation upon trip of all main feedwater pumps in Modes 1 and 2. With one channel inoperable, Technical Specification 3.3.2.J requires, in part, that the affected channel be placed in trip within 6 hours or be in Mode 3 within the following 12 hours. Contrary to the above, on January 20, 2010, the licensee identified that at various times, the actuation logic function for auxiliary feedwater had been inoperable and that the licensee had failed to place the affected channel in trip within 6 hours and was not in Mode 3 within the following 12 hours. Specifically, the actuation logic could not be made up with one main feedwater pump operating and the second main feedwater pump secured and reset. This condition occurred during unit startups and shutdowns. The non-cited violation was documented the licensee's corrective action program as Condition Report CR-2010-000638.

This finding was more than minor because it was associated with the configuration control attribute of the mitigating systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using IMC 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," the issue screened to a Phase 2 significance determination because it involved an actual loss of safety function of a single train for greater than its technical specification allowed outage time. A Phase 2 significance determination was performed using the pre-solved worksheet from the "Risk Informed Inspection Notebook for Comanche Peak Nuclear Power Plant." The inspectors noted that this feature was not credited in the plant's safety analysis and the auxiliary feedwater safety function was still available. Therefore, using the Phase 2 worksheets, no change in the quantifiable risk was obtained and the finding was determined to be of very low safety significance (Green).

.2 Incorrect Emergency Event Classification

Title 10 CFR Part 50.47(b)(4), "Emergency Plans," states, in part, that a standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee. "Comanche Peak Nuclear Power Plant Emergency Plan Units 1 and Unit 2," Revision 38, Step 1.1.2.1 requires, in part, that at the onset of an event, the shift manager will assess, classify, and declare an emergency. Contrary to the above, on February 18, 2011, the shift manager classified and declared an Unusual Event without meeting specific emergency action level criteria. Specifically, the shift manager misclassified a 40 gallon per minute chemical and volume control system leak as identified reactor coolant system leakage greater than 25 gallons per minute resulting in the incorrect declaration of an Unusual Event. Using IMC 0609, Appendix B, "Emergency Preparedness Significance Determination Process," Sheet 2, the finding was determined to have very low safety significance because the actual event implementation problem was associated with an Unusual Event. The NCV was documented the licensee's corrective action program as Condition Report 2011-001876.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

R. Flores, Senior Vice President and Chief Nuclear Officer
M. Lucas, Site Vice President
D. Kross, Acting Vice President, Nuclear Engineering and Plant Support
S. Bradley, Manager, Radiation Protection
D. Fuller, Manager, Emergency Preparedness
T. Hope, Manager, Nuclear Licensing
F. Madden, Director, Oversight and Regulatory Affairs
R. Moore, Manager, Chemistry
B. Patrick, Director, Maintenance
S. Sewell, Director, Operations
S. Smith, Plant Manager
K. Tate, Manager, Security
J. Taylor, Manager, Technical Support
D. Wilder, Director, Plant Support

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000446/2011002-01	NCV	Emergency Boration Flow Path Isolated (Section 1R04)
05000445/2011002-02 05000446/2011002-02	NCV	Inadequate Fire Drill Evaluation (Section 1R05.2)
05000445/2011002-03 05000446/2011002-03	NCV	Failure to Identify and Correct Safety Injection Reset Malfunction (Section 1R15)

Closed

05000445/2010002-00	LER	Loss of Automatic Initiation of Auxiliary Feedwater Upon Loss of Main Feedwater (Section 4OA3)
05000445/2010002-01	LER	Loss of Automatic Initiation of Auxiliary Feedwater Upon Loss of Main Feedwater (Section 4OA3)

LIST OF DOCUMENTS REVIEWED

Section 1RO4: Equipment Alignments

CONDITION REPORTS

2011-000492 2011-000492

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
ABN-107	Emergency Boration	8
FRS-0.1B	Response to Nuclear Power Generation/ATWT	8
SOP-105	Concentrated Boric Acid System	12
OPT-205B	Containment Spray System	14
OWI-103	Locked Component Listing and Deviation Control	15

DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
M2-0254	Flow Diagram, Chemical and Volume Control System Volume Control Tank Loop	CP-25
M2-0255, Sh. 2	Flow Diagram, Chemical and Volume Control System	CP-13
M2-0232	Flow Diagram, Containment Spray System	CP-21

Section 1RO5: Fire Protection

CONDITION REPORTS

2011-000237

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
FPI-506	Electrical and Control Building Control Room Elevation	4
FPI-504	Electrical and Control Building Unit 2 Cable Spread Room	1
FPI-505	Electrical and Control Building Unit 1 Cable Spread Room	3
FIR-303	Halon Fire Suppression System Inspection	5

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

CONDITION REPORTS

2010-005913 2011-002378

Section 1R15: Operability Evaluations

CONDITION REPORTS

2003-002426 2009-006088 2011-000902 2011-000950
2011-001279

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
ODA-407	Guideline on Use of Procedures	12
MSE-P0-8349	Limiterque Actuator Periodic Electrical and Mechanical Inspection	8
OPT-214A	Diesel Generator Operability Test	20
SOP-609A	Diesel Generator System	19

DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
1084H36	Refueling Water Storage Tank and Safety Injection Unit 1	CP-3
6D30472	Replacement Steam Generator General Arrangement	1

MISCELLANEOUS

Westinghouse IG96004, SSPS SI Reset Interlock Issue
Motor Operated Valve Database

Section 1R18: Plant Modifications

MISCELLANEOUS

FDA-2004-003620-01-04, Transformer XST2A Final Design Authorization

Section 1R19: Postmaintenance Testing

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OPT-214A	Diesel Generator Operability Test	20
OPT-204A	SI System	13

WORK ORDERS

4063321 4021115 3931612 3928331

CONDITION REPORTS

2011-000178

Section 1R22: Surveillance Testing

WORK ORDERS

4060395 4020200

Section 2RS04: Occupational Dose Assessment

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
RPI-500	Bioassay Program	12
RPI-509	Personnel Dosimetry Processing Program	13
RPI-602	Air Sample Analysis	42
RPI-515	Neutron Dose Measurement	15
RPI-516	Dose Determination	25
STA-655	Declared Pregnant Worker	19

AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
SA-2009-0029	On Site Assessment of Landauer Program	October 27, 2009
	Quality Assurance Manual, Landauer Incorporated	March 11, 2009

CONDITION REPORTS

2009-002970 2009-003493 2009-003943 2009-006795
2010-005524 2010-006256

MISCELLANEOUS DOCUMENTS

<u>TITLE</u>	<u>DATE</u>
Technical Basis of the Dosimetry Program: OSL/TLD Neutron Testing	May 2009
Personnel Dosimetry Performance Testing: HPS N13.11-2001	April 2008
Neutron Dosimetry Irradiation Report	July 2010
NVLAP Accreditation Program	January 2010

Section 2RS05: Radiation Monitoring Instrumentation

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
CLI-712	Operation of the 3180 TR/SL LSC	0
CLI-782	APEX Gamma Spectroscopy Counting System	1
INC-2047	DRMS Calibration Reference Activities	3
INC-7081X	DCOT & CCAL Liquid Waste Effluent Process Radiation Monitor CH X-RE-5253	5
INC-2099	Calibration of DRMS Liquid Process Monitor Detector (RD-33)	1
INC-7090X	DCOT, ACOT & CCAL Vent Stack WRGM, CH's X-RE-5570A & X-RE-5570B	6
INC-7084	DCOT & ACOT Turbine Building Floor Drains LPRM CH 1-RE-5100/2-RE-5100	8
RPI-800	Control of Radiation Protection Equipment	11
RPI-809	Operation of the Calibration Well Source	11
RPI-835	Calibration of Tennelec Model Series 5 Low Background Counter	13
RPI-862	Calibration of the Argos Personnel	8
RPI-881	Calibration of Portable Dose Rate Instruments	15
RPI-884	Calibration of the Eberline PCM-2 Personnel Contamination Monitor	2
RPI-886	Calibration of the Eberline PM-7 Personnel Monitor	4
RPI-888	Calibration of the Air Sample Equipment	3
RPI-889	Calibration of the Eberline AMS-4	2
RPI-895	Calibration of the NE Technology SAM Small Article Monitor	5
RPI-899	Teletrak Siemens Wireless Dosimeter Monitoring System	3

AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
CR-2010-8525	CPNPP Self Assessment Instrumentation Program	November 11, 2010

RADIATION PROTECTION INSTRUMENTATION CALIBRATIONS

<u>IDENTIFICATION-MODEL NO</u>	<u>INSTRUMENT TYPE</u>	<u>CALIBRATION DATE</u>
FSCAN	Whole Body Counter	August 16, 2010
ASCAN	Whole Body Counter	December 16, 2010
HP-0061	Small Article Monitor	August 24, 2010

RADIATION PROTECTION INSTRUMENTATION CALIBRATIONS

<u>IDENTIFICATION-MODEL NO</u>	<u>INSTRUMENT TYPE</u>	<u>CALIBRATION DATE</u>
HP-0062	Small Article Monitor	July 7, 2010
HP-0063	Small Article Monitor	July 6, 2009
HP-0058	ARGOS Personnel Contamination Monitor	June 21, 2010
HP-0058	ARGOS Personnel Contamination Monitor	January 6, 2010
HP-0060	ARGOS Personnel Contamination Monitor	October 12, 2010
HP-7C-158	PM-7	January 6, 2011
HP-7C-039	PM-7	May 18, 2011
7100287	EPD-N2	September 10, 2010
7100346	EPD-N2	September 10, 2010

CONDITION REPORTS

2009-003170	2009-003889	2009-006795	2010-000055
2010-000710	2010-006790	2010-006792	2010-006841
2010-007163	2010-008525		

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
CP-480-001	Vendor Manual; Liquid Radiation Monitors	Revision 4
4-03-147131	Work Order; Calibration of Liquid Waste Processing Discharge Monitor	February 18, 2003
397372	Work Order; North Vent Stack Wide Range Gas Monitor 5570B	June 11, 2008
392683	Work Order; South Vent Stack Wide Range Gas Monitor 5570B	March 31, 2008
3719821	Work Order; Turbine Building Sump 2-04 Radiation Detector	January 17, 2011
ASP-1 #2454	Certificate of Calibration	November 12, 2009
ASP-1 #2455	Certificate of Calibration	November 12, 2009