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

August 13, 2015

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

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT – NRC INTEGRATED INSPECTION REPORT 05000445/2015002 and 05000446/2015002

Dear Mr. Flores:

On June 30, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Comanche Peak Nuclear Power Plant, Units 1 and 2. On June 25, 2015, the NRC inspectors discussed the results of this inspection with T. McCool, Vice President Engineering and Support, and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

NRC inspectors documented three findings of very low safety significance (Green) in this report. All of these findings involved violations of NRC requirements. Additionally, the NRC identified one traditional enforcement Severity Level IV violation with no associated finding.

Further, inspectors documented three licensee-identified violations which were 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..

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region IV; and the NRC resident inspector at the Comanche Peak Nuclear Power Plant, 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 R. Alexander for/

Thomas Hipschman, Acting Branch Chief
Projects Branch A
Division of Reactor Projects

Dockets Nos. 50-445 and 50-446
License Nos. NPF-87 and NPF-89
Enclosure: Inspection Report 05000445/2015002 and 05000446/2015002
w/Attachment: Supplemental Information

cc w/ encl: Electronic Distribution

R. Flores

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).

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Letter to Rafael Flores from Thomas Hipschman dated August 13, 2015

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT-NRC INTEGRATED INSPECTION REPORT 05000445/2015002 and 05000446/2015002

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	05000445, 05000446
License:	NFP-87, NFP-89
Report:	05000445/2015002 and 05000446/2015002
Licensee:	Luminant Generation Company LLC
Facility:	Comanche Peak Nuclear Power Plant, Units 1 and 2
Location:	6322 N. FM-56, Glen Rose, Texas
Dates:	April 1 through June 30, 2015
Inspectors:	J. Josey, Senior Resident Inspector R. Kumana, Resident Inspector M. Bloodgood, Operations Engineer J. Kirkland, Senior Operations Engineer T. Farina, Operations Engineer P. Elkmann, Senior Emergency Preparedness Inspector J. Larsen, Senior Physical Security Inspector G. Guerra, CHP, Emergency Preparedness Inspector C. Cowdrey, Operations Engineer M. Williams, Reactor Inspector E. Schrader, Emergency Preparedness Specialist
Approved By:	Thomas Hipschman Acting Chief, Project Branch A Division of Reactor Projects

SUMMARY

IR 05000445/2015002:05000446/2015002; 04/01/2015 – 06/30/2015; Comanche Peak NPP; Units 1 and 2; Integrated Inspection Report, Maintenance Risk Assessments, Exercise Evaluation, Problem Identification and Resolution

The inspection activities described in this report were performed between April 1, 2015, through June 30, 2015, by the resident inspectors at the Comanche Peak Nuclear Power Plant and inspectors from the NRC's Region IV and Headquarters offices. Three findings of very low safety significance (Green) are documented in this report. All of these findings involved a violation of NRC requirements. Further, the NRC identified one traditional enforcement Severity Level IV violation with no associated finding. Additionally, NRC inspectors documented three licensee-identified violations 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 a non-cited violation of 10 CFR 50.65(a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," for the licensee's failure to adequately assess risk and implement required risk management actions for a planned maintenance activity. Specifically, the licensee failed to evaluate the risk associated with the use of a non-seismically qualified crane when moving loads over an operable train of service water during installation of a temporary modification in 2014. This issue did not represent an immediate safety concern because, at the time of identification, the maintenance activity was no longer in progress. The licensee entered this issue into the corrective action program for resolution as Condition Report CR-2015-001203.

  The failure to adequately assess the risk and implement required risk management actions for proposed maintenance activities was a performance deficiency. This 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 associated objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," dated May 19, 2005, Flowchart 2, "Assessment of Risk Management Actions," the inspectors determined the need to calculate the risk deficit to determine the significance of this issue. Based on a review of the licensee's risk model it was determined that the incremental core damage probability associated with this finding was less than 1×10^{-6}; therefore, this finding is determined to have very low safety significance (Green). The finding has a human performance cross-cutting aspect associated with consistent processes because the licensee failed to use a consistent, systematic approach to evaluate risk for planned maintenance activities [H.13] (Section 1R13).

- Green. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," associated with the licensee's failure to ensure that design

changes were subject to design control measures commensurate with those applied to the original design and were approved by the designated responsible organization. Specifically, the licensee changed required embedment depths for safety-related concrete expansion anchors associated with manhole covers but failed to re-perform the design calculation to demonstrate that the new embedment depth was sufficient for tornado loading. The licensee performed an operability determination which established a reasonable expectation for operability pending final resolution of the issue. This issue was entered into the licensee's corrective action program as Condition Report CR-2015-003152.

The licensee's failure to ensure that changes to the facility were subject to design control measures commensurate with those applied to the original design, and were approved by the designated responsible organization was a performance deficiency. This 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 associated objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee changed required embedment depths for safety-related concrete expansion anchors associated with manhole covers but failed to re-perform the design calculation to demonstrate that the new embedment depth was sufficient for tornado loading. 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 does not reflect current licensee performance (Section 4OA2).

Cornerstone: Emergency Preparedness

- Green. The NRC identified two examples of licensee failures to correct deficiencies occurring during the June 10, 2015, emergency preparedness exercise as required by 10 CFR 50.47(b)(14). Specifically, the licensee failed to identify that a lack of radiological briefings for plant repair teams and a lack of habitability assessments in the Operations Support Center were deficiencies requiring corrective action. This issue was entered into the licensee's corrective action program as Condition Report CR 2015-005496.

  The failure to correct deficiencies occurring during an emergency preparedness exercise is a performance deficiency within the licensee's ability to foresee and correct. The performance deficiency is more than minor because the issue is associated with the emergency response organization readiness and performance cornerstone attributes (training) and adversely affected the cornerstone objective. The performance deficiency affects the cornerstone objective because the licensee cannot assure that adequate measures will be taken to protect the health and safety of the public when deficiencies are

not corrected. The finding was evaluated using Manual Chapter 0609, Appendix B, "Emergency Preparedness Significance Determination Process," dated September 23, 2014, and determined to be of very low safety significance (Green) because the performance deficiency was a failure to comply with NRC requirements and was not a degraded or lost planning standard function. The planning standard was not degraded or lost because the deficiency was not associated with a risk-significant planning standard function and the licensee identified other deficiencies that occurred during the June 10, 2014, exercise. The finding has been assigned a cross-cutting aspect of Identification in the Problem Identification and Resolution cross-cutting area because the licensee failed to identify issues completely and accurately [P.1]. (Section 1EP7)

Other Findings and Violations

- Severity Level IV. The inspectors identified a non-cited violation of 10 CFR 50.71(e), "Maintenance of Records, Making Reports," associated with the licensee's failure to update the Final Safety Analysis Report. Specifically, the licensee failed to update the Final Safety Analysis Report to include information detailing restrictions associated with shared system operations of the non-safeguards component cooling water loads between units. This issue does not represent an immediate safety concern because, at the time of identification, the component cooling water systems were not cross connected. The licensee entered this issue into the corrective action program for resolution as Condition Report CR-2014-007235.

  The licensee's failure to update the Final Safety Analysis Report to reflect restrictions associated with shared system operations of the non-safeguards component cooling water loads was a performance deficiency. Because this performance deficiency had the potential to impact the NRC's ability to perform its regulatory function, inspectors evaluated the performance deficiency using traditional enforcement. Using Inspection Manual Chapter 0612, "Power Reactor Inspection Reports," dated January 24, 2013, Appendix B, "Issue Screening," and Appendix E, "Examples of Minor Issues," the Reactor Oversight Program aspect of this performance deficiency was determined to be minor. Using the NRC Enforcement Policy, dated January 28, 2013, the performance deficiency was determined to be a Severity Level IV violation in accordance with Section 6.1.d.3, because the lack of up-to-date information in the Final Safety Analysis Report had not resulted in any unacceptable changes to the facility or procedures. Inspectors determined that cross-cutting was not applicable to this finding because it was strictly a traditional enforcement issue (Section 4OA2).

Licensee-Identified Violations

Violations of very low safety significance that were identified by the licensee have been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. These violations and 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 June 9, 2015 power was lowered to approximately 60 percent due to an issue with a main feedwater pump. On June 13, 2015, power was returned to approximately 100 percent and the unit operated there for the remainder of the inspection period.

Unit 2 began the inspection period at approximately 100 percent power and operated at that power level for the entire inspection period.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Readiness for Impending Adverse Weather Conditions

a. Inspection Scope

On May 8, 2015, the inspectors completed an inspection of the station's readiness for impending adverse weather conditions. The inspectors reviewed plant design features, the licensee's procedures to respond to tornadoes and high winds, and the licensee's implementation of these procedures. The inspectors evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant.

These activities constituted one sample of readiness for impending adverse weather conditions, as defined in Inspection Procedure 71111.01.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdown

a. Inspection Scope

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

- May 7, 2015, Unit 1, auxiliary feedwater system during maintenance activities on motor driven auxiliary feedwater pump 1-02
- May 13, 2015, Unit 2, containment spray system during maintenance on the spray additive tank

- May 27, 2015, Unit 1, diesel generator 1-01 and turbine driven auxiliary feedwater pump while diesel generator 1-02 was inoperable for maintenance

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 three partial system walk-down samples as defined in Inspection Procedure 71111.04.

b. Findings

No findings were identified.

.2 Complete Walkdown

a. Inspection Scope

On April 9, 2015, the inspectors performed a complete system walk-down inspection of the safe shutdown impoundment dam. The inspectors reviewed the licensee's procedures and system design information to determine the correct plant configuration. The inspectors also reviewed outstanding work orders, open condition reports, in-process design changes, temporary modifications, and other open items tracked by the licensee's operations and engineering departments. The inspectors then visually verified that the system was correctly aligned for the existing plant configuration.

These activities constituted one complete system walk-down sample, 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:

- May 28, 2015, Unit 1, train A inverter room
- May 28, 2015, Unit 2, train A inverter room
- June 24, 2015, Unit 1, train B emergency core cooling pump room
- June 24, 2015, Unit 2, train B emergency core cooling pump room

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 May 26, 2015, 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:

- Service water intake structure

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 constitute completion of one flood protection measures sample as defined in Inspection Procedure 71111.06.

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

On June 16, 2015, the inspectors completed an inspection of the readiness and availability of risk-significant heat exchangers. The inspectors reviewed the data from a performance test for the Unit 1, train A component cooling water heat exchanger. Additionally, the inspectors walked down the Unit 1, train A component cooling water heat exchanger to observe its performance and material condition, and verified that the Unit 1, train A component cooling water heat exchanger was correctly categorized under the Maintenance Rule and was receiving the required maintenance.

These activities constitute completion of one heat sink performance annual review sample, as defined in Inspection Procedure 71111.07.

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 June 23, 2015, the inspectors observed simulator training for 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 training activity.

These activities constitute 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 activity and risk. The inspectors observed the operators' performance of the following activities:

- June 8, 2015, Unit 1, observation of response to main turbine runback
- June 9, 2015, Unit 1, observation during A main feed pump testing

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

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

b. Findings

No findings were identified.

.3 Biennial Review of Requalification Program

a. Inspection Scope

The licensed operator requalification program involves two training cycles that are conducted over a 2-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.

To assess the performance effectiveness of the licensed operator requalification program, the inspectors conducted personnel interviews, reviewed both the operating tests and written examinations, and observed ongoing operating test activities.

The inspectors interviewed five licensee personnel, consisting of two operators and three instructors to determine their understanding of the policies and practices for administering requalification examinations. The inspectors also reviewed operator performance on the written exams and operating tests. The inspectors reviewed a total of ten job performance measures and seven scenarios. These reviews included observations of portions of the operating tests by the inspectors. The operating tests observed included six job performance measures and two scenarios that were used in the current biennial requalification cycle. These observations allowed the inspectors to assess the licensee's effectiveness in conducting the operating test to ensure operator mastery of the training program content. The inspectors also reviewed medical records of nine licensed operators for conformance to license conditions, and the licensee's system for tracking qualifications and records of license reactivation for ten operators.

The results of these examinations were reviewed to determine the effectiveness of the licensee's appraisal of operator performance and to determine if feedback of performance analyses into the requalification training program was being accomplished. The inspectors interviewed members of the training department and reviewed minutes of training review group meetings to assess the responsiveness of the licensed operator requalification program to incorporate the lessons learned from both plant and industry events. Examination results were also assessed to determine if they were consistent with the guidance contained in NUREG 1021, "Operator Licensing Examination Standards for Power Reactors", Revision 9, Supplement 1, and NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process."

In addition to the above, the inspectors reviewed examination security measures, simulator fidelity, and existing logs of simulator deficiencies.

The inspectors completed one inspection sample of the biennial licensed operator requalification program, as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

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

- May 20, 2015, Units 1 and 2, 2013 Maintenance Rule (a)(3) assessment and probabilistic risk assessment model updates.

- June 18, 2015, Unit 2, Station Service Water system

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 two maintenance effectiveness samples, as defined in Inspection Procedure 71111.12.

b. Findings

One licensee identified violation of very low safety significance (Green) is discussed in Section 4OA7 of this report.

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

a. Inspection Scope

The inspectors reviewed two 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:

- May 29, 2015, Units 1 and 2, auxiliary, safeguards and fuel handling building negative pressure test

- June, 16, 2015, Unit 1, component cooling water heat exchanger maintenance

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.

The inspectors also observed portions of two emergent work activities that had the potential to cause an initiating event, or to affect the functional capability of mitigating systems:

- April 28, 2015, Unit 1, Steam generator 1-03 feedwater flow control valve oscillations

- May 27, 2015, Unit 1, emergent work on diesel generator 1-02

The inspectors verified that the licensee appropriately developed and followed a work plan for these activities. The inspectors verified that the licensee took precautions to minimize the impact of the work activities on unaffected structures, systems, and components (SSCs).

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

b. Findings

Introduction. The inspectors identified a Green non-cited violation of 10 CFR 50.65(a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," for the licensee's failure to adequately assess risk and implement required risk management actions for a planned maintenance activity.

Description. While reviewing Work Order 4696447, which was being used to remove the temporary monorails and install the permanent monorails in the service water intake structure, inspectors noted that the non-seismically qualified hoist was to be used to lift the monorails. Inspectors also noted that there was no evaluation of or restrictions placed on the travel path for the equipment. Inspectors walked the area down and determined that with no restrictions placed on the travel path the lifts could place the monorails over operable safety-related equipment which could affect it operability.

Inspectors subsequently attended the pre-job brief for the planned work activity and noted that there was no discussion about restrictions for the load path or evaluations associated with the use of a non-seismically qualified hoist in the vicinity of operable safety related equipment. Following the pre-job brief, inspectors informed the licensee of their concern, and the licensee stopped the activity and initiated Condition Report CR-2015-001203. Because this activity had yet to commence inspectors determined that this issue was of minor significance.

Inspectors also reviewed Work Order 4475303, which had been used to install the temporary monorails in the service water intake structure in 2014. During their review, inspectors noted that this work order also directed the use of the non-seismically qualified hoist to lift the monorails, and there was also no evaluation of or restrictions placed on the travel path for the equipment.

Subsequently, the licensee evaluated this issue in Evaluation EV-CR-2015-001203-2 and determined that there were additional risk managements actions required for the activity. Based on this, the inspectors determined that when installing the temporary monorail the licensee had failed to adequately assess the risk and implement required risk management actions for the proposed activity.

Analysis. The failure to adequately assess the risk and implement required risk management actions for maintenance activities (i.e., installation of the temporary monorails) was a performance deficiency. This 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 associated objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," dated May 19, 2005, Flowchart 2, "Assessment of Risk Management Actions," the inspectors determined the need to calculate the risk deficit to determine the significance of this issue. Based on a review of the licensee's risk model, it was determined that the incremental core damage probability associated with this finding was less than 1×10^{-6}; therefore, this finding was determined to have very low safety significance (Green). The finding has a human performance cross-cutting aspect associated with consistent processes because the licensee failed to use a consistent, systematic approach to evaluating risk for planned maintenance activities [H.13].

Enforcement. Title 10 CFR 50.65(a)(4) states, in part, "Before performing maintenance activities (including, but not limited to surveillance, post-maintenance testing, and corrective and preventive maintenance), the licensee shall assess and manage the increase in risk that may result from proposed maintenance activities." Contrary to the above, prior to performing maintenance activities the licensee failed to assess and manage the associated increase in risk from the proposed maintenance activity. Specifically, on September 30, 2012, the licensee failed to evaluate the risk associated with the use of a non-seismically qualified crane when moving loads over an operable train of service water. This issue did not represent an immediate safety concern because, at the time of identification, the maintenance activity was no longer in progress. Since this violation was of very low safety significance (Green) and has been entered into the corrective action program as Condition Report CR-2015-001203, this violation is being treated as a non-cited violation consistent with Section 2.3.2.a of the NRC Enforcement Policy. (NCV 05000445/2015002-01; 05000446/2015002-01, "Failure to Adequately Assess Risk and Implement Risk Management Actions for Proposed Maintenance.")

1R15 Operability Determinations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed four operability determinations that the licensee performed for degraded or nonconforming structures, systems, or components (SSCs):

- April 15, 2015, CR-2015-003516, Wet cask pit boron concentration below minimum level for multi-purpose canister 20
- April 17, 2015, CR-2015-003378, Transformer XEC-1 potentially overloaded
- May 27, 2015, EV-CR-2015-000079-8, Breaching a hazard barrier for maintenance
- May 29, 2015, CR-2015-002577, Diesel generator 1-01 starting air system leak

The inspectors reviewed the timeliness and technical adequacy of the licensee's evaluations. Where the licensee determined the degraded SSC to be operable, the inspectors verified that the licensee's compensatory measures were appropriate to

provide reasonable assurance of operability. The inspectors verified that the licensee had considered the effect of other degraded conditions on the operability of the degraded SSC.

These activities constitute completion of four operability review samples, as defined in Inspection Procedure 71111.15.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed two post-maintenance testing activities that affected risk-significant structures, systems, or components (SSCs):

- April 29, 2015, Steam generator 1-03 flow control valve 1-FCV-0530
- June 8, 2015, Containment spray pump 1-04

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 constitute completion of two 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 two risk-significant surveillance tests and reviewed test results to verify that these tests adequately demonstrated that the structures, systems, and components (SSCs) were capable of performing their safety functions:

In-service tests:
- June 8, 2015, Containment spray pump 1-04

Reactor coolant system leak detection tests:
- June 23, 2015, Unit 1 and Unit 2 reactor coolant system leak detection

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 constitute completion of two surveillance testing inspection samples, as defined in Inspection Procedure 71111.22.

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

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

a. Inspection Scope

The inspectors performed an in-office review of changes to Comanche Peak Nuclear Power Plant Emergency Plan Implementing Procedure EPP-201-EAL, "Tech Bases," Revision 0, PCN1, submitted to NRC by letter dated March 12, 2015. The revision corrected typographical errors to instrument designations.

This revision was compared to its previous revision, to the criteria of NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, and to the standards in 10 CFR 50.47(b) to determine if the revision adequately implemented the requirements of 10 CFR 50.54(q)(3) and 50.54(q)(4). The inspectors verified that the revision did not reduce the effectiveness of the emergency plan. This review was not documented in a safety evaluation report and did not constitute approval of licensee-generated changes; therefore, this revision is subject to future inspection.

These activities constitute completion of one emergency action level and emergency plan change sample as defined in Inspection Procedure 71114.04.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors observed an emergency preparedness drill on April 1, 2015, 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 Technical Support Center, Operations Support Center, and simulator, 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 constitute completion of one emergency preparedness drill observation sample, as defined in Inspection Procedure 71114.06.

b. Findings

No findings were identified.

1EP7 Exercise Evaluation – Hostile Action Event (71114.07)

a. Inspection Scope

The inspectors observed the June 10, 2015, biennial emergency plan exercise to verify the exercise acceptably tested the major elements of the emergency plan, provided opportunities for the emergency response organization to demonstrate key skills and functions, and demonstrated the licensee's ability to coordinate with offsite emergency responders. The scenario simulated the following to demonstrate the licensee's capability to implement its emergency plan under conditions of uncertain physical security:

- Receipt of a credible threat against the licensee
- The intentional disabling of the site fire protection system
- A land-based assault on the site protected area
- Injuries to plant employees
- Damage to station electrical transformers, the service water systems, fuel stored in the spent fuel storage pool, and to the spent fuel pool cooling system
- A filtered and monitored radiological release to the environment via the Fuel Building Ventilation System

During the exercise the inspectors observed activities in the control room simulator and the following emergency response facilities:

- Technical Support Center
- Operations Support Center
- Emergency Operations Facility
- Central and/or Secondary Alarm Station(s)
- Incident Command Post

The inspectors focused their evaluation of the licensee's performance on event classification, offsite notification, recognition of offsite dose consequences, development of protective action recommendations, staffing of alternate emergency response facilities, and the coordination between the licensee and offsite agencies to ensure reactor safety under conditions of uncertain physical security.

The inspectors also assessed recognition of, and response to, abnormal and emergency plant conditions, the transfer of decision-making authority and emergency function

responsibilities between facilities, on-site and offsite communications, protection of plant employees and emergency workers in an uncertain physical security environment, emergency repair evaluation and capability, and the overall implementation of the emergency plan to protect public health and safety and the environment. The inspectors reviewed the current revision of the facility emergency plan, emergency plan implementing procedures associated with operation of the licensee's primary and alternate emergency response facilities, and procedures for the performance of associated emergency and security functions.

The inspectors attended the post-exercise critiques in each emergency response facility to evaluate the initial licensee self-assessment of exercise performance. The inspectors also attended a subsequent formal presentation of critique items to plant management. The specific documents reviewed during this inspection are listed in the attachment.

The inspectors reviewed the scenario of previous biennial exercises and licensee drills conducted between November 2013 and May 2015, to determine whether the June 10, 2015, exercise was independent and avoided participant preconditioning, in accordance with the requirements of 10 CFR Part 50, Appendix E, IV.F(2)(g). The inspectors also compared observed exercise performance with corrective action program entries and after-action reports for drills and exercises conducted between January 2014 and May 2015, to determine whether identified weaknesses had been corrected in accordance with the requirements of 10 CFR 50.47(b)(14), and 10 CFR 50, Appendix E, IV.F.

These activities constituted completion of one exercise evaluation sample as defined in Inspection Procedure 71114.07.

b. Findings

Introduction. The inspectors identified two examples of licensee failures to correct deficiencies occurring during the June 10, 2015, emergency preparedness exercise as required by 10 CFR 50.47(b)(14). Specifically, the licensee failed to identify that a lack of radiological briefings for plant repair teams and a lack of habitability assessments in the Operations Support Center were deficiencies requiring corrective action.

Description. The inspectors observed licensee performance at the Operations Support Center during the June 10, 2015, emergency preparedness exercise. The inspectors observed that facility manager and work planners were in the alternate Operations Support Center, located in a plant building outside of the protected area, while the on-shift non-licensed operators, mechanics, chemistry technicians, and radiation protection technicians were directed to the normal facility location inside the protected area. Within the exercise scenario, the entire site had been evacuated so that the only remaining mechanics, chemistry technicians, and radiation protection technicians were those in the facility.

The inspectors noted that a permanent radiation monitor is located in the on-site Operations Support Center to detect elevated radiation exposure and warn facility staff. Licensee staff are required to source check this radiation monitor when activating the facility, but were unable to acquire the needed radiation source because of movement restrictions related to the hostile events in progress. The inspectors observed that the on-site facility staff concluded they could not use a radiation monitor that had not been source checked that day and subsequently did not use the monitor to establish the

radiological habitability of the facility. In addition, although portable radiation survey meters were available, they were not used to establish and monitor the radiological habitability of the facility. The inspectors observed that the licensee subsequently critiqued the problem in performing the source check, but did not identify the lack of monitoring for radiological habitability as a problem requiring corrective action. The inspectors concluded that a lack of monitoring for radiological habitability could preclude the effective implementation of the emergency plan were that performance to occur in an actual radiological emergency because emergency workers could receive excessive radiation exposure without recognizing the radiological conditions. Therefore, the inspectors concluded that the lack of monitoring for radiological habitability was a deficiency (weakness) which was not critiqued by the licensee.

The inspectors observed the formation, briefing, and dispatch of three plant mitigation and repair teams from the Operations Support Center during the exercise. The inspectors noted that two teams performing the shutdown turbine gland steam repair and valve verification were dispatched without receiving a radiological briefing as required by EPP-116, "Emergency Repair and Damage Control and Immediate Entries," Revision 8, and EPP-205, "Activation and Operation of the Operations Support Center," Revision 12. The teams were directed to "check in with radiation protection." However, at that time in the scenario, the only radiation protection personnel remaining on site were those in the facility and the team members were not observed to communicate with any other radiation protection personnel, such as those in the Technical Support Center. The inspectors observed that the licensee subsequently critiqued that command and control issues were created by having the Operations Support Center split into two locations, but did not critique the lack of specific briefings to plant repair teams. The inspectors concluded that a lack of radiological briefings for plant mitigation and repair teams could preclude the effective implementation of the emergency plan were that performance to occur in an actual radiological emergency because emergency workers would not be informed about current conditions and consequently could receive excessive radiation exposure. Therefore, the inspectors concluded that the lack of radiological briefings for plant repair teams was a deficiency (weakness) which was not critiqued by the licensee.

Analysis. The failure to correct deficiencies occurring during an emergency preparedness exercise is a performance deficiency within the licensee's ability to foresee and correct. The performance deficiency is more than minor because the issue is associated with the Emergency Response Organization Readiness and Performance cornerstone attributes (training) and adversely affected the cornerstone objective. The performance deficiency affects the cornerstone objective because the licensee cannot assure that adequate measures will be taken to protect the health and safety of the public when deficiencies are not corrected. A weakness (deficiency) is defined in Manual Chapter 0609, Appendix B, "Emergency Preparedness Significance Determination Process," Section 2(I), dated September 23, 2014, as performance that would preclude the effective implementation of the emergency plan were that performance to occur in an actual radiological emergency. The inspectors concluded that a lack of radiological briefings for plant repair teams and a lack of Operations Support Center radiological habitability surveys could preclude the effective implementation of the licensee emergency plan because they could lead to excessive radiation doses to emergency workers. The finding was evaluated using Manual Chapter 0609, Appendix B, "Emergency Preparedness Significance Determination Process," dated September 23, 2014, and was determined to be of very low safety significance (Green) because the performance deficiency was a failure to comply

with NRC requirements and was not a degraded or lost planning standard function. The planning standard was not degraded or lost because the deficiency was not associated with a risk-significant planning standard function and the licensee identified other deficiencies that occurred during the June 10, 2014, exercise. This finding was entered into the licensee's corrective action program as Condition Report CR-2015-005496. The finding has been assigned a cross-cutting aspect of Identification in the Problem Identification and Resolution cross-cutting area because the licensee failed to identify issues completely and accurately [P.1].

Enforcement. Title 10 CFR 50.47(b)(14) requires, in part, that deficiencies identified as a result of exercises will be corrected. Contrary to the above, the licensee did not correct deficiencies occurring during an exercise conducted June 10, 2015. Specifically, the licensee failed to identify that a lack of radiological briefings for plant repair teams and a lack of habitability assessments in the Operations Support Center were deficiencies requiring corrective action. The licensee did not assign specific corrective actions to these performance issues in the site corrective action program. (NCV 05000445/2015002-02; 05000446/2015002-02, "Failure to Critique Weaknesses in Radiation Protection Practices")

1EP8 Exercise Evaluation – Scenario Review (71114.08)

a. Inspection Scope

The licensee submitted the preliminary exercise scenario for the June 10, 2015, biennial exercise to the NRC on April 10, 2015, in accordance with the requirements of 10 CFR Part 50, Appendix E, IV.F(2)(b). The inspectors performed an in-office review of the proposed scenario to determine whether it would acceptably test the major elements of the licensee's emergency plan, and provide opportunities for the emergency response organization to demonstrate key skills and functions.

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 Reactor Coolant System Total Leakage (BI02)

a. Inspection Scope

The inspectors reviewed the licensee's records of reactor coolant system total leakage for the period of April 2014 through March 2015 to verify the accuracy and completeness of the reported data. The inspectors observed the performance of OPT-303, "Reactor Coolant System Water Inventory," Revision 14 on June 29, 2015. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02,

"Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the reactor coolant system leakage performance indicator for Units 1 and 2, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.2 Drill/Exercise Performance (EP01)

a. Inspection Scope

The inspectors reviewed the licensee's evaluated exercises, emergency plan implementations, and selected drill and training evolutions that occurred between April 2014 and March 2015 to verify the accuracy of the licensee's data for classification, notification, and protective action recommendation (PAR) opportunities. The inspectors reviewed a sample of the licensee's completed classifications, notifications, and PARs to verify their timeliness and accuracy. The inspectors used Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data. 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.

.3 Emergency Response Organization Drill Participation (EP02)

a. Inspection Scope

The inspectors reviewed the licensee's records for participation in drill and training evolutions between April 2014 and March 2015 to verify the accuracy of the licensee's data for drill participation opportunities. The inspectors 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 inspectors reviewed the licensee's basis for reporting the percentage of ERO members who participated in a drill. The inspectors reviewed drill attendance records and verified a sample of those reported as participating. The inspectors used Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data. 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.

.4 Alert and Notification System Reliability (EP03)

a. Inspection Scope

The inspectors reviewed the licensee's records of Alert and Notification System tests conducted between April 2014 and March 2015 to verify the accuracy of the licensee's data for siren system testing opportunities. The inspectors reviewed procedural guidance on assessing Alert and Notification System opportunities and the results of periodic alert and notification system operability tests. The inspectors used Nuclear Energy Institute 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 Semiannual Trend Review

a. Inspection Scope

The inspectors reviewed the licensee's corrective action program, performance indicators, system health reports, and other documentation to identify trends that might indicate the existence of a more significant safety issue. The inspectors verified that the licensee was taking corrective actions to address identified adverse trends.

These activities constitute completion of one semiannual trend review sample, as defined in Inspection Procedure 71152.

b. Findings

Introduction. The inspectors identified a Severity Level IV non-cited violation of 10 CFR 50.71(e), "Maintenance of Records, Making Reports," associated with the licensee's failure to update the Final Safety Analysis Report.

Description. Inspectors reviewed Evaluation EV-CR-2014-007235-4, which had been performed to allow the station to lineup both spent fuel pool heat exchangers on one unit's component cooling water system. This evaluation determined that this lineup was acceptable but it required additional restrictions associated the safe shutdown impoundment temperature and the component cooling water heat exchanger fouling factor to comply with technical specification requirements for unit cool down. Inspectors questioned why the stations Final Safety Analysis Report did not reflect the need to evaluate this lineup for these restrictions.

Specifically, inspectors reviewed the stations Final Safety Analysis Report and noted that it discussed the licensee's ability to share structures, systems and components, between the two units. However, it did not discuss nor identify the need to evaluate for any additional restrictions associated with sharing any structures, systems and components, specifically the spent fuel pool heat exchangers.

Furthermore, inspectors noted that the licensee had previously identified the need to evaluate this lineup for additional restrictions. Specifically, in 1999 the licensee had determined that when lining up two spent fuel pool heat exchangers to one unit's component cooling water system additional restrictions associated the safe shutdown impoundment temperature and the component cooling water heat exchanger fouling factor were required.

Inspectors determined that the facilities Final Safety Analysis Report did not contain the most current information developed associated with shared system operations of the component cooling water system. Inspectors also noted that this created the potential that future changes to the facility could be made, as permitted by 10 CFR 50.59, without properly accounting for the missing information.

Analysis. The licensee's failure to update the Final Safety Analysis Report to reflect restrictions associated with shared system operations of the component cooling water loads was a performance deficiency. Because this performance deficiency had the potential to impact the NRC's ability to perform its regulatory function, inspectors evaluated the performance deficiency using traditional enforcement. Using Inspection Manual Chapter 0612, "Power Reactor Inspection Reports," dated January 24, 2013, Appendix B, "Issue Screening," the Reactor Oversight Program aspect of this performance deficiency was determined to be minor. Using the NRC Enforcement Policy, dated January 28, 2013, the traditional enforcement performance deficiency was determined to be a Severity Level IV violation in accordance with Section 6.1.d.3, because the lack of up-to-date information in the Final Safety Analysis Report had not resulted in any unacceptable changes to the facility or procedures. Inspectors

determined that cross-cutting was not applicable to this finding because it was strictly a traditional enforcement issue.

Enforcement. Title 10 CFR 50.71(e), "Maintenance of Records, Making of Reports," states, in part, "each person licensed to operate a nuclear power reactor…shall update periodically, as provided in paragraphs (e) (3) and (4) of this section, Final Safety Analysis Report originally submitted as part of the application for the license, to assure that the information included in the report contains the latest information developed." Contrary to the above, the licensee failed to update the Final Safety Analysis Report originally submitted as part of the application for the license, to assure that the information included in the report contained the latest information developed. Specifically, from 1999 until present, the licensee failed to update the Final Safety Analysis Report to reflect restrictions associated with shared system operations of the non-safeguards component cooling water loads. This issue does not represent an immediate safety concern because, at the time of identification, the component cooling water systems were not cross connected. Because this violation was entered into the corrective action program as condition report CR-2014-007235 to ensure compliance was restored in a reasonable amount of time, and the violation was not repetitive or willful, this Severity Level IV violation is being treated as a non-cited violation (NCV), consistent with Section 2.3.2.a of the Enforcement Policy. (NCV 05000445/2015002-03; 05000446/2015002-03, "Failure to Update the UFSAR for Restrictions Associated with Shared System Operations of Component Cooling Water")

.3 Annual Follow-up of Selected Issues

a. Inspection Scope

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

- In April 2015, inspectors performed an in depth follow-up review of the station's implementations of the safety-related manhole cover concrete expansion anchors.

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 constitute completion of one annual follow-up sample as defined in Inspection Procedure 71152.

b. Findings

Introduction. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," associated with the licensee's failure to ensure that design changes were subject to design control measures commensurate with those applied to the original design and were approved by the designated responsible organization.

Description. Inspectors had previously identified an issue associated with installation of incorrect concrete expansion anchors, NCV 05000445/2015001-03, "Failure to Follow

Work Planning Procedure," for safety-related manhole covers. While reviewing the licensee's corrective actions taken in response to this issue, inspectors noted that the specified embedment depth of all of the installed concrete anchors was less that what was required by design analysis CS(B)-127, "Tornado Barriers – Hatch/Manhole Curb Thickness." Specifically, the analysis had determined that the concrete anchors were required to have an embedment of 5 and 1/16 inches to provide protection for tornado loads, however all of the anchors were at 4 inches embedment.

Inspectors discussed this issue with the stations engineering staff and determined that the change in embedment depth occurred in Design Change Authorization 60014, dated March 6, 1990. Inspectors reviewed the design change and noted that it did direct a different embedment depth but it did not evaluate this new embedment depth as was done in the original design analysis, it simply stated that the new embedment depth was acceptable based on a review of the original design analysis. Therefore, the inspectors determined that the licensee had failed to ensure that this design change was subject to design control measures commensurate with those applied to the original design, and were approved by the designated responsible organization.

The inspectors informed the licensee of their concern. The licensee initiated Condition Report CR-2015-003152 to capture this issue in the station corrective action program.

Analysis. The licensee's failure to ensure that changes to the facility were subject to design control measures commensurate with those applied to the original design, and were approved by the designated responsible organization was a performance deficiency. This 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 associated objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee changed required embedment depths for safety-related concrete expansion anchors associated with manhole covers but failed to re-perform the design calculation to demonstrate that the new embedment depth was sufficient for tornado loading. 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 does not reflect current licensee performance.

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion III, "Design Control," states, in part, that, "Design changes shall be subject to design control measures commensurate with those applied to the original design and be approved by the organization that performed the original design unless the applicant designates another responsible organization." Contrary to the above, the licensee failed to ensure that a design change

was subject to design control measures commensurate with those applied to the original design and be approved by the organization that performed the original design. Specifically, the licensee changed required embedment depths for safety-related concrete expansion anchors associated with manhole covers but failed to re-perform the design calculation to demonstrate that the new embedment depth was sufficient for tornado loading. The licensee performed an operability determination which established a reasonable expectation for operability pending final resolution of the issue. This violation is being treated as a non-cited violation, consistent with Section 2.3.2.a of the Enforcement Policy. The violation was entered into the licensee's corrective action program as Condition Report CR-2015-003152. (NCV 05000445/2015002-04; 05000446/2015002-04, "Failure to Evaluate and Appropriately Approve Design Changes")

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

.1 (Closed) Licensee Event Report 05000445/13-002-00, Unanalyzed Condition Under 10CFR50 Appendix R, Secondary Fires from Unprotected Ammeter Wiring

a. Inspection Scope

During the licensee's review of operating experience associated with the unfused remote direct current ammeter circuit, that could result in a secondary fire due to multiple fire induced faults, they determined Comanche Peak Nuclear Power Plant was susceptible to this condition. In a postulated event, a fire outside of the control room could cause one of the ammeter wires to hot short to the ground plane. Simultaneously, the event could cause another direct current wire from the opposite polarity on the same battery too short to the ground plane. This would cause a ground loop through the unprotected ammeter wire. This event could result in excessive current flow in the ammeter wiring causing a secondary fire in the raceway system. The secondary fire could adversely affect safe shutdown equipment and potentially cause the loss of the ability to conduct a safe shutdown as required by 10CFR50 Appendix R.

The cause of the unfused ammeter circuits was that the original design did not adequately address the protection program requirements. Specifically, the uniqueness of the design application was not apparent and is different from standard design convention, and this resulted in the unfused ammeter circuits being utilized in applications related to fire safe shutdown without being identified as needing specific analysis or resolution.

Immediate corrective action was to establish compensatory fire watch measures which were implemented until implementation of a design change that included circuit protection for the cables routed from the safety-related batteries to the ammeters.

b. Findings

During this review a licensee identified finding was reviewed, and is discussed in Section 4OA7 of this report.

.2 Major Loss of Assessment Capability for a Seismic Event

a. Inspection Scope

On April 7, 2015, the licensee submitted event notification #50965 per 10 CFR 50.72(b)(3)(xiii) for a major loss of assessment capability due to the identification of four instances within the previous three years where the ability to assess a seismic event was lost for greater than 24 hours. Based on industry operating experience, the licensee identified that the compensatory measures that had been implemented during periods when the seismic monitoring system was out of service would not have resulted in adequate and timely assessment of a seismic event. The licensee determined that, during those periods, the ability to assess and declare an Alert within fifteen minutes was lost and the ability to assess and declare an Unusual Event within fifteen minutes was degraded. At the time of the event notification, the seismic monitoring system was in service and able to perform its function. The licensee notified the NRC and took actions to ensure that operators recognized the loss of the system as a reportable event.

b. Findings

One licensee identified violation of very low safety significance (Green) is discussed in Section 4OA7 of this report.

These activities constitute completion of two event follow-up samples, as defined in Inspection Procedure 71153.

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.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On November 20, 2014, inspectors conducted an inspection debrief with Mr. K. Peters, Site Vice President, and other members of the licensee staff, and telephonically exited with Mr. G. Struble, Operations/Simulator Training Manager, on May 27, 2015. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

On April 20, 2015, the inspectors discussed the in-office review of the preliminary scenario for the 2015 biennial exercise, submitted April 10, 2015, with Mr. J. Hull, Manager, Emergency Preparedness, and other members of the licensee staff. The licensee acknowledged the issues presented.

On June 25, 2014, the inspectors presented the resident inspection results to Mr. T. McCool, Vice President Engineering and Support, 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 June 30, 2015, the inspectors presented the results of the on-site inspection of the biennial emergency preparedness exercise conducted June 10, 2015, to Mr. R. Flores, Senior Vice President and Chief Nuclear Officer, and other members of the licensee staff. The inspectors also discussed the in-office review of licensee changes to emergency plan implementing procedures. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

4OA7 Licensee-Identified Violations

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

- A licensee identified violation of Unit 1 and Unit 2 License Condition 2.G “Fire Protection,” was identified for the licensee’s failure to correctly implement the fire protection program with regard to unfused direct current ammeter circuits that could result in a secondary fire due to multiple fire induced faults. Inspectors determined that this issue required a detailed risk evaluation. A senior reactor analyst performed a detailed risk evaluation and the bounding change to the core damage frequency was less than 2E-8/year (Green). The dominant core damage sequences involved a control room fire initiating event in the train A or B direct current ammeter cabinets, a secondary cable fire in a cable tray associated with one train of safety related equipment (two hot shorts required), and having the alternate train of safety related equipment out of service for maintenance. The low fire frequency and the train separation and protection that are required by the fire protection program helped to minimize the significance.

- Title 10 CFR 50.65(a)(3) requires, in part, that performance and condition monitoring activities and associated goals shall be evaluated every refueling cycle and that adjustments should be made to ensure that the objective of minimizing failures is appropriately balanced against the objective of minimizing unavailability. Contrary to the above, on July 11, 2013, the licensee evaluated performance and condition monitoring

activities and failed to make necessary adjustments to performance monitoring criteria. Specifically, the licensee had implemented a revision to the plant probabilistic risk analysis in 2012. This revision resulted in changes to reliability and availability assumptions that were identified as needing to be incorporated into the maintenance rule performance criteria for several risk significant systems. The licensee did not implement these changes in a timely manner, and failed to recognize that during the periodic assessment completed on July 11, 2013. In 2014, the licensee hired a new maintenance rule coordinator, who recognized the failure to incorporate the risk analysis recommendations and took action to review the affected performance criteria. The violation is more than minor because it affected the equipment performance attribute of the Mitigating Systems Cornerstone and impacted the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609, Attachment 04, "Initial Characterization of Findings," and Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) For Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," the finding was determined to be of very low safety significance (Green) because the finding was not a deficiency affecting the design or qualification of a mitigating SSC, and the SSCs maintained their operability. The violation was entered into the licensee's corrective action program as CR 2015-005304.

- 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 alert due to a seismic event based on an alarm condition on their seismic monitoring system panel in conjunction with other indications. Contrary to the above, during four separate periods between May 16, 2012 and October 1, 2014, the licensee failed to maintain the ability to classify an alert due to a seismic event. The licensee's emergency action level HA1.1, an alert due to a seismic event, required the receipt of an alarm from the seismic monitoring system. The licensee had implemented proceduralized compensatory measures when the system was unavailable that consisted of an engineering evaluation to determine whether the event met the emergency action level criteria. The licensee determined these measures would not be sufficient to allow the emergency director to classify the event within fifteen minutes. The licensee discovered this during a review of industry operating experience and submitted a notification report for a loss of major assessment capability. The violation is more than minor because it affected the ERO Performance 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, Attachment 04, "Initial Characterization of Findings," and 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 Alert would be declared in a degraded manner for a seismic event, 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-2015-003129.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

J. Barnette, Consulting Licensing Technologist
R. Flores, Senior Vice President and Chief Nuclear Officer
T. Hope, Manager, Regulatory Affairs
J. Hull, Manager, Emergency Preparedness
A. Marzloff, Shift Operations Manager
T. McCool, Vice President, Engineering and Support
D. McGaughey, Director, Operations
R. Blankenship, Consulting Engineer
A. Glass, Requalification Supervisor
G. Struble, Operations/Simulator Training Manager
J. Wise, Simulator Supervisor
M. Stakes, Director, Maintenance
J. Taylor, Director, Site Engineering

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000445/2015002-01 05000446/2015002-01	NCV	Failure to Adequately Assess Risk and Implement Risk Management Actions for Proposed Maintenance
05000445/2015002-02 05000446/2015002-02	NCV	Failure to Critique Weaknesses in Radiation Protection Practices
05000445/2015002-03 05000446/2015002-03	SL-IV	Failure to Update the UFSAR for Restrictions Associated with Shared System Operations of Component Cooling Water
05000445/2015002-04 05000446/2015002-04	NCV	Failure to Evaluate and Appropriately Approve Design Changes

Closed

05000445/2013-002-00	LER	Unanalyzed Condition Under 10CFR50 Appendix R, Secondary Fires from Unprotected Ammeter Wiring (Section 4OA3.1)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures

Number	Title	Revision / Date
ABN-907	Acts of Nature	15
ODA-308	LCO Tracking Program	15

Miscellaneous Document

Number	Title	Revision
DBD-CS-071	Probable Maximum Flood (PMF)	12
	Comache Peak Final Safety Analysis Report	106

Section 1R04: Equipment Alignment

Work Orders

05015110 04866630

Miscellaneous Document

Number	Title	Revision / Date
DBD-CS-096	Safe Shutdown Impoundment/Dam	12
	Comanche Peak Final Safety Analysis Report	106
	Dam Safety Inspection Report	April 11,2013
	Dam Safety Inspection Report	April 9, 2015

Section 1R05: Fire Protection

Procedures

Number	Title	Revision
	Comanche Peak Nuclear Power Plant Fire Protection Report	29

Calculations

Number	Title	Revision
0210-063-0006	Electrical and Control Building As-Built Combustible Loading Calculation	17

Calculations

Number	Title	Revision
0210-0630040	Heat of Combustion Values	9
2-FP-0083	As-Built Combustible Loading Calculation – Unit 2 Turbine Building	11

Drawings

Number	Title	Revision
E1-2012-BT	Electrical Control building Fire Detection plan EL 792'-0"	CP-2
M1-0215-D	Flow Diagram Starting Air Piping CP1-MEDGEE-01	CP-25

Condition Reports (CRs)

2008-003060

Section 1R06: Flood Protection Measures

Calculations

Number	Title	Revision
CSS-658	Room Flooding Analysis for All Buildings	3
SI-CA-0000-693	Miscellaneous Building – Flooding Analysis	1

Section 1R07: Heat Sink Performance

Condition Reports

2014-008486 2014-013316

Calculation

Number	Title	Revision
ME-CA-0229-2188	Component Cooling Water Heat Exchanger Fouling Factor Analysis	7

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

Procedures

Number	Title	Revision
N/A	2014 Annual Operational Overlap Overview	N/A
N/A	Benchmarking a Windows-based RELAP5 Simulator	N/A

Procedures

Number	Title	Revision
NTG-104	Nuclear Training Guideline - Implementation	12
NTG-104-9	Simulator Booth Checklist	2
ODA-315	Licenses Operator Maintenance Tracking	7
OTG-207	AUDIT and NRC Examination Administration	2
OTG-210	NRC Requalification Exam Development Process	0
SAPT-001	Steady State Performance Test	2
SAPT-002	Transient Performance Test	1
SAPT-003	Normal Operations Test	1
SAPT-004	Core Performance Test	2
SOMI-010	Simulator Testing Program	17
SOMI-010 Att 4	Four Year Malfunction Test Schedule	17
STA-121	License Operator Physicals and License Application Process	4
TRA-204	Licensed Operator Requalification Training	16

Miscellaneous Documents

Number	Title	Revision / Date
ANSI/ANS-3.4	Medical Certification and Monitoring of Personnel Requiring Operator Licenses for Nuclear Power Plants	1983
AO4204	Job Performance Measure	November 5, 2014
AO6424B	Job Performance Measure	November 5, 2014
RO1310A	Job Performance Measure	November 5, 2014
RO4004A	Job Performance Measure	November 5, 2014
RO7003B	Job Performance Measure	November 5, 2014
SO1136E	Job Performance Measure	November 5, 2014
AO5412A	Job Performance Measure	November 17, 2014
RO5115B	Job Performance Measure	November 17, 2014
AO5470C	Job Performance Measure	October 30, 2013
RO1305	Job Performance Measure	October 30, 2014
D1303	Simulator Scenario	October 28, 2013
D1304	Simulator Scenario	October 28, 2013
D1401	Simulator Scenario	November 17, 2014

Miscellaneous Documents

Number	Title	Revision / Date
D1403	Simulator Scenario	November 5, 2014
D1404	Simulator Scenario	November 5, 2014
D1408	Simulator Scenario	November 17, 2014
D1409	Simulator Scenario	November 17, 2014
LO49.E13.E04	2013 LORT Operational Examination 4	October 16, 2013
LO49.E13.J04	2013 LORT JPM Examination 4	October 24, 2013
LO49.E13.J06	2013 LORT JPM Examination 6	October 24, 2013
LO69.E13.E01	2013 LORT Operational Remedial Examination 1	October 16, 2013
LO69.E13.J01	2013 LORT JPM Remedial Examination 1	October 24, 2013
LO69.E13.J02	2013 LORT JPM Remedial Examination 2	December 18, 2013
LO49.F14.R04	2014 LORT Written Examination	March 12, 2015
N/A	2013 Steady State Test Results – 75% Power	January 27, 2014
N/A	2013 Transient Test Results – Manual RX Trip	January 27, 2014
N/A	2013 Transient Test Results – Trip all RCPs	January 27, 2014
NRC Form 396	Certification of Medical Examination by Facility Licensee	May 2012
NRC Form 398	Personal Qualification Statement – Licensee	May 2013
Reg Guide 1.134	Medical Evaluation of Licensed Personnel for Nuclear Power Plants	2
SOMI 010 Att 1	Simulator Annual Performance Test Summary – 2013	January 27, 2014
SOMI-009	Simulator Configuration Management	11

Condition Reports

CR2012-11747	CR2013-03289	CR2013-03449	CR2013-04149	CR2013-06236
CR2013-06709	CR2013-06818	CR2013-07771	CR2013-08017	CR2013-09874
CR2013-10455	CR2013-10505	CR2013-11582	CR2013-11878	CR2013-12345
CR2014-03268	CR2014-04111	CR2014-05042	CR2014-05254	CR2014-05469
CR2014-09516	CR2015-04770	SAR07SA0147	SAR13SA0268	SAR14SA0013
SAR14SA0016	SAR14SA0032	SAR14SA0051	SAR14SA0068	SAR14SA0086
SAR14SA0142	SAR14SA0161			

Section 1R12: Maintenance Effectiveness

Condition Reports (CRs)

2013-005278	2015-005304	2012-009694	2012-000039

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

Number	Title	Revision
ABN-907	Acts of Nature	15

Section 1R15: Operability Determinations and Functionality Assessments

Drawings

Number	Title	Revision
M1-2730-01	Diesel Generator 1EG1 Engine Start-Stop Pneumatic Control Schematics	CP-21
M1-0215-D	Flow Diagram Starting Air Piping CP1-MEDGEE-01	CP-25

Procedures

Number	Title	Revision
ETP-TP-11A-1	Diesel Generator Five Start Test	0

Condition Reports (CRs)

2015-002577	2015-004320	2015-003156

Work Orders

4077949

Miscellaneous Document

Number	Title	Revision
DBD-ME-011	Diesel Generator Sets	36
	Certificate of Compliance Number 1014	7

Section 1R19: Post-Maintenance Testing

Procedures

Number	Title	Revision
OPT-205A	Containment Spray System	17

Section 1R22: Surveillance Testing

Procedures

Number	Title	Revision
OPT-303	Reactor Coolant System Water Inventory	14
OPT-457B	Train A Safeguards Slave Relay K740 and K741 Actuation Test	OT1

Condition Reports (CRs)

2015-000334

Work Order

4660542

Section 1EP4: Emergency Action Level and Emergency Plan Changes

Procedures and Documents

Number	Title	Revision
EPP-123	10 CFR 50.54(Q) Screening and Evaluation of Changes to Emergency Plan Documentation; March 19, 2015	1

Section 1EP6: Drill Evaluation

Condition Reports

2015-004235 2015-003224

Section 1EP7: Exercise Evaluation – Hostile

Procedures and Documents

Number	Title	Revision
	Comanche Peak Steam Electric Station Emergency Plan, February 21, 2013	39

Procedures and Documents

Number	Title	Revision
EPP-109	Duties and Responsibilities of the Emergency Coordinator, Recovery Manager; December 30, 2013	15
EPP-116	Emergency Repair and Damage Control and Immediate Entries; December 4, 2014	8
EPP-201	Assessment of Emergency Action Levels, Emergency Classification and Plan Activation; November 4, 2010	12
EPP-203	Notifications; November 4, 2010	16
EPP-204	Activation and Operation of the Technical Support Center; March 7, 2013	18
EPP-205	Activation and Operation of the Operations Support Center; March 21, 2011	12
EPP-206	Activation and Operation of the Emergency Operations Facility; February 2, 2012	16
EPP-220	Coordinated Offsite Organization Response to Plant Events; October 8, 2013	0
EPP-304	Protective Action Recommendations; December 19, 2011	21
EPP-3-4	Evacuation and Accountability; February 3, 2012	9

Condition Reports (Corrective Action System reports, CRs)

2015-005256 2015-005257 2015-005263 2015-005273 2015-005274 2015-005276
2015-005374 2015-005380 2015-005384 2015-005389 2015-005400 2015-005420
2015-005431 2015-005457

Section 4OA1: Performance Indicator Verification

Condition Reports

2015-000907 2014-001164 2015-000124

Section 4OA2: Problem Identification and Resolution

Condition Reports

2015-000907 2014-001164 2015-000124

Section 4OA3: Follow-up of Events and Notices of Enforcement Discretion

Condition Reports (CRs)

2015-003129 2015-002889

Miscellaneous Documents

Number	Title	Revision
DBD-EE-077	Seismic Instrumentation	8