



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION IV
1600 E. LAMAR BLVD.
ARLINGTON, TX 76011-4511

April 29, 2016

Mr. Ken Peters, 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 05000445/2016001 AND 05000446/2016001

Dear Mr. Peters:

On March 31, 2016, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Comanche Peak Nuclear Power Plant, Units 1 and 2. On March 24, 2016, the NRC inspectors discussed the results of this inspection with Tom McCool, Site Vice President, and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

NRC inspectors documented one finding of very low safety significance (Green) in this report. The finding involved a violation of NRC requirements. Further, inspectors documented a licensee-identified violation which was determined to be of very low safety significance in this report. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2.a of the NRC Enforcement Policy.

If you contest the violations or significance of these 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, DC 20555-0001; with copies to the Regional Administrator, Region IV; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC resident inspector at the Comanche Peak Nuclear Power Plant, Units 1 and 2.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC's Public Document Room or from the Publicly Available Records (PARS) component of the 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/

Jeremy R. Groom, Chief
Project Branch A
Division of Reactor Projects

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

Enclosure:
Inspection Report 05000445/2016001 and
050446/2016001
w/ Attachment: Supplemental Information

cc w/ encl: Electronic Distribution

K. Peters

- 2 -

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Letter to Ken Peters from Jeremy Groom dated April 29, 2016

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT-NRC INTEGRATED
INSPECTION REPORT 05000445/2016001 AND 05000446/2016001

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket: 05000445, 05000446

License: NPF-87, NPF-89

Report: 05000445/2016001 and 05000446/2016001

Licensee: Luminant Generation Company, LLC

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

Location: 6322 N. FM-56, Glen Rose, Texas

Dates: January 1 through March 31, 2016

Inspectors: J. Josey, Senior Resident Inspector
S. Hedger, Acting Senior Resident Inspector
R. Kumana, Resident Inspector
M. Bloodgood, Operations Engineer
J. Watkins, Reactor Inspector
L. Carson II, Senior Health Physicist
B. Dionne, CHP, Health Physicist
P. Hernandez, Health Physicist
J. O'Donnell, CHP, Health Physicist
G. Guerra, CHP, Emergency Preparedness Inspector

Approved By: Jeremy R. Groom
Chief, Project Branch A
Division of Reactor Projects

SUMMARY

IR 05000445/2016001 and 05000446/2016001; 01/01/2016 – 03/31/2016; Comanche Peak NPP, Units 1 and 2; Problem Identification and Resolution.

The inspection activities described in this report were performed between January 1, 2016, through March 31, 2016, by the resident inspectors at the Comanche Peak Nuclear Power Plant and inspectors from the NRC's Region IV office. One finding of very low safety significance (Green) is documented in this report. This finding involved a violation of NRC requirements. Additionally, NRC inspectors documented in this report one licensee-identified violation of very low safety significance. The significance of inspection findings is indicated by their color (Green, White, Yellow, or Red), which is determined using Inspection Manual Chapter 0609, "Significance Determination Process." Their cross-cutting aspects are determined using Inspection Manual Chapter 0310, "Aspects within the Cross-Cutting Areas." Violations of NRC requirements are dispositioned in accordance with the NRC Enforcement Policy. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process."

Cornerstone: Mitigating Systems

- Green. The inspectors identified seven examples of a non-cited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," associated with the licensee's failure to perform adequate operability assessments for a degraded or nonconforming condition. Specifically, when vacuum breakers installed in the service water system failed to actuate during surveillance testing, the licensee completed an operability evaluation that relied on judgement, and was contrary to the station design analysis. In particular, the licensee concluded that the vacuum breakers were not required to support operability of the service water system. Following questions from inspectors, the licensee determined that this judgement was not correct and performed a new evaluation to establish operational parameters necessary to ensure operability of the service water system with a failed vacuum breaker. The licensee entered this issue into corrective action program as Condition Report CR-2015-008334.

The failure to properly assess and document the basis for operability for a degraded or nonconforming condition was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, service water vacuum breakers failing to open resulted in a condition where structures, systems, and components necessary to mitigate the effects of a column separation event may not have functioned as required. Using Inspection Manual Chapter (IMC) 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, inspectors determined that this finding was of very low safety significance (Green) because the finding (1) was not a deficiency affecting the design and qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality, (2) did not represent a loss of system and/or function, (3) did not represent an actual loss of function of at least a single train for longer than its allowed outage time, or two separate safety systems out-of-service for longer than their technical specification allowed outage time, and (4) does not represent an actual loss of function of one or more non-technical specification trains of

equipment designated as high safety-significant for greater than 24 hours in accordance with the licensee's maintenance rule program. The inspectors determined that this finding does not have a cross-cutting aspect because the most significant contributor of this finding occurred more than three years ago, and is not indicative of current licensee performance. (Section 4OA2)

Licensee-Identified Violations

A violation of very low safety significance that was identified by the licensee has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and associated corrective action tracking numbers are listed in Section 4OA7 of this report.

PLANT STATUS

Unit 1 began the inspection period at approximately 100 percent power. On January 8, 2016, the licensee reduced power to approximately 65 percent power for turbine and feedwater pump testing. The unit returned to approximately 100 percent power the next day, and operated at that power level for the remainder of the inspection period.

Unit 2 began the inspection period at approximately 100 percent power. On March 11, 2016, the licensee reduced power to approximately 60 percent power for feedwater pump testing. The unit returned to approximately 100 percent power the next day, and operated at that power level for the remainder of the inspection period.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Readiness to Cope with External Flooding

a. Inspection Scope

On March 9, 2016, the inspectors completed an inspection of the station's readiness to cope with external flooding. After reviewing the licensee's flooding analysis, the inspectors selected three plant areas that were susceptible to flooding:

- Circulating water intake and discharge structures
- Station service water intake structure
- Electrical and control building and turbine building, 778' elevation

The inspectors reviewed plant design features and licensee procedures for coping with flooding. The inspectors walked down the selected areas to inspect the design features, including the material condition of seals, drains, and flood barriers. The inspectors evaluated whether credited operator actions could be successfully accomplished.

These activities constituted one sample of readiness to cope with external flooding, as defined in Inspection Procedure 71111.01.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial Walk-Down

a. Inspection Scope

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

- February 22, 2016, spent fuel pool cooling pump X-02 while pump X-01 was out of service for maintenance
- February 23-24, 2016, Unit 1, train A component cooling water system
- March 3, 2016, Unit 1, emergency diesel generators 1-01 and 1-02 during work on turbine driven auxiliary feedwater pump
- March 10, 2016, Unit 1, emergency diesel generators 1-01 and 1-02 while emergency diesel generator 2-01 was scheduled for an engine analysis run

The inspectors reviewed the licensee's procedures and system design information to determine the correct lineup for the systems. They visually verified that critical portions of the systems were correctly aligned for the existing plant configuration.

These activities constituted four partial system walk-down samples as defined in Inspection Procedure 71111.04.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Inspection

a. Inspection Scope

The inspectors evaluated the licensee's fire protection program for operational status and material condition. The inspectors focused their inspection on four plant areas important to safety:

- March 8, 2016, Unit 1, fire zone SB4, safeguards 790' corridor
- March 8, 2016, Unit 2, fire zone 2SB4, safeguards 790' corridor
- March 10, 2016, Unit 1, fire zone EC50, train B inverter room X-118
- March 10, 2016, Unit 1, fire zone SB8, safeguards 810' corridor

For each area, the inspectors evaluated the fire plan against defined hazards and defense-in-depth features in the licensee's fire protection program. The inspectors evaluated control of transient combustibles and ignition sources, fire detection and suppression systems, manual firefighting equipment and capability, passive fire protection features, and compensatory measures for degraded conditions.

These activities constituted four quarterly inspection samples, as defined in Inspection Procedure 71111.05.

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

On February 25, 2016, the inspectors completed an inspection of the station's ability to mitigate flooding due to internal causes. After reviewing the licensee's flooding analysis, the inspectors chose one plant area containing risk-significant structures, systems, and components that were susceptible to flooding:

- Unit 2 emergency diesel generator rooms

The inspectors reviewed plant design features and licensee procedures for coping with internal flooding. The inspectors walked down the selected areas to inspect the design features, including the material condition of seals, drains, and flood barriers. The inspectors evaluated whether operator actions credited for flood mitigation could be successfully accomplished.

These activities constituted completion of one flood protection measures sample, as defined in Inspection Procedure 71111.06.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program and Licensed Operator Performance (71111.11)

.1 Review of Licensed Operator Requalification

a. Inspection Scope

On February 11, 2016, the inspectors observed an evaluated simulator scenario performed by an operating crew. The inspectors assessed the performance of the operators and the evaluators' critique of their performance. The inspectors also assessed and the modeling and performance of the simulator during the requalification activities.

These activities constituted completion of one quarterly licensed operator requalification program sample, as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

.2 Review of Licensed Operator Performance

a. Inspection Scope

The inspectors observed the performance of on-shift licensed operators in the plant's main control room. At the time of the observations, the plant was in a period of heightened risk due to testing being performed on reactor protection and engineered safety features systems. The inspectors observed the operators' performance of the following activities:

- January 25, 2016, Unit 2, reactor trip breaker testing
- February 22, 2016, Unit 2, solid state protection system testing
- March 8, 2016, Unit 2, repair of valve 2RC-8054A on the Unit 2 pressurizer and restoration of level transmitters LT-459 and LT-459F to service

In addition, the inspectors assessed the operators' adherence to plant procedures, including conduct of operations procedure and other operations department policies.

These activities constituted completion of one quarterly licensed operator performance sample, as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

.3 Annual Review of Regualification Examination Results

The licensed operator regualification program involves two training cycles that are conducted over a two-year period. In the first cycle, the annual cycle, the operators are administered an operating test consisting of job performance measures and simulator scenarios. In the second part of the training cycle, the biennial cycle, operators are administered an operating test and a comprehensive written examination. For this annual inspection requirement, the licensee was in the first part of the training cycle.

a. Inspection Scope

The inspector conducted an in-office review of the annual regualification training program to determine the results of this program.

On January 4, 2016, the licensee informed the inspector of the following results:

- 13 of 14 crews passed the simulator portion of the operating test
- 72 of 78 licensed operators passed the simulator portion of the operating test
- 77 of 78 licensed operators passed the job performance measure portion of the operating test

The individuals that failed the Simulator Scenario and Job Performance Measure portions of the operating test were remediated, retested, and passed their retake tests.

The inspector completed one inspection sample of the annual licensed operator requalification program.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed one instance of degraded performance or condition of safety-related structures, systems, and components (SSCs):

- February 19, 2016, Unit 2, feed water check valves 2FW-191, 2FW-192, 2FW-193, and 2FW-194 in-service testing failures

The inspectors reviewed the extent of condition of possible common cause SSC failures and evaluated the adequacy of the licensee's corrective actions. The inspectors reviewed the licensee's work practices to evaluate whether these may have played a role in the degradation of the SSCs. The inspectors assessed the licensee's characterization of the degradation in accordance with 10 CFR 50.65 (the Maintenance Rule), and verified that the licensee was appropriately tracking degraded performance and conditions in accordance with the Maintenance Rule.

These activities constituted completion of one maintenance effectiveness sample, as defined in Inspection Procedure 71111.12.

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed five risk assessments performed by the licensee prior to changes in plant configuration and the risk management actions taken by the licensee in response to elevated risk:

- January 11, 2016, Unit 2, 125 V DC Battery discharge test
- January 27, 2016, Unit 2, Maintenance on steam generator blowdown isolation valve 2-HV-2400A
- February 12, 2016, Unit 2, Maintenance on turbine driven auxiliary feedwater pump flow control valve
- February 16, 2016, both units, Maintenance on the 138 kV Decordova offsite power line

- March 1, 2016, Unit 2, Maintenance on offsite power supply breaker for bus 2EA2

The inspectors verified that these risk assessment were performed timely and in accordance with the requirements of 10 CFR 50.65 (the Maintenance Rule) and plant procedures. The inspectors reviewed the accuracy and completeness of the licensee's risk assessments and verified that the licensee implemented appropriate risk management actions based on the result of the assessments.

These activities constituted completion of five maintenance risk assessments and emergent work control inspection samples, as defined in Inspection Procedure 71111.13.

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed five operability determinations and functionality assessments that the licensee performed for SSCs:

- January 19, 2016, CR-2016-000477, operability determination of Unit 1 emergency diesel generator 1-02 due to a starting air leak
- February 4, 2016, CR-2016-000898, operability determination for Units 1 and 2 emergency diesel generator fuel oil transfer pumps due to potential for internal flooding from fire water piping
- March 7, 2016, CR-2016-001706, operability determination for Unit 2 valve 2RC-8054A due to a packing leak
- March 10, 2016, CR-2016-002006, operability determination for Unit 2 emergency diesel generator 2-01 due to loose magnetic speed sensor cable
- March 17, 2016, CR-2016-002507, functionality assessment for the technical support center due to degraded air handling unit

The inspectors reviewed the timeliness and technical adequacy of the licensee's evaluations. Where the licensee determined the degraded SSC to be operable or functional, the inspectors verified that the licensee's compensatory measures were appropriate to provide reasonable assurance of operability or functionality. The inspectors verified that the licensee had considered the effect of other degraded conditions on the operability or functionality of the degraded SSC.

These activities constituted completion of five operability and functionality review samples as defined in Inspection Procedure 71111.15.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

.1 Temporary Modifications

a. Inspection Scope

On March 7, 2016, the inspectors reviewed a temporary modification to perform leak sealant injection to pressurizer instrument isolation valve 2RC-8054A.

The inspectors verified that the licensee had installed this temporary modification in accordance with technically adequate design documents. The inspectors verified that this modification did not adversely impact the operability or availability of affected SSCs. The inspectors reviewed design documentation and plant procedures affected by the modification to verify the licensee maintained configuration control.

These activities constituted completion of one sample of a temporary modification, as defined in Inspection Procedure 71111.18.

b. Findings

No findings were identified.

.2 Permanent Modifications

a. Inspection Scope

On February 23, 2016, the inspectors reviewed one permanent modification to the station service water system. This modification removed the vacuum breakers on the suction side piping, relocated the vacuum breakers on the discharge piping and added isolation valves to the vacuum breakers on the discharge piping.

The inspectors reviewed the design and implementation of the modification. The inspectors verified that work activities involved in implementing the modification did not adversely impact operator actions that may be required in response to an emergency or other unplanned event. The inspectors verified that post-modification testing was adequate to establish the operability of the SSC as modified.

These activities also included a follow up of Unresolved Item 05000445/2015008-05; 05000446/2015008-05, "Failure to Perform Adequate Operability Assessments associated with Failures of Service Water System Vacuum Breaker during Surveillance Tests," as documented in Section 4OA2.

These activities constituted completion of one sample of a permanent modification, as defined in Inspection Procedure 71111.18.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed five post-maintenance testing activities that affected risk-significant SSCs:

- January 5, 2016, Unit 1, VT-2 visual examination of welds following vacuum breaker modification
- February 17, 2016, Unit 2, turbine driven auxiliary feedwater pump
- February 23, 2016, Unit 1, steam generator atmospheric relief valve
- March 8, 2016, Unit 2, pressurizer level instruments LT-459 and LT-459F
- March 21, 2016, Unit 2, safety injection pump 2-01 following preventative maintenance

The inspectors reviewed licensing- and design-basis documents for the SSCs and the maintenance and post-maintenance test procedures. The inspectors observed the performance of the post-maintenance tests to verify that the licensee performed the tests in accordance with approved procedures, satisfied the established acceptance criteria, and restored the operability of the affected SSCs.

These activities constituted completion of five post-maintenance testing inspection samples, as defined in Inspection Procedure 71111.19.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed four risk-significant surveillance tests and reviewed test results to verify that these tests adequately demonstrated that the SSCs were capable of performing their safety functions:

In-service tests:

- January 27, 2016, Unit 1, train A emergency diesel generator fuel oil system transfer pump test in accordance with procedure OPT-513A, "SI Pump Performance and Flow Balancing," Revision 1
- February 23, 2016, Unit 2, steam generator 2-04 check valve 2FW-191 test in accordance with procedure OPT-506B, "FW Valve Testing," Revision 9

Reactor coolant system leak detection tests:

- February 19, 2016, Unit 1, manual reactor coolant leak rate determination test in accordance with procedure OPT-303A, "Reactor Coolant System Water Inventory," Revision 14

Other surveillance tests:

- February 12, 2016, Unit 2, steam generator flow control valve 2-HV-2459-AO test in accordance with procedure IST-305, "Air Operated Valve Program Document," Revision 6

The inspectors verified that these tests met technical specification requirements, that the licensee performed the tests in accordance with their procedures, and that the results of the test satisfied appropriate acceptance criteria. The inspectors verified that the licensee restored the operability of the affected SSCs following testing.

These activities constituted completion of four surveillance testing inspection samples, as defined in Inspection Procedure 71111.22.

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP2 Alert and Notification System Evaluation (71114.02)

a. Inspection Scope

The inspector verified the adequacy of the licensee's methods for testing the primary and backup alert and notification system (ANS). The inspector interviewed licensee personnel responsible for the maintenance of the primary and backup ANS and reviewed a sample of corrective action system reports written for ANS problems. The inspector compared the licensee's alert and notification system testing program with criteria in NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1; FEMA Report REP-10, "Guide for the Evaluation of Alert and Notification Systems for Nuclear Power Plants"; and the licensee's current FEMA-approved alert and notification system design report, "Comanche Peak Nuclear Power Plant Alert and Notification System Design Report," Revision 2.

These activities constituted completion of one alert and notification system evaluation sample as defined in Inspection Procedure 71114.02.

b. Findings

No findings were identified.

1EP3 Emergency Response Organization Staffing and Augmentation System (71114.03)

a. Inspection Scope

The inspector verified the licensee's emergency response organization on-shift and augmentation staffing levels were in accordance with the licensee's emergency plan commitments. The inspector reviewed documentation and discussed with licensee staff the operability of primary and backup systems for augmenting the on-shift emergency response staff to verify the adequacy of the licensee's methods for staffing emergency response facilities, including the licensee's ability to staff pre-planned alternate facilities. The inspector also reviewed records of emergency response organization augmentation tests and events to determine whether the licensee had maintained a capability to staff emergency response facilities within emergency plan timeliness commitments.

These activities constitute completion of one emergency response organization staffing and augmentation testing sample as defined in Inspection Procedure 71114.03.

b. Findings

No findings were identified.

1EP5 Maintenance of Emergency Preparedness (71114.05)

a. Inspection Scope

The inspector reviewed the following for the period May 2014 to January 2016:

- After-Action reports for emergency classifications and events
- After-Action evaluation reports for licensee drills and exercises
- Independent audits and surveillances of the licensee's emergency preparedness program
- Self-Assessments of the emergency preparedness program conducted by the licensee
- Licensee evaluations of changes made to the emergency plan and emergency plan implementing procedures
- Drill and Exercise performance issues entered into the licensee's Corrective Action Program
- Emergency preparedness program issues entered into the licensee's Corrective Action Program
- Emergency response organization training records

The inspector reviewed summaries of corrective action program reports associated with emergency preparedness and selected 29 to review against program requirements, to determine the licensee's ability to identify, evaluate, and correct problems in accordance

with planning standard 10 CFR 50.47(b)(14) and 10 CFR Part 50, Appendix E, IV.F. The inspector verified that the licensee accurately and appropriately identified and corrected emergency preparedness weaknesses during critiques and assessments.

These activities constitute completion of one sample of the maintenance of the licensee's emergency preparedness program as defined in Inspection Procedure 71114.05.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors observed an emergency preparedness drill on February 24, 2016, to verify the adequacy and capability of the licensee's assessment of drill performance. The inspectors reviewed the drill scenario, observed the drill from the simulator and technical support center, and attended the post-drill critique. The inspectors verified that the licensee's emergency classifications, off-site notifications, and protective action recommendations were appropriate and timely. The inspectors verified that any emergency preparedness weaknesses were appropriately identified by the licensee in the post-drill critique and entered into the corrective action program for resolution.

These activities constituted completion of one emergency preparedness drill observation sample, as defined in Inspection Procedure 71114.06.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstones: Public Radiation Safety and Occupational Radiation Safety

2RS5 Radiation Monitoring Instrumentation (71124.05)

a. Inspection Scope

The inspectors evaluated the accuracy and operability of the radiation monitoring equipment used by the licensee (1) to monitor areas, materials, and workers to ensure a radiologically safe work environment, and (2) to detect and quantify radioactive process streams and effluent releases. The inspectors interviewed licensee personnel, walked down various portions of the plant, and reviewed licensee performance in the following areas:

- 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

- Selected 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, and continuous air monitors
- Audits, self-assessments, and corrective action documents related to radiation monitoring instrumentation since the last inspection

These activities constituted completion of Inspection Procedure 71124.05.

b. Findings

No findings were identified.

2RS6 Radioactive Gaseous and Liquid Effluent Treatment (71124.06)

a. Inspection Scope

The inspectors evaluated whether the licensee maintained gaseous and liquid effluent processing systems and properly mitigated, monitored, and evaluated radiological discharges with respect to public exposure. The inspectors verified that abnormal radioactive gaseous or liquid discharges and conditions, when effluent radiation monitors were out-of-service, were controlled in accordance with the applicable regulatory requirements and licensee procedures. The inspectors verified that the licensee's quality control program ensured radioactive effluent sampling and analysis adequately quantified and evaluated discharges of radioactive materials. The inspectors verified the adequacy of public dose projections resulting from radioactive effluent discharges. The inspectors interviewed licensee personnel and reviewed or observed the following items:

- Radiological effluent release reports since the previous inspection and reports related to the effluent program issued since the previous inspection
- Effluent program implementing procedures, including sampling, monitor setpoint determinations and dose calculations
- Equipment configuration and flow paths of selected gaseous and liquid discharge system components, filtered ventilation system material condition, and significant changes to their effluent release points, if any, and associated 10 CFR 50.59 reviews
- Selected portions of the routine processing and discharge of radioactive gaseous and liquid effluents (including sample collection and analysis)

- Controls used to ensure representative sampling and appropriate compensatory sampling
- Results of the inter-laboratory comparison program
- Effluent stack flow rates
- Surveillance test results of technical specification-required ventilation effluent discharge systems since the previous inspection
- Significant changes in reported dose values
- A selection of radioactive liquid and gaseous waste discharge permits
- Part 61 analyses and methods used to determine which isotopes are included in the source term
- Offsite dose calculation manual changes
- Meteorological dispersion and deposition factors
- Latest land use census
- Records of abnormal gaseous or liquid tank discharges
- Groundwater monitoring results
- Changes to the licensee's written program for identifying and controlling contaminated spills/leaks to groundwater
- Identified leakage or spill events and entries made into 10 CFR 50.75(g) records, if any, and associated evaluations of the extent of the contamination and the radiological source term
- Offsite notifications and reports of events associated with spills, leaks, and groundwater monitoring results
- Audits, self-assessments, reports, and corrective action documents related to radioactive gaseous and liquid effluent treatment since the last inspection

These activities constituted completion of Inspection Procedure 71124.06.

b. Findings

No findings were identified.

2RS7 Radiological Environmental Monitoring Program (71124.07)

a. Inspection Scope

The inspectors evaluated whether the licensee's radiological environmental monitoring program quantified the impact of radioactive effluent releases to the environment and sufficiently validated the integrity of the radioactive gaseous and liquid effluent release program. The inspectors verified that the radiological environmental monitoring program was implemented consistent with the licensee's technical specifications and offsite dose calculation manual, and that the radioactive effluent release program met the design objective in Appendix I to 10 CFR Part 50. The inspectors verified that the licensee's radiological environmental monitoring program monitored non-effluent exposure pathways, was based on sound principles and assumptions, and validated that doses to members of the public were within regulatory dose limits. The inspectors reviewed or observed the following items:

- Annual environmental monitoring reports and offsite dose calculation manual
- Selected air sampling and dosimeter monitoring stations
- Collection and preparation of environmental samples
- Operability, calibration, and maintenance of meteorological instruments
- Selected events documented in the annual environmental monitoring report which involved a missed sample, inoperable sampler, lost dosimeter, or anomalous measurement
- Selected structures, systems, or components that may contain licensed material and has a credible mechanism for licensed material to reach ground water
- Records required by 10 CFR 50.75(g)
- Significant changes made by the licensee to the offsite dose calculation manual as the result of changes to the land census or sampler station modifications since the last inspection
- Calibration and maintenance records for selected air samplers, composite water samplers, and environmental sample radiation measurement instrumentation
- Inter-laboratory comparison program results
- Audits, self-assessments, reports, and corrective action documents related to the radiological environmental monitoring program since the last inspection

These activities constituted completion of Inspection Procedure 71124.07.

b. Findings

No findings were identified.

2RS8 Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation (71124.08)

a. Inspection Scope

The inspectors evaluated the effectiveness of the licensee's programs for processing, handling, storage, and transportation of radioactive material. The inspectors interviewed licensee personnel and reviewed the following items:

- The solid radioactive waste system description, process control program, and the scope of the licensee's audit program
- Control of radioactive waste storage areas including container labeling/marketing and monitoring containers for deformation or signs of waste decomposition
- Changes to the liquid and solid waste processing system configuration including a review of waste processing equipment that is not operational or abandoned in place
- Radio-chemical sample analysis results for radioactive waste streams and use of scaling factors and calculations to account for difficult-to-measure radionuclides
- Processes for waste classification including use of scaling factors and 10 CFR Part 61 analyses
- Shipment packaging, surveying, labeling, marking, placarding, vehicle checking, driver instructing, and preparation of the disposal manifest
- Audits, self-assessments, reports, and corrective action reports radioactive solid waste processing, and radioactive material handling, storage, and transportation performed since the last inspection

These activities constitute completion of Inspection Procedure 71124.08.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Security

4OA1 Performance Indicator Verification (71151)

.1 Unplanned Scrams per 7000 Critical Hours (IE01)

a. Inspection Scope

The inspectors reviewed licensee event reports (LERs) for the period of January 2015, through December 2015, to determine the number of scrams that occurred. The inspectors compared the number of scrams reported in these LERs to the number reported for the performance indicator. Additionally, the inspectors reviewed operating logs to verify the number of critical hours during the period. The inspectors used definitions and guidance contained in Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the data reported.

These activities constituted verification of the unplanned scrams per 7000 critical hours performance indicator for Units 1 and 2, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed operating logs, corrective action program records, and operating reports for the period of January 2015, through December 2015, to determine the number of unplanned power changes that occurred. The inspectors compared the number of unplanned power changes documented to the number reported for the performance indicator. Additionally, the inspectors reviewed operating logs to verify the number of critical hours during the period. The inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the data reported.

These activities constituted verification of the unplanned power outages per 7000 critical hours performance indicator for Units 1 and 2, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.3 Unplanned Scrams with Complications (IE04)

a. Inspection Scope

The inspectors reviewed the licensee's basis for including or excluding in this performance indicator each scram that occurred between January 2015, and December 2015. The inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the data reported.

These activities constituted verification of the unplanned scrams with complications performance indicator for Units 1 and 2, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.4 Drill/Exercise Performance (EP01)

a. Inspection Scope

The inspector reviewed the licensee's evaluated exercises, and selected drill and training evolutions that occurred between April 2015 and December 2015 to verify the accuracy of the licensee's data for classification, notification, and protective action recommendation (PAR) opportunities. The inspector reviewed a sample of the licensee's completed classifications, notifications, and PARs to verify their timeliness and accuracy. The inspector used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the data reported. The specific documents reviewed are described in the attachment to this report.

These activities constituted verification of the drill/exercise performance indicator as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.5 Emergency Response Organization Drill Participation (EP02)

a. Inspection Scope

The inspector reviewed the licensee's records for participation in drill and training evolutions between April 2015 and December 2015 to verify the accuracy of the licensee's data for drill participation opportunities. The inspector verified that all members of the licensee's emergency response organization (ERO) in the identified key positions had been counted in the reported performance indicator data. The inspector reviewed the licensee's basis for reporting the percentage of ERO members who participated in a drill. The inspector reviewed drill attendance records and verified a sample of those reported as participating. The inspector used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator

Guideline,” Revision 7, to determine the accuracy of the data reported. The specific documents reviewed are described in the attachment to this report.

These activities constituted verification of the emergency response organization drill participation performance indicator as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.6 Alert and Notification System Reliability (EP03)

a. Inspection Scope

The inspector reviewed the licensee’s records of Alert and Notification System tests conducted between April 2015 and December 2015 to verify the accuracy of the licensee’s data for siren system testing opportunities. The inspector reviewed procedural guidance on assessing Alert and Notification System opportunities and the results of periodic alert and notification system operability tests. The inspector used definitions and guidance contained in NEI Document 99-02, “Regulatory Assessment Performance Indicator Guideline,” Revision 7, to determine the accuracy of the data reported. The specific documents reviewed are described in the attachment to this report.

These activities constituted verification of the alert and notification system reliability performance indicator as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152)

.1 Routine Review

a. Inspection Scope

Throughout the inspection period, the inspectors performed daily reviews of items entered into the licensee’s corrective action program and periodically attended the licensee’s condition report screening meetings. The inspectors verified that licensee personnel were identifying problems at an appropriate threshold and entering these problems into the corrective action program for resolution. The inspectors verified that the licensee developed and implemented corrective actions commensurate with the significance of the problems identified. The inspectors also reviewed the licensee’s problem identification and resolution activities during the performance of the other inspection activities documented in this report.

b. Findings

No findings were identified.

.2 Annual Follow-up of Selected Issues

a. Inspection Scope

The inspectors selected one issue for an in-depth follow-up:

- On March 30, 2014, relay 27-59/2EG2 (K-300 relay), an under voltage relay associated with breaker 2EG2, was found to be out of set point tolerances while performing work order 4500655 and procedure MSE-GO-0020, "Relay Calibration," Attachment BE01. Condition Reports 2014-003431 and 2015-008148 were written to evaluate the issue, including a past operability review. Initially, a potential for the K-300 relay revised settings to allow EDG operation outside the Technical Specifications limits, without isolation of a faulty Automatic Voltage Regulator (AVR), was not recognized. After further evaluation, it was determined that the K-300 relay would cause the AVR to be disconnected prior to the Class 1E bus degrading outside its Technical Specification limits.

The inspectors assessed the licensee's problem identification threshold, cause analyses, extent of condition reviews and compensatory actions. The inspectors verified that the licensee appropriately prioritized the planned corrective actions and that these actions were adequate to correct the condition.

These activities constituted completion of one annual follow-up sample as defined in Inspection Procedure 71152.

b. Findings

No findings were identified.

.3 (Closed) Unresolved Item 05000445/2015008-05; 05000446/2015008-05, Failure to Perform Adequate Operability Assessments associated with Failures of Service Water System Vacuum Breaker during Surveillance Tests

a. Inspection Scope

The inspectors reviewed an unresolved item associated with the failure of service water vacuum breakers. When these failures occurred, the licensee evaluated the operability of the service water system and determined that the system was degraded but operable because the vacuum breakers were not required for system operability.

Inspectors identified that the vacuum breakers in the discharge piping were required, and that the licensee had insufficient information documented associated with the vacuum breaker failures in order to determine if a non-compliance existed. Specifically, the NRC required information associated with the specific valves that failed, the length of time that the failed valves remained in service prior to replacement, and whether the opposite train diesel generator was inoperable during the periods the failed valves remained in service.

b. Findings

Introduction. The inspectors identified seven examples of a Green non-cited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," associated with the licensee's failure to perform adequate operability assessments for a degraded or nonconforming condition. Specifically, the licensee failed to follow station procedures when evaluating the operability of the service water system following identification of degraded system vacuum breaker valves.

Description. Inspection report 2015-008 documented URI 05000445/2015008-05; 05000446/2015008-05, "Failure to Perform Adequate Operability Assessments associated with Failures of Service Water System Vacuum Breaker during Surveillance Tests." This URI involved licensee operability assessments performed for surveillance tests where at least one of the service water systems vacuum breakers failed to meet surveillance acceptance criteria to actuate at the required set point. Following these failed surveillances, operations used a previously generated engineering evaluation and determined that the service water system was degraded but operable because the vacuum breakers were not required for system operability. To address this degraded condition, maintenance personnel mechanically agitated the vacuum breakers but did not replace the vacuum breakers until a later date.

Inspectors noted the station service water system contains a 1-inch vacuum breaker on the supply header and a 2-inch vacuum breaker on the return header. Design basis calculations identified that the return header vacuum breakers are required to protect the diesel generator jacket water coolers from water hammer events caused by column separation. Because the design relied on the return header vacuum breakers, the inspectors determined that the licensee did not have appropriate justification to conclude that the service water system remained operable with a failed discharge side vacuum breaker. The inspectors noted that Station Procedure STI-422.01, "Operability Determination and Functionality Assessment Program," Revision 3 Step 6.1, requires, in part, that when a potential degraded or nonconforming condition is identified, the shift manager should ensure the operability determination process is initiated to determine the operability of the structure, system or component. The inspectors determined the licensee had failed to follow this procedure when evaluating operability of the service water system with failed vacuum breakers, in that operators utilized incorrect information in the operability evaluations.

During subsequent reviews of 26 vacuum breaker failures that occurred in the service water system between September 2010 and November 2015, the licensee identified 7 associated with the 2-inch return header vacuum breakers. The licensee performed an evaluation for the seven failures of 2-inch return header vacuum breakers to determine if the service water system remained functional. The licensee's evaluation concluded that a new temperature limit of 93.8 degrees Fahrenheit for the safe shutdown impoundment was required to prevent water column separation and potential water hammer. The licensee's evaluation identified an approximately 20-day period in summer of 2013 and a 15-day period in summer of 2014 where the temperature of the service water impoundment exceeded 93.8 degrees Fahrenheit by 3.0 and 0.6 degrees Fahrenheit, respectively. The licensee evaluated this temperature rise and concluded that the small change in vapor pressure corresponding to the increased temperature would result in a small water hammer but that the service water system remained functional. The licensee informed their conclusions from operational experience involving a water

hammer event in 1986 that bounded the column separation that could have been experienced due to the inadequate operability evaluations.

As corrective actions, the licensee incorporated the new temperature limits for the service water system impoundment into system operating procedures. The licensee entered this issue into the corrective action program as Condition Report CR-2015-008334.

Analysis. The failure to properly assess and document the basis for operability when a degraded or nonconforming condition was identified was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, service water vacuum breakers failing to open resulted in a condition where structures, systems, and components necessary to mitigate the effects of a column separation event may not have functioned as required. Using Inspection Manual Chapter (IMC) 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, inspectors determined that this finding was of very low safety significance (Green) because the finding (1) was not a deficiency affecting the design and qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality, (2) did not represent a loss of system and/or function, (3) did not represent an actual loss of function of at least a single train for longer than its allowed outage time, or two separate safety systems out-of-service for longer than their technical specification allowed outage time, and (4) does not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significant for greater than 24 hours in accordance with the licensee's maintenance rule program. The inspectors determined that this finding does not have a cross-cutting aspect because the most significant contributor of this finding occurred more than three years ago, and is not indicative of current licensee performance.

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be accomplished in accordance with documented instructions, procedures, or drawings, of a type appropriate to the circumstances. Licensee Procedure STI-422.01, "Operability Determination and Functionality Assessment Program," Revisions 3, an Appendix B quality related procedure, provides instructions for evaluating the operability of safety-related components. Procedure STI-422.01 step 6.1, requires, in part, that when a potential degraded or nonconforming condition is identified, the shift manager should ensure the operability determination process is initiated to determine the operability of the structure, system or component. Contrary to the above, on seven occasions between September 2010 and November 2015, the shift manager failed to determine the operability of the structure, system or component. Specifically, the licensee failed to determine the operability of the service water system following identification of a degraded condition involving failed surveillances of return header vacuum breakers. This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy. The violation was entered into the licensee's corrective action program as Condition Report CR-2015-008334. (NCV 05000445/2016001-01; 05000446/2016001-01, Failure to Adequately Evaluate Operability for a Degraded Condition)

4OA3 Follow-up of Events and Notices of Enforcement Discretion (71153)

These activities constituted completion of two event and notice of enforcement discretion samples, as defined in Inspection Procedure 71153.

.1 (Closed) Licensee Event Report 05000446/2015-001-00, Unit 2 Train B Safety Injection System Inoperable For Longer Than Allowed By TS

a. Inspection Scope

On July 10, 2015, Comanche Peak Nuclear Power Plant, Unit 2, exceeded a 72-hour limiting condition for operation (LCO), after being granted a period of enforcement discretion. The need for enforcement discretion was due to a through-wall leak found on the "B" train of the Safety Injection (SI) system piping at the 3/4" socket weld coupling to valve 2SI-0055. After discovering the flaw on July 7, 2015, the licensee declared the "B" train of SI inoperable and entered Technical Specification 3.5.2, "ECCS - Operating" Condition B, which required restoration of the train within 72 hours. The licensee repaired the socket weld and restored the system to service within the time allowed by the enforcement discretion. This event was reportable under 10 CFR 50.73(a)(2)(i)(B) as an operation or condition which was prohibited by the plant's Technical Specifications. The licensee concluded that the most probable cause of the through-wall leak was an original weld defect, which resulted in a stress concentration that allowed otherwise acceptable tensile loads to cause propagation of a through-wall crack.

The inspectors reviewed the licensee's evaluation and corrective actions. The inspectors determined that the failure of the socket weld was not within the licensee's ability to foresee and correct, and therefore was not a performance deficiency. As a result, the inspectors concluded there was no violation associated with the condition. The inspectors also determined that the licensee took appropriate corrective actions to correct the defect.

b. Findings

No findings were identified.

.2 (Closed) Unresolved Item 05000446/2015003-03, Notice of Enforcement Discretion 15-4-02 for One Inoperable Train of Emergency Core Cooling Systems

a. Inspection Scope

The inspectors performed a review of the circumstances associated with the granting of Notice of Enforcement Discretion 15-4-02 for Luminant Generation Company, LLC by the NRC staff at 9:20 a.m. on July 10, 2015. The notice of enforcement discretion granted an additional 25 hours to restore compliance with Technical Specification 3.5.2, "ECCS - Operating." The inspectors verified the licensee's oral assertions, including the likely cause and compensatory measures, and verified the notice of enforcement discretion request was consistent with the staff's policy and guidance. The licensee documented the issue in Licensee Event Report 05000446/2015-001-00, which the inspectors closed in Section 4OA3.1 of this report.

The inspectors reviewed the sequence of events and the licensee's cause evaluation. Upon discovery of the leak, the licensee attempted to repair the leak using an approved methodology for weld repair, ASME Code Case N-666. The repair failed when the licensee created a hole in the pipe while welding. The licensee then drained the pipe, and performed a replacement of the pipe section and socket weld. The licensee requested enforcement discretion due to their inability to perform the replacement within the time remaining. The inspectors reviewed the cause of the failure of the licensee's attempt to repair the leak using ASME Code Case N-666. The inspectors determined that the failure to successfully perform the weld repair was due to the difficulty of the weld and not within the licensee's ability to foresee and correct.

However, the inspectors did identify two minor NRC violations associated with the closure of the unresolved item.

- The inspectors identified a minor violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," for the licensee's failure to follow work instructions for the weld repair on July 7, 2015. Specifically, licensee staff did not complete Step 12 of Work Order 5086991, which required a VT-1 visual inspection of the weld. The inspectors determined this violation was minor because this did not cause the failure or adversely affect a cornerstone objective. The licensee entered this violation into the corrective action program as condition reports CR-2016-002247 and CR-2016-002427.
- The inspectors also identified a minor violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," for the licensee's failure to follow procedure NQA 3.09, "Inspection Examination Program," Step 6.1.2. Specifically, the licensee quality control inspector provided instruction to the welder on how to complete the work, thus losing his independence. The inspectors determined this violation was minor because this did not cause the failure or adversely affect a cornerstone objective. The licensee entered this violation into the corrective action program as CR-2016-002412.

These failures to comply with 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," constitute minor violations that are not subject to enforcement action in accordance with the NRC's Enforcement Policy.

b. Findings

No findings were identified.

4OA5 Other Activities

a. Inspection Scope

The inspectors evaluated the impact of financial conditions on continued safe performance at Comanche Peak. In that the licensee's parent company, Energy Future Holdings, was under bankruptcy protection/reorganization during the inspection period, NRC Region IV conducted special reviews of processes at Comanche Peak. The inspectors evaluated several aspects of the licensee's operations to determine whether the financial condition of the station impacted plant safety. The factors reviewed included: (1) impact on staffing, (2) corrective maintenance backlog, (3) changes to the

planned maintenance schedule, (4) corrective action program implementation, and (5) reduction in outage scope, including risk-significant modifications. In particular, the inspectors verified that licensee personnel continued to identify problems at an appropriate threshold and enter these problems into the corrective action program for resolution. The inspectors also verified that the licensee continued to develop and implement corrective actions commensurate with the significance of the problems identified.

The special review of processes at Comanche Peak included continuous reviews by the Resident Inspectors, as well as the specialist-led baseline inspections completed during the inspection period which are documented previously in this report.

b. Findings

No findings were identified.

40A6 Meetings, Including Exit

Exit Meeting Summary

On January 25, 2016, the inspectors telephonically exited with Mr. G. Struble, Operations/Simulator Training Manager, regarding the review of the licensed operator annual operating test results. The inspectors did not review any proprietary information during this inspection.

On February 11, 2016, the inspectors presented the radiation safety inspection results to Mr. T. Hope, Manager, Regulatory Affairs, and other members of the licensee staff. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

On February 25, 2016, the inspectors presented the results of the onsite inspection of the emergency preparedness program to Mr. K. Peters, Senior Vice President and Chief Nuclear Officer, and other members of the licensee staff. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

On March 24, 2016, the resident inspectors presented the inspection results to Mr. T. McCool, Site Vice President, and other members of the licensee staff. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

40A7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meet the criteria of the NRC Enforcement Policy for being dispositioned as a non-cited violation.

- Title 10 CFR 50.54(q)(2) requires, in part, that licensees shall follow and maintain the effectiveness of an emergency plan that meets the planning standards of 10 CFR 50.47(b). Title 10 CFR 50.47(b)(4) requires, in part, that a standard emergency classification and action level scheme is in use by the licensee. The licensee's

emergency plan provides for the ability to classify an unusual event due to failed fuel indications based on an alarm from the failed fuel radiation monitor. Contrary to the above, on February 4, 2016, the licensee took the Unit 1 Failed Fuel Monitor (FFM) out of service for planned maintenance without a viable compensatory measure in place. Sampling and local surveys were referenced, but they were not adequate to provide the ability to provide for timely EAL classifications that normally rely on use of the Unit 1 FFM (Emergency Action Level [EAL] SU 7.2). Section 7.0 of the Comanche Peak Emergency Plan says that "if core damage is suspected, appropriate procedures may be used to estimate the extent of damage." This situation did not allow for implementation of core damage assessment in a manner to effectively use the EAL scheme as required by 10 CFR 50.47(b)(4). The violation is more than minor because it affected the facilities and equipment attribute of the Emergency Preparedness cornerstone and impacted the cornerstone objective to ensure that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Using Inspection Manual Chapter 0609, Appendix B, "Emergency Preparedness Significance Determination Process," the inspector determined that the violation is of very low safety significance (Green) because the finding represented a failure to comply with planning standard (b)(4), and, using table 5.4-1, was screened as a Green finding because an emergency action level initiating condition was rendered ineffective such that an Unusual Event would not be declared for failed fuel, but no Site Area Emergency or General Emergency initiating conditions were affected. The violation was entered into the licensee's corrective action program as CR-2016-001082.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

G. Struble, Operations/Simulator Training Manager
J. Alldredge, Technician, Radiation Protection
T. Curtis, Lead Environmental Technician
S. Darter, Coordinator, Radiation Protection
S. Dixon, Consulting Licensing Analyst/Regulatory Affairs
T. Emery, REMP Environmental Technician
T. Hope, Manager, Regulatory Affairs
B. Knapp, Acting Manager, Radiation Protection
M. Macho, Supervisor, Radiation Protection
S. Peterson, Senior Calibration Laboratory Technician, Radiation Protection
K. Powell, Supervisor, Radiation Protection
M. Syed, Engineer, Systems Engineer
M. Watkins, Lead Technician, Instruments and Controls Maintenance
J. Barnette, Consultant, Licensing Technologist
S. Bartholomew, Emergency Preparedness Analyst
G. Bryan, Emergency Preparedness Operations Specialist
K. Faver, Emergency Preparedness Planner
R. Fishencord, Emergency Preparedness Planner
J. Hull, Manager, Emergency Preparedness
R. Marquez, Emergency Preparedness Planner
S. Sewell, Director, Organization Effectiveness
D. Volkening, Manager, Nuclear Oversight
T. McCool, Site Vice President

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000445, 05000446/2016001- 01	NCV	Failure to Adequately Evaluate Operability for a Degraded Condition (Section 4OA2)
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Closed

05000445, 05000446/2015008- 05	URI	Failure to Perform Adequate Operability Assessments associated with Failures of Service Water System Vacuum Breaker during Surveillance Tests (Section 4OA2)
05000446/2015- 001-00	LER	Licensee Event Report 05000446/2015-001-00, Unit 2 Train B Safety Injection System Inoperable for Longer Than Allowed by TS (Section 4OA3)
05000446/2015003- 03	URI	Notice of Enforcement Discretion 15-4-02 for One Inoperable Train of Emergency Core Cooling Systems (Section 4OA3)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u>
AI-0413	Room/Area Designations – Unit 1 and 2 Plans at Elev. 778'-0" and 790'-6"	CP-4
2323-S-1102	Circulating Water Intake Structure Sects. & Dets-Sh. 1	6
2323-S-1103	Circulating Water Intake Structure Sects. & Dets-Sh. 2	5
2323-S-1106	Circulating Water Discharge Structure Sheet 1	3
2323-S-1115	Circulating Water Discharge Structure Sheet 2	3
M1-1990, Sheet No. 06A	Fire Suppression Systems, Service Water Intake Structure, FA 103 Diesel Fire Pump Room System 334.791-5001	CP-3

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
ABN-907	Acts of Nature	15
ODA-308	LCO Tracking Program	15
ODA-308-13.7.34-S01	Supplemental Information for eLCO Standard LCOAR 13.7.34, Flood Protection	1
ECE-5.01	Design Control Program	26
ECE-5.08	Design Change Process	2

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision / Date</u>
DBD-CS-071	Probable Maximum Flood (PMF)	12
FDA-2012-000082-01-00	Install a Fish Barrier System at the SWIS/SSI Location	May 25, 2012
Work Order 4876642	CR-2014-007204 2CW-0160 and 2CW-0163 Will Not Latch Closed	October 29, 2015
DBD-CS-096	Safe Shutdown Impoundment/Dam	12
Work Order 5238146	CR-2016-002238 Repair Roof Leak Above 2-02 SSWP	April 4, 2016

Condition Reports (CR-)

2011-004062 2015-001281 2016-002238 2016-002244 2016-002284
 2016-002880

Section 1R04: Equipment AlignmentDrawings

<u>Number</u>	<u>Title</u>	<u>Revision / Date</u>
A1-0413 Sht. 01	Room/Area Designations – Unit 1 and 2 Plans at Elevation 778'-0" and 790'-6"	CP-4
A1-0413 Sht. 02	Room/Area Designations – Unit 1 and 2 Plans at Elevation 803'-0" and 810'-6"	CP-8
A1-0413 Sht. 05	Room/Area Designations – Unit 1 and 2 Plans at Elevation 873'-0"	CP-2
A1-0511	Primary Plant Auxiliary Building Part Plans at Elevation 842'-0" and 873'-6"	CP-3
2323-A1-0507	Primary Plant Auxiliary and Electrical Control Building Floor Plans at Elevation 778'-0" and 790'-6"	CP-1
2323-A1-0508	Primary Plant Auxiliary and Electrical Control Building Floor Plans at Elevation 807'-0" and 810'-6"	CP-1
M1-0229	Flow Diagram Component Cooling Water System Sheet 1 of 8	CP-23
M1-0229 Sht. A	Flow Diagram Component Cooling Water System	CP-21
M1-0229 Sht. B	Flow Diagram Component Cooling Water System	CP-25
M1-0230	Flow Diagram Component Cooling Water System	CP-26
M1-0230 Sht. A	Flow Diagram Component Cooling Water System	CP-22
M1-0230 Sht. B	Flow Diagram Component Cooling Water System Sheet 6 of 8	CP-23
M1-0230 Sht. C	Flow Diagram Component Cooling Water System	CP-8
M1-0231	Flow Diagram Component Cooling Water System	CP-24
M1-0231 Sht. A	Flow Diagram Component Cooling Water System	CP-14
E2-0067 Sht. 99B	Unit 2 Diesel Generator 2EG2 Governor Schematic	CP-10

Miscellaneous Document

<u>Number</u>	<u>Title</u>	<u>Revision / Date</u>
Work Order 5193865	Spent Fuel Pool Cooling Water Pump X-01 – Mech/Elec Quarterly Oil Sample	February 29, 2016

Condition Reports (CR-)

2016-002028

Section 1R05: Fire Protection

Drawings

<u>Number</u>	<u>Title</u>	<u>Revision / Date</u>
FPR-1	Comanche Peak Fire Protection Report, Containment/Safeguards Building Unit 1, Plans at El. 773'- 0" and 790'-6"	2
FPR-2	Comanche Peak Fire Protection Report, Containment/Safeguards Building Unit 1, Plans at El. 808'- 0" and 810'-6"	2
FPR-7	Comanche Peak Fire Protection Report, Auxiliary/Electrical Control Building Common, Plans at El. 778'-0" and 790'-6"	3

Miscellaneous Document

<u>Number</u>	<u>Title</u>	<u>Revision</u>
CPNPP/FPR	Comanche Peak Nuclear Power Plant, Unit 1 and 2, Fire Protection Report	29

Condition Reports (CR-)

CR-2016-002654

Section 1R06: Flood Protection Measures

Engineering Calculations

<u>Number</u>	<u>Title</u>	<u>Revision</u>
2-NU-0058	Unit 2 Diesel Generator Building – Flooding Analysis	1
CPE-SI-CA- 0000-641	Diesel Generator Building Flooding Analysis	2

Miscellaneous Document

<u>Number</u>	<u>Title</u>	<u>Revision</u>
NUREG-0797	Safety Evaluation Report Related to the Operation of Comanche Peak Steam and Electric Station, Units 1 and 2, Supplements 17 and 24, Generator Building - Flooding Analysis	1

Section 1R11: Licensed Operator Requalification Program and Licensed Operator Performance

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
	Operating Test Results	January 4, 2016
LO44.BBS.025	SGTR with LOCA – Simulator Exercise Guide	January 5, 2016

Section 1R12: Maintenance Effectiveness

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
STA-702	Surveillance Program	21

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
STA-629	Switchyard Control and Transmission Grid Interface	7

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
Work Order 4655163	Replace Elastomers and Instruments	March 24, 2016
EV-BIF-2015-000079-8	Use of MELB Protection Compensatory Measures for Barrier Impairment Evaluation for Unit 2 Train B UPS Room X-118 Surveillances and Preventative Maintenance	September 17, 2015

Condition Reports (CR-)

2016-001030 2016-002049 2016-001426

Section 1R15: Operability Determinations and Functionality Assessments

Drawings

<u>Number</u>	<u>Title</u>	<u>Revision / Date</u>
E2-0067 Sht. 99B	Unit 2 Diesel Generator 2EG2 Governor Schematic	CP-10
PG G132	Siemens AG Thyripart Excitation with DC Chopper	October 2002

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
STI-433.02	Emergency Response Facility Functionality Evaluation	1

Miscellaneous Document

<u>Number</u>	<u>Title</u>	<u>Revision / Date</u>
FDA-2016- 000025-01-01	Drill a Hole in the Stuffing Box Area of Valve 2RC-8054A	March 7, 2016
85177	Woodward Governor Company 701 Digital Speed Control for Reciprocating Engines Installation and Operation Manual	D
82510L	Woodward Governor Company Magnetic Pickups and Proximity Switches for Electric Governors	L
Work Order 5233746	CR-2016-001941 Repair Amphenol Connector	March 7, 2016

Condition Reports (CR-)

2007-000982	2008-003494	2011-005004	2016-000477	2016-000898
2016-001706	2016-002006	2016-002139	2016-002507	CR-2016-002009

Section 1R18: Plant Modifications

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
STI-422.01	Operability Determination and Functionality Assessment	3

Miscellaneous Document

<u>Number</u>	<u>Title</u>	<u>Date</u>
FDA-2014-000004-01-02	Relocation of 2-Inch Diameter Vacuum Breaker Valves in Unit 1 SSW System	April 15, 2015
FDA-2016-000025-01-01	Drill a Hole in the Stuffing Box Area of Valve 2RC-8054A	March 7, 2016

Condition Reports (CR-)

2015-008334

Section 1R19: Post-Maintenance TestingProcedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
TRP-3004	Engineering Repair Procedure Manual – Leak Repair, Valve Packing/1/8" NPT Drill and Tap	3
INC-7653B	Channel Operational Test and Channel Calibration, Pressurizer Level Protection Set I, Channel 0459	3
INC-7826B	Channel Calibration, Pressurizer Level, Channel 0459F	2
OPT-204B	SI System	12
SOP-201B	Safety Injection System	9
NDE 4.02-2	ASME Section XI Visual Examination VT-2	9

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision / Date</u>
Work Order 5236071	CR-16-1706 Install Tubing for Temp Mod TM 5232164	March 6, 2016
Work Order 5232183	CR-2016-001706 Team Leak Per TM 5232164 and FDA-2016-000025-01	March 7, 2016
FDA-2016-000025-01-02	Drill Hole in Stuffing Box Area of 2RC-8054A	March 7, 2016
EV-CR-2016-001706-8	50.59 Evaluation, FDA-2016-000025-01 Team Leak Temporary Modification of 2RC-8054A	1
Work Order 5204795	Safety Injection Pump 2-01	March 21, 2016
Work Order 5225525	CR-2016-001383, 1-PV-2327 Failed to Open Fully	February 29, 2016

Section 1R22: Surveillance Testing

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
OPT-506B	Feedwater Valve Testing	9
OPT-513A	SI Pump Performance and Flow Balancing	1
OPT-303A	RCS Water Inventory	14
IST-305	Air Operated Valve Program Document	6

Condition Reports (CR-)

2016-000840 2016-001346

Section 1EP2: Alert and Notification System Testing

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
Staff Guideline 012	Alert and Notification System Surveillance	22
Design Report	Comanche Peak Nuclear Power Plant Alert and Notification System	2

Section 1EP3: Emergency Response Organization Staffing and Augmentation System

Documents

<u>Number</u>	<u>Title</u>	<u>Revision / Date</u>
Staff Guideline 005	Quarterly Augmentation Verification of the Emergency Response Organization	13
CP-201600027	NEI 12-01 Phase 2 Staffing Assessment	1
2 nd Quarter	Quarterly Augmentation Verification Results	June 25, 2014
3 rd Quarter	Quarterly Augmentation Verification Results	September 25, 2014
4 th Quarter	Quarterly Augmentation Verification Results	December 15, 2014
1 st Quarter	Quarterly Augmentation Verification Results	March 20, 2015
2 nd Quarter	Quarterly Augmentation Verification Results	June 15, 2015
3 rd Quarter	Quarterly Augmentation Verification Results	July 17, 2015
4 th Quarter	Quarterly Augmentation Verification Results	December 16, 2015

Section 1EP5: Maintenance of Emergency Preparedness

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EPP-100	Maintaining Emergency Preparedness	11
EPP-109	Duties and Responsibilities of the Emergency Coordinator/Recovery Manager	15
EPP-123	10 CFR50.54(q) Screening and Evaluation of Changes to Emergency Plan Documentation	1
STA-421	Initiation of Condition Reports	20
STA-422	Processing Condition Reports	33
STA-433	Equipment Important to Emergency Preparedness	1
STI-433.01	Maintaining Equipment Important to Emergency Preparedness	1
STI-433.02	Emergency Response Facility Functionality Evaluation	1

Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
CP-201401458	2014 Annual Review of CPNPP Evacuation Time Estimate	December 18, 2014
CP-201501145	2015 Annual Review of CPNPP Evacuation Time Estimate	December 17, 2015
CR-2014-000550	10 CFR50.54(q) Screenings and evaluations for 2014	January 16, 2014
CR-2014-012161	10 CFR50.54(q) Screenings and evaluations for 2014	October 30, 2014
CR-2015-000362	10 CFR50.54(q) Screenings and evaluations for 2015	January 13, 2015
CR-2016-000283	10 CFR50.54(q) Screenings and evaluations for 2016	January 11, 2016
CR-2015-003938	CPNPP Emergency Planning Self-Assessment Report	May 29, 2015
EVAL-2014-001	CPNPP Nuclear Oversight Evaluation Report – Emergency Preparedness	May 21, 2014
EVAL-2015-001	CPNPP Nuclear Oversight Evaluation Report – Emergency Preparedness	May 15, 2015
EPBN 2015-33	Comp Action for Seismic Monitor	December 7, 2015
EPBN 2016-05	Comp Action for Failed Fuel Monitors	February 16, 2016
EPBN 2016-06	Comp Measures for Main Steam Line Monitors	February 17, 2016

Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
EP37PA1XY1	Health Physics Drill Semi Annual	August 5, 2015
EP37PA1XY1	Health Physics Drill Semi Annual	December 16, 2015
EP37PA1XY1	Health Physics Drill Semi Annual	August 6, 2014
EP37PA1XY1	Health Physics Drill Semi Annual	December 22, 2015
EP37ORSRJ1	Offsite Radiological Drill Report	July 28, 2015
EP37ORSRJ1	Offsite Radiological Drill Report	July 24, 2014
Event Report	Unusual Event of June 11, 2014	February 15, 2016
Drill Report	Gold Team Exercise on December 16, 2015	January 25, 2016
Drill Report	Red Team Exercise on September 24, 2015	December 28, 2015
Drill Report	Green Team Exercise on August 5, 2015	December 28, 2015
Drill Report	Blue Team Graded Exercise on June 10, 2015	September 16, 2015
Drill Report	Blue Team Exercise on May 1, 2015	December 30, 2015
Drill Report	Red Team Exercise on September 20, 2014	December 18, 2014
Drill Report	Gold Team Exercise on August 6, 2014	November 2, 2014
2014 Monthly	Communications Drill Summary	2014
2015 Monthly	Communications Drill Summary	2015

Condition Reports (CR-)

2014-001279	2014-002909	2014-004875	2014-004979	2014-004996
2014-005874	2014-007051	2014-007543	2014-007596	2014-008625
2014-008991	2014-011955	2015-002155	2015-002790	2015-003129
2015-003242	2015-005496	2015-005680	2015-006456	2015-007414
2015-008046	2015-011998	2015-012047	2016-000084	2016-000091
2016-000285	2016-001303	2016-001791	2016-001814	

Section 2RS5: Radiation Monitoring Instrumentation

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
ICI-4959	Channel Calibration - High Range Area Radiation Monitors	3
ICI-4998	Channel Calibration - Gas Process Radiation Monitor	4

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
ICI-7079	Channel Calibration - Containment High Range Radiation Monitor Channels (1-RE-6290A/B AND 2-RE-6290A/B)	6
ICI-7096	Channel Operational Test and Channel Calibration - Containment Particulate, Iodine, and Gas	5
INC-2098	Calibration of DRMS High Range Area Monitor Detectors (RD-2A)	2
INC-4914 A	Channel Calibration - Main Steam Line Radiation Monitor	4
INC-4990	Channel Calibration - Component Cooling Water Liquid Process Radiation Monitors	5
INC-4990	Calibration of Pneumatic Mass Flowmeters	3
RPI-508	Calibration of the Stand-Up Whole Body Counter	14
RPI-800	Control of Radiation Protection Equipment	14
RPI-802	Performance of Source Checks	22
RPI-881	Calibration of Portable Dose Rate Instruments	21
RPI-882	Calibration of Portable Count Rate Instruments	10
RPI-888	Calibration of Portable Air Sample Equipment	4
STA-608	Control of Measurement and Test Equipment	22
STA-619	Administrative Control of the Digital Radiation Monitoring System	7
STA-650	General Health Physics Plan	7
STA-658	Radiation Protection Equipment Calibration Program	12

Condition Reports (CR-)

2011-006222	2014-005312	2015-001671	2015-001726	2015-002764
2015-003204	2015-003419	2015-005489	2015-007380	2015-008387
2015-010956	2015-011717	2015-012298		

Audits and Self-Assessments

<u>Number</u>	<u>Title</u>	<u>Date</u>
EVAL-2015-002	Radiological Protection Measurements	June 2015

Installed Radiation Instrument Calibration Records

<u>W/O or Number</u>	<u>Title</u>	<u>Date</u>
2-RE-6255	INC-2098 "Calibration of DRMS High Range Area Monitor Detectors (RD-2A)", Attachment 2 "Channel Calibration Data Package"	October 15, 1991
3443188	Fuel Building Ventilation Exhaust Radiation Detector (X-RE-5700)	June 24, 2009
3526077	Main Steam Line Radiation Monitor (2-RE-2325)	December 7, 2009
4214992	Unit 1 Component Cooling Water Train B SFGD Loop (1-RE-4511)	February 7, 2013
4426655	Fuel Building Ventilation Exhaust Radiation Detector (X-RE-5700)	January 22, 2015
4503917	Unit 2 Containment EI 905 East Wall HRAM Radiation Monitor (2-RE-6290B)	April 14, 2014
4536113	Main Steam Line Radiation Monitor (2-RE-2325)	March 17, 2015
4579540	Unit 1 Component Cooling Water Train B SFGD Loop (1-RE-4511)	November 16, 2014
4832178	Unit 2 Containment EI 905 East Wall HRAM Radiation Monitor (2-RE-6290B)	November 3, 2015
VDRT-3763686	1-RE-5502 Transfer Calibration Report for RD-56 Detector System	July 1, 2009
VL-05-001627	WRGM Mid/High Range Cad/Tel Detector – RD72	March 6, 1990
RD-72-768-8	CP WRGM RD-72 SN 768-8 Transfer Source Calibration Report	June 24, 2005
0360-9916	CP RD-56 SN 001 Transfer Source Calibration Report	August 12, 2009
4700875	North Vent Stack Wide Range Gas Monitor 5570B Operability Test	January 28, 2015
4306568	North Vent Stack Wide Range Gas Monitor 5570B Operability Test	July 9, 2013
4637135	South Vent Stack Wide Range Gas Monitor 5570A Operability Test	December 16, 2014
4225901	South Vent Stack Wide Range Gas Monitor 5570A Operability Test	February 13, 2013

Portable Radiation Instrument Calibration Records

<u>Number</u>	<u>Title</u>	<u>Date</u>
3126	RadEye G	August 4, 2015

Portable Radiation Instrument Calibration Records

<u>Number</u>	<u>Title</u>	<u>Date</u>
3263	TelePole	February 4, 2015
4081	RO-20AA	August 24, 2015
HP 1620	Eberline ASP-1/NRD (Remball)	May 12, 2015
HP 2213	REM 500	March 13, 2015
HP 2407	Model 177	September 25, 2015

Stationary Radiation Instrument Calibration Records

<u>Number</u>	<u>Title</u>	<u>Date</u>
FSCAN	FastScan 2	December 8, 2015
ASCAN	AcuScan	December 22, 2015
0056	SAM 11	November 24, 2015
0064	PM-7	November 25, 2015
0065	ARGOS	December 2, 2015
0075	GEM 5	February 25, 2015
1767	Model 3090-3 Area Monitor	May 19, 2015
2153	AMS-4 Continuous Air Monitor	September 17, 2015
3270	Model 3030E	May 13, 2015

Air Sampler and Flowmeter Calibrations

<u>Number</u>	<u>Title</u>	<u>Date</u>
TU4035	Brooks 0154E Mass Flowmeter	March 16, 2015
2178	Low Volume Air Sampler	September 2, 2015
2179A	Low Volume Air Sampler	September 2, 2015
2187A	Low Volume Air Sampler	September 2, 2015
2192	Low Volume Air Sampler	September 2, 2015
2194B	Low Volume Air Sampler	September 2, 2015
2196B	Low Volume Air Sampler	September 2, 2015

Miscellaneous Documents

<u>Title</u>	<u>Revision/Date</u>
4 th Quarter Radiation Monitoring System Status	2015

Miscellaneous Documents

<u>Title</u>	<u>Revision/Date</u>
Offsite Dose Calculation Manual	32

Section 2RS6: Radioactive Gaseous and Liquid Effluent Treatment

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
CHM-104	Quality Assurance and Quality Control	22
CHM-112	Control of Contamination from Non-Radioactive Systems	6
CHM-170	Liquid and Gaseous Effluent Program	4
CHM-230	Guidelines for Sample Collection	3
CHM-513A	Operation of the Unit 1 Process Sampling System	7
CHM-513B	Operation of the Unit 2 Process Sampling System	3
CHM-516	Sampling and Analysis of Gaseous Waste Systems	9
CHM-517	Chemistry Control of Liquid Waste Systems	9
CHM-708	ODCM Surveillance of Low Volume Waste Pond	6
CLI-705	Determination of Tritium	9
CLI-710	Operation of 2500 TR LSC	4
CLI-712	Operation 3180 TR SL LSC	0
CLI-733	Determination Gross Alpha and Beta Activity	6
CLI-738	Operation Calibration of Solo Alpha Beta Gas Flow Proportional Counter	3
CLI-741	Setpoint Modification and DRMS Pre-Release Surveillance	7
CLI-744	Radioactive Effluent Pre-Release Permit Processing	1
CLI-745	Radioactive Effluent Post-Release Permit Processing and Surveillance Tracking	3
CLI-766	Gamma Analysis of Solids	2
CLI-768	Calculation Dose Equivalent I-131	5
CLI-769	Gamma Analysis Charcoal and Particulates	3
CLI-770	Gamma Analysis of Water	4

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
CLI-771	Gamma Analysis of Gas	3
CLI-774	WRGM Filter Replacement	7
CLI-777	Use of Gas Waste Sampling Equipment	6
CLI-779	Calculation of Dose Equivalent Xe-133	1
CLI-782	APEX Gamma Spec Calibration	2
COP-510	Waste Systems	8
COP-801A	Containment Ventilation	3
COP-801B	Containment Ventilation	3
COP-816	Plant Ventilation	6
RPI-714	Land Use Census	5
STA-116	Maintenance of CPNPP Licensing Basis Documents, Operating License Conditions and Technical Specifications	14
STA-521	Routine Reporting	21
STA-603	Control of Station Radioactive Effluents	21
STA-619	Administrative Control of the Digital Radiation Monitoring System	7
STA-654	Groundwater Protection Program	1

Condition Reports (CR-)

2016-001297	2015-007875	2015-007340	2015-007342	2015-007876
2016-001300	2015-005094	2015-001624	2015-011715	

Audits, Self-Assessments, and Surveillances

<u>Number</u>	<u>Title</u>	<u>Date</u>
EVAL-2015-007	Radwaste, Effluent, Environmental, and Chemistry Audit	September 29, 2015

Release Permits

G2015-148	G2015-170	G2015-173	L2014-052	L2015-034
L2015-040				

Sampling and Analysis Results

<u>Number</u>	<u>Title</u>
CHM 170-510-15	LVW Pond Quarterly Composite – 3Q 2015

In-Place Filter Testing Records

<u>System</u>	<u>Test</u>	<u>Date</u>
CPX-VAFUPK-01	Carbon Analysis PPT-SX-7511A	April 14, 2015
CPX-VAFUPK-01	Carbon Analysis PPT-SX-7511A	October 29, 2013
CPX-VAFUPK-01	Filter Test PPT-SX-7507A	April 14, 2015
CPX-VAFUPK-01	Filter Test PPT-SX-7507A	October 29, 2013
CPX-VAFUPK-02	Carbon Analysis PPT-SX-7512B	January 5, 2015
CPX-VAFUPK-02	Carbon Analysis PPT-SX-7512B	September 17, 2013
CPX-VAFUPK-02	Filter Test PPT-SX-7508B	December 10, 2015
CPX-VAFUPK-02	Filter Test PPT-SX-7508B	February 13, 2014
CPX-VAFUPK-15	Carbon Analysis PPT-SX-7511A	April 22, 2015
CPX-VAFUPK-15	Carbon Analysis PPT-SX-7511A	December 3, 2013
CPX-VAFUPK-15	Filter Test PPT-SX-7509A	April 15, 2015
CPX-VAFUPK-15	Filter Test PPT-SX-7509A	October 30, 2013
CPX-VAFUPK-16	Carbon Analysis PPT-SX-7512B	January 14, 2015
CPX-VAFUPK-16	Carbon Analysis PPT-SX-7512B	July 29, 2013
CPX-VAFUPK-16	Filter Test PPT-SX-7510B	June 11, 2015
CPX-VAFUPK-16	Filter Test PPT-SX-7510B	July 29, 2013

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision / Date</u>
Radman Waste No 368403001	Unit 1 Reactor Coolant Filter 10CFR61 Analysis	April 21, 2015
Radman Waste No 368403002	Unit 2 Reactor Coolant Filter 10CFR61 Analysis	April 21, 2015
Radman Waste No 351773001	Waste Stream Smear Composite (7)	August 7, 2014
	Comanche Peak Offsite Dose Calculation Manual – Unit 1 and Unit 2	33

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision / Date</u>
	Final Safety Analysis Report – Ch. 11: Radioactive Waste Management	105
	Final Safety Analysis Report – Ch. 9 Auxiliary Systems	105
	Results of Radiochemistry Cross Check Program – 4 th Quarter 2014	April 21, 2015
	CP Intra-laboratory Comparison Report (I-131 Charcoal)	December 8, 2015
	CP Intra-laboratory Comparison Report (Liquid Gamma)	December 8, 2015
	CP Intra-laboratory Comparison Report (Filter Gamma)	December 8, 2015
	CP Intra-laboratory Comparison Report (Gas Marinelli)	December 8, 2015
	2014 Land Use Census Verification Sheet	August 20, 2014
	2015 Land Use Census Verification Sheet	July 8, 2015
	Radiation Monitoring System Health Report – 4 th Quarter 2015	
RD-72-768-8	CP WRGM RD-72 SN 768-8 Transfer Source Calibration Report	June 24, 2005
0360-9916	CP RD-56 SN 001 Transfer Source Calibration Report	August 12, 2009
WO 4700875	North Vent Stack Wide Range Gas Monitor 5570B Operability Test	January 28, 2015
WO 4306568	North Vent Stack Wide Range Gas Monitor 5570B Operability Test	July 9, 2013
WO 4637135	South Vent Stack Wide Range Gas Monitor 5570A Operability Test	December 16, 2014
WO 4225901	South Vent Stack Wide Range Gas Monitor 5570A Operability Test	February 13, 2013
SMF-2007-000467-00	STA-170 Software Testing for Canberra Open EMS	February 21, 2007

Section 2RS7: Radiological Environmental Monitoring Program

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
ENV-317	Proper Handling Packaging & Shipping of Solid Waste Materials	6
ENV-323	Groundwater Sampling Program	5
STA-654	Groundwater Protection Program	9
RPI-521	General Area Monitoring Program	12
RPI-710	Radiological Environmental Monitoring, Sampling, and Analysis Program	20
RPI-713	Collection, Preparation, and Shipment of Radiological Environmental Samples	15
RPI-714	Land Use Census	5
STA714	Meteorological Monitoring Program	4

Condition Reports (CR-)

2015-001036 2016-001273 2016-007981 2016-001375 2015-0017

Audits, Self-Assessments

<u>Number</u>	<u>Title</u>	<u>Date</u>
EVAL-2015-007	Self-Assessment: Radioactive Waste, Effluent, and Environmental	September 29, 2015
GL-QS-B-001	Quality Assurance for GEL Laboratories LLC	March 29, 2015
NUPIC Audit 23724	GEL Laboratories	June 6, 2014

Miscellaneous Documents and Annual Reports

<u>Title</u>	<u>Revision / Date</u>
CPNPP Annual Meteorological Data Review	March 17, 2015
2015 Land Use Census	July 8, 2015
2014 Radiological Environmental Operating Report	April 15, 2015
2014 Annual Environmental Operating Report	January 20, 2015
Percentage of Good Control Room Meteorological Data from Jan. 1, 2013 to Dec. 11, 2014	December 11, 2014
CNPP Hydrogeology Report	August 21, 2013
Offsite Dose Calculation Manual – Units 1 & 2	32

Meteorological Tower Instrument Calibrations

<u>Order</u>	<u>Title</u>	<u>Date</u>
WO-4959967	Meteorological 60M Instrument Channel Calibrations	May 11, 2015
WO-4963051	Meteorological 10 M Wind Speed/Direction Calibrations	May 12, 2015

Environmental Laboratory Reports

<u>Order</u>	<u>Title</u>	<u>Date</u>
SDG386410	GEL Fish Gamma Report	January 14, 2016
SDG385318	GEL Food Product Report	January 14, 2016
SDG384830	GEL Air/Particulate Report	January 14, 2016
SDG382139	GEL Surface Water H-3 Report	January 14, 2016
SDG382130	GEL Broadleaf Sample Report	January 11, 2016
SDG382134	GEL Groundwater Report	January 11, 2016
CP20151083	Environmental TLD Results	January 11, 2016
TWDB 861506	Texas Commission of Environmental Quality Water Use Report	December 31,, 2014

Section 2RS8: Radioactive Solid Waste Processing, and Radioactive Material Handling, Storage, and Transportation

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
RPI-232	Characterizing Radioactive Material for Shipment	7
RPI-274	CPNPP Transportation Security Plan	3
RPI-264	Emergency Response for Radioactive Material-Waste Shipments	0
RPI-271	Interim Storage of Low Level Radioactive Waste	3
RPI-244	Loading, Shoring, and Bracing Radioactive Material-Waste Shipments	7
RPI-235	Marking and Labeling Radioactive Material Waste Packages for Shipment	8
RPI-234	Packaging Radioactive Material for Shipment	14
RPI-243	Packaging Radioactive Waste for Shipment	8
STA-713	Process Control Program	3
STA-652	Radioactive Material Control	18

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
RPI-239	Radioactive Material Shipment Documentation	12
STA-709	Radioactive Waste Management Program	10
RPI-260	Radwaste and Radioactive Material Container Accountability	10
RPI-215	Waste Stream Sampling	7

Audits, Self-Assessments

<u>Number</u>	<u>Title</u>	<u>Date</u>
EVAL-2015-007	Radwaste/Effluents/Environmental/Chemistry Audit	August 6 – September 16, 2015

Radiological Surveys

<u>Number</u>	<u>Title</u>	<u>Date</u>
16-02-0075	RP Cal Lab	February 4, 2016
16-02-0004	Interim Low Level Rad Waste Storage Area	February 4, 2016
16-02-0001	WHSE C Non-RCA Routine	February 4, 2016
16-01-0308	Warehouse C – Quarterly Comprehensive	January 18, 2016
16-02-0002	Warehouse C Yard	February 1, 2016
15-11-0500	Vault Storage Area	November 24, 2015
16-01-0176	RCA Yard Access and Storage Building	February 4, 2015

Radiological Material Shipments

<u>Number</u>	<u>Title</u>	<u>Date</u>
2015-003	UN2910, Radioactive Material, Limited Quantity - RCP Motor	March 11, 2015
2015-008	UN2911, Radioactive Material, Instruments – Portable Explosive Detector	May 18, 2015
2015-009	UN3321, Radioactive Material, LSA-II – Dry Active Waste	June 4, 2015
2015-012	UN2908, Radioactive Material – Empty Packaging	June 16, 2015
2015-015	UN2910, Radioactive Material, Limited Quantity – Chemistry Liquid Samples	July 8, 2015

Radiological Material Shipments

<u>Number</u>	<u>Title</u>	<u>Date</u>
2015-017	UN3321, Fissile-Excepted, Radioactive Material, LSA-II, RQ – Resin	July 30, 2015
2015-022	UN2910, Radioactive Material, Limited Quantity – Pressurizer Safety Valve	August 18, 2015
2015-025	UN2915, Radioactive Material, Type A Package, Radionuclides, Yellow II - RX Cavity Sample	October 16, 2015

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Date</u>
WMG Project 13-111E	Characterization and Classification of the Comanche Peak Unit 1 Old Reactor Vessel Closure Head	February 4, 2014
	DAW Waste Stream	June 30, 2014
	Unit 1 RCS Filters Waste Stream	February 24, 2015
	Unit 2 RCS Filters Waste Stream	February 24, 2015

Condition Reports (CR)

2015-2495	2015-2239	2015-1768	2015-5085	2015-6321
2015-7245	2015-7103	2015-7369	2015-7338	2015-7829
2015-8036	2015-8822	2015-9597		

Section 40A1: Performance Indicator Verification

Condition Reports (CR)

CR-2015-005204 CR-2015-008899

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
Staff Guideline 020	NRC Performance Indicators	19

Section 40A2: Problem Identification and Resolution

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
MSE-G0-0020	Relay Calibration	5

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
STI-422.01	Operability Determination and Functionality Assessment Program	3

Engineering Calculations

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EE-VP-Methodology	Class 1E AC Electrical Distribution Systems	3
EE-VP-U1-1E	Unit 1 Class 1E System Voltage Profile	3
EE-VP-U1-1E	Unit 1 Class 1E System Voltage Profile	4
EE-VP-U1-1E	Unit 1 Class 1E System Voltage Profile Attachment VIII ETAP Study Case LF-111A	3
EE-VP-U1-1E	Unit 1 Class 1E System Voltage Profile Attachment XXIV ETAP Study Case LF-124A	3

Drawings

<u>Number</u>	<u>Title</u>	<u>Revision / Date</u>
E1-2400 Sht. 493	Protective Device Settings Transformer Tap Settings	CP-2
E1-2400 Sht. 494	Protective Device Settings Transformer Tap Settings	CP-4
E1-2400 Sht. 495	Protective Device Settings Transformer Tap Settings	CP-1
E2-0067 Sht. 99B	Unit 2 Diesel Generator 2EG2 Governor Schematic	CP-10
PG G132	Siemens AG Thyripart Excitation with DC Chopper	October 2002

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
Work Order 4333962	Calibrate K300 Relay	October 18, 2012
Work Order 4500655	Calibrate K300 Relay	March 30, 2014
Work Order 4816671	Calibrate K300 Relay	October 17, 2015

Condition Reports (CR-)

2014-003431	2015-008148	2015-008334	2015-008949	2016-002165
2016-002173	2016-002476	2016-002531	2016-002686	2016-002706
2016-002710	2016-002754	2016-002776		

Section 40A3: Follow-up of Events and Notices of Enforcement DiscretionMiscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision / Date</u>
TXX 15107	Request for Enforcement Discretion Regarding Compliance with Technical Specification 3.5.2, "ECCS – Operating"	July 14, 2015
FDA-2015-000071-02	Rework ¾" socket weld, BRP-SI-2-SB-010, FW-21	00
CP-301	Welding Procedure Specification	10
WO 5086991	FDA-2015-000071-02, Rework ¾" socket weld, BRP-SI-2-SB-010, FW-21	July 8, 2015

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
STA-745	Nuclear Operation Welding Program	5
NQA 3.09	Inspection Examination Program	12
WLD-104	Hold Points, Inspections, and Records for Welding	9

Condition Reports (CR-)

CR-2015-006001	CR-2015-006015	CR-2016-002453	CR-2016-00276	CR-2016-002247
CR-2015-002412	CR-2015-011378	CR-2016002427		