UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 EAST LAMAR BLVD
ARLINGTON, TEXAS 76011-4511

August 14, 2013

EA-13-084

Matthew W. Sunseri, President and
Chief Executive Officer
Wolf Creek Nuclear Operating Corporation
P.O. Box 411
Burlington, KS 66839

SUBJECT: WOLF CREEK GENERATING STATION - INTEGRATED INSPECTION REPORT NO. 05000482/2013003, NRC INVESTIGATION REPORT 4-2012-023, AND NOTICE OF VIOLATION

Dear Mr. Sunseri:

On June 30, 2013, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the Wolf Creek Generating Station. In addition, the NRC Office of Investigations, Region IV completed an investigation on March 28, 2013. The purpose of the investigation was to determine whether an individual, formerly employed by Wolf Creek Generating Station, falsified procedure paperwork. The enclosed inspection report documents the inspection results which were discussed on July 11, 2013, with Mr. J. Broschak, Vice President of Engineering, and other members of your staff. A supplement exit was conducted on August 7, 2013, with Mr. R. Smith, Site Vice President and Chief Nuclear Operations Officer.

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

Based on the results of this inspection and the information developed during the investigation, the NRC has determined that a violation of NRC requirements occurred (EA-13-084). The violation is cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding it are described in detail in the subject inspection report. Because the violation is associated with willfulness, it was evaluated under the traditional enforcement process as set forth in the NRC Enforcement Policy. The NRC concluded that the violation, absent willfulness, would be considered a minor violation because the failure to complete and document the inspection per the procedure did not have any safety significance.

However, the NRC considers the violation to have been more significant than minor, because it involved willfulness, and therefore, the NRC has classified the violation at Severity Level IV, in accordance with the NRC Enforcement Policy. The current Enforcement Policy is included on the NRC's Web site at (http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html).

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. If you have additional information that you believe the NRC should consider, you may provide it in your response to the Notice. The NRC review of your response to the Notice will also determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

In addition, three NRC identified and two self-revealing findings of very low safety significance (Green) were identified during this inspection. Each of these findings was determined to involve violations of NRC requirements. Additionally, the NRC has determined that a traditional enforcement Severity Level IV violation occurred. This traditional enforcement violation was identified without an associated finding. The NRC is treating the NRC identified and self-revealing findings as non-cited violations (NCVs), consistent with Section 2.3.2 of the Enforcement Policy. These NCVs are described in the subject inspection report.

If you contest the violation or the significance of these NVCs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region IV; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Wolf Creek Generating Station.

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 Wolf Creek Generating Station.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response, if you choose to provide one, will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's Agencywide Document 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). To the extent possible, your response should not include any personal privacy or proprietary, information so that it can be made available to the Public without redaction.

Sincerely,

/RA/

Neil O'Keefe, Chief
Project Branch B
Division of Reactor Projects

Docket No.: 50-482
License No: NPF-42

Enclosures:
1. Notice of Violation
2. Inspection Report 05000482/2013003

w/Attachments:
1. Supplemental Information
2. Information Request for Inspection Activities, documented in 71111.08
3. Information Request for Inspection Activities, documented in 71124.01

cc w/encl:
Electronic Distribution for Wolf Creek Generating Station

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DOCUMENT NAME: R:/_REACTORS_WC2013003-RP CAP
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SUNSI Rev Compl.	☑Yes ☐ No	ADAMS	☑Yes ☐ No	Reviewer Initials	NFO
Publicly Avail.	☑Yes ☐ No	Sensitive	☐Yes ☑ No	Sens. Type Initials	NFO
SRI:DRP/B	RI:DRP/B	SPE:DRP/B	C:DRS/TSB	C:DRS/EB1	C:DRS/EB2
CPeabody	CHunt	MBloodgood	RKellar	TFarnholtz	GMiller
/RA/E	/RA/E	/RA/	/RA/TFarnholtz for	/RA/	/RA/
08/05/13	08/12/13	08/13/13	08/07/13	08/07/13	08/09/13
C:DRS/OB	C:DRS/PSB1	C:DRS/PSB2	C:ORA/ACES	RC	BC:DRP/B
VGaddy	MHaire	JDrake	HGepford	KFuller	NOkeefe
/RA/for	/RA/	/RA/	/RA/	/RA/E	/RA/
08/07/13	08/07/13	08/08/13	08/13/13	08/08/13	08/13/13

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NOTICE OF VIOLATION

Wolf Creek Nuclear Operating Corporation
Wolf Creek Generating Station

Docket No. 50-482
License No. NFP-42
EA-13-084

During an NRC inspection conducted on June 30, 2013, and an NRC investigation completed on March 28, 2013, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

> 10 CFR 50.9 requires, in part, that information required by statute, orders, or license conditions to be maintained by the licensee shall be complete and accurate in all material respects.
>
> Wolf Creek License Condition 2.C.5, "Fire Protection," requires that the licensee shall maintain in effect all provisions of the approved fire protection program as described in the Standardized Nuclear Unit Power Plant System Final Safety Analysis Report. Section 9.5-1 of the Wolf Creek Updated Final Safety Analysis Report, dated March 10, 2013, describes the fire protection program and includes the licensee's commitment to meet Appendix 3A, "Conformance to NRC Regulatory Guides," and Appendix A, Table 9.5A-1 of Regulatory Guide1.39, "Housekeeping Requirements for Water-Cooled Nuclear Power Plants," Revision 2. Regulatory Guide 1.39, Revision 2, endorses ANSI Standard N45.2.3-1973, "Housekeeping During the Construction Phase of Nuclear Power Plants."
>
> ANSI Standard N45.2.3-1973, Section 3.5, states, in part, that periodic inspection and examination of the work areas shall be performed at scheduled intervals to assure adequacy of cleanliness and housekeeping practices. Section 4 of the above ANSI Standard states, in part, that copies of inspection and examination records shall be prepared and placed with other project records.
>
> Section 6.1.8 of Procedure AP 12-001, "Housekeeping Control," Revisions 6C and 7, dated May 5, 2006, and November 10, 2008, respectively, intended to implement the inspection and examination requirements of ANSI Standard N45.2.3-1973, states, in part that "assigned personnel shall walk down their areas monthly" and that "personnel record and document their walkdowns using the Housekeeping Inspection Card."
>
> Contrary to the above, between October and December 2008, the licensee failed to maintain records required by License Condition 2.C.5 that were complete and accurate in all material respects. Specifically, the Housekeeping Inspection Card for the spent fuel pool area indicated that the inspection had been completed by a certain individual. Security access logs, however indicated that the individual that completed the record (Housekeeping Inspection Card) had not entered the area. This information is material because it provides assurance to the NRC that the licensee has performed periodic inspection and examination of work areas at scheduled intervals to assure adequacy of cleanliness and housekeeping practices as required by the license condition.

This is a Severity Level IV violation. (Section 6.9)

Pursuant to the provisions of 10 CFR 2.201, Wolf Creek Nuclear Operating Corporation is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001 with a copy to the Regional Administrator, Region IV, and a copy to the NRC Resident Inspector at the Wolf Creek facility within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation; EA-13-084" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken, and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents and Access Management System (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html, to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days of receipt.

Dated this 13th day of August, 2013

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	05000482
License:	NPF-42
Report:	05000482/2013003
Licensee:	Wolf Creek Nuclear Operating Corporation
Facility:	Wolf Creek Generating Station
Location:	1550 Oxen Lane NE, Burlington, Kansas
Dates:	March 31 through June 30, 2013
Inspectors:	C. Peabody, Senior Resident Inspector C. Hunt, Acting Resident Inspector M. Bloodgood, Senior Project Engineer R. Kopriva, Senior Reactor Inspector L. Ricketson P.E., Senior Health Physicist B. Correll, Reactor Inspector J. O'Donnell, Health Physicist C. Speer, Reactor Inspector M. Williams, Reactor Inspector
Approved By:	Neil O'Keefe, Chief, Project Branch B Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000482/2013003, 03/31 – 06/30/2013, Wolf Creek Generating Station, Integrated Resident and Regional Report; Inservice Inspection Activities, Follow-up of Events and Notices of Enforcement Discretion, Other Activities.

The report covered a 3-month period of inspection by resident inspectors and announced baseline inspections by region-based inspectors. Five Green non-cited violations of significance were identified. One Severity Level IV violation was identified. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, "Significance Determination Process." The cross-cutting aspect is determined using Inspection Manual Chapter 0310, "Components Within the Cross-Cutting Areas." Findings for which the significance determination process does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified Findings and Self-Revealing Findings

Cornerstone: Initiating Events

- Green. The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," which states, in part, "activities affecting quality shall be prescribed by procedures of a type appropriate to the circumstances and accomplished in accordance with these procedures." Contrary to the above, the licensee failed to ensure procedures related to the boric acid corrosion control program were adequate and properly implemented. Specifically, prior to February 19, 2013, the licensee failed to: (1) resolve discrepancies within the boric acid corrosion control program procedure; (2) resolve discrepancies between the boric acid corrosion control program procedure and the boric acid leak management procedure; and (3) failed to track and resolve leakage for locations where health physics had installed drip catch containments, to review the Health Physics Drip Bag Log as part of the quarterly outside containment walkdown, and to add component locations to the program. Further, the licensee failed to periodically assess the effectiveness of the program on a refueling frequency. The violation was entered into the licensee's corrective action program as Condition Report 65212.

  The inspectors determined that the failure to recognize discrepancies between boric acid control procedures and the failure to follow boric acid program procedures was a performance deficiency. The performance deficiency was more than minor because it affected the Initiating Events Cornerstone attribute of procedure quality and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations, and if left uncorrected, the performance deficiency had the potential to lead to a more significant safety concern. Specifically, failure to resolve discrepancies within procedures or track and resolve leak locations where health physics had installed drip catch containments had the potential to mischaracterize leaks or allow leaks to corrode safety-related systems. Using Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process for Findings At-Power,” the finding was determined to be of very low safety significance (Green), because the finding was a procedure quality problem that did not represent a loss of system safety function, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The finding had a cross-cutting aspect in the area of human performance associated with the work practices component because the licensee failed to ensure supervisory and management oversight of work activities, including procedure appropriateness and compliance, such that nuclear safety is supported [H.4(c)] (Section 1R08.3.b.1).

- Green. The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” which states, in part, “Measures shall be established to assure that conditions adverse to quality are promptly identified and corrected.” Contrary to the above, the licensee failed to identify and correct a condition adverse to quality in a timely manner. Specifically, prior to February 19, 2013, the licensee failed to document the large area of boric acid leakage and corroded steel plates on the south primary shield wall of the containment refueling pool. The violation was entered into the licensee’s corrective action program as Condition Report 64213.

  The inspectors determined that the failure to promptly identify and evaluate a condition adverse to quality was a performance deficiency. The performance deficiency was more than minor because it affected the Initiating Events Cornerstone attribute of human performance and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations, and if left uncorrected, the performance deficiency had the potential to lead to a more significant safety concern. Specifically, failure to implement corrective actions could result in increased leakage and further degradation of the safety system. Using Manual Chapter 0609.04, “Phase 1 – Initial Screening and Characterization of Findings,” the inspectors determined that this finding was of very low safety significance (Green), because it was not a design or qualification deficiency, did not represent a loss of system safety function, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The finding had a cross-cutting aspect in the area of human performance associated with the work practices component because the licensee failed to define and effectively communicate expectations regarding procedural compliance and that personnel follow procedures [H.4(b)] (Section 1R08.3.b.2).

- Green. A Green self-revealing non-cited violation of Technical Specification 5.4.1.a was identified for failure to properly update operating procedures and train operators on the effects of a recently installed modification. Specifically, procedures were not adequately revised to provide guidance for operating the new Westinghouse Ovation digital turbine controls. As a result, operators shifted operating modes at a power level that caused an 11 percent power increase due to the combined characteristics of the steam control valves and the turbine control unit. Additionally, operators were trained to shift control modes at low power levels, where minor transients occurred, but were not restricted from performing the shift at high power levels, where the transient could be more significant. This issue was entered into the licensee's corrective action program under Condition Report 68711.

Failure to update station operating procedures to provide adequate guidance for design changes, and failure to adequately train operators on those implemented design changes is a performance deficiency. The performance deficiency is more than minor because it affected the design control, procedure quality, and human performance attributes of the Initiating Events cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Using Inspection Manual Chapter 0609, Appendix A, Checklist 1, "Initiating Events Screening Questions," the inspectors determined that the finding was of very low safety significance (Green) because the finding did not result in a reactor trip coincident with the loss of mitigation equipment. The inspectors determined that this finding had a cross-cutting aspect in the area of human performance area of work control, because the licensee did not appropriately communicate and coordinate during activities in which interdepartmental coordination was necessary to assure plant and human performance. Specifically, Wolf Creek did not communicate and coordinate to ensure that procedure guidance and operator training adequately conveyed the operational impacts of shifting turnine control modes at different power levels [H.3(b)] (Section 4OA3.5.b.1).

- Green. Inspectors identified a Green non-cited violation of Technical Specification 5.4.1.a for the failure to follow Conduct of Operations and Reactivity Management procedures. The inspectors reviewed an unplanned 11 percent power increase during a shift in turbine control modes, and identified that pre-job briefings did not adequately discuss expected plant response, operators did not take action to limit the power increase when an unexpected response was observed, and management was not adequately involved in decision making prior to continuing power ascension before the details of an apparent turbine control malfunction were fully understood. This issue was entered into the licensee's corrective action program under Condition Report 68711.

  Failure to provide contingency actions for a greater than anticipated reactor transient in the pre-job reactivity brief, and continuing with power ascension without understanding the cause of the unexpected turbine control system behavior is a performance deficiency. The performance deficiency is more than minor because it affected the human performance attributes of the Initiating Events cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Using Inspection Manual Chapter 0609 Appendix A, Checklist 1, "Initiating Events Screening Questions," and the inspectors determined that the finding was of very low safety significance (Green) because the finding did not result in a reactor trip coincident with the loss of mitigation equipment. The inspectors determined that this finding had a cross-cutting aspect in the area of human performance area of work practices because the licensee failed to communicate human error prevention techniques, such as holding pre-job briefings, self and peer checking, and proper documentation of activities such that work activities were performed safely. In addition, personnel proceeded in the face of uncertainty or unexpected circumstances. Specifically, in the first example control room operators pre-job reactivity brief was not appropriate commensurate with the risk of the assigned task; in the second example station personnel proceeded in the face of uncertainty [H.4(a)] (Section 4OA3.5.b.2).

Cornerstone: Mitigating Systems

- Green. A self-revealing non-cited violation of 10 CFR Part 50 Appendix B, Criterion XVI, Corrective Action, was identified on March 13, 2013. Specifically, the licensee replaced a jacket water pressure transmitter ten times, but failed to correct pressure oscillations that caused a fatigue failure of a pressure switch diaphragm, which rendered emergency diesel generator B inoperable. The inspectors concluded that the licensee ineffectively focused on correcting the apparent source of the pressure oscillations, but failed to evaluate the effects of the pressure cycles on components exposed to the same oscillations. This issue was entered into the licensee's corrective action program as Condition Report 65624.

  Failure to analyze the effects of pressure oscillations in the emergency diesel jacket water system on interfacing system components is a performance deficiency. The performance deficiency is more than minor because it affected the equipment performance attribute of the Mitigating Systems 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 Appendix A, "Significance Determination Process for Findings At Power", and determined that the finding screens as very low safety significance (Green) because the finding does not meet any criteria outlined in the Exhibit 2, Section A. Specifically the finding did not represent a loss of system safety function and did not exceed its technical specification allowed outage time of 72 hours. The inspectors determined that the finding had a cross-cutting aspect in the area of problem identification and resolution evaluations because the licensee failed to ensure that issues that potentially affect nuclear safety are fully evaluated and addressed in a timely manner [P.1(c)] (Section 4OA3.3).

Cornerstone: Barrier Integrity

- SLIV. The inspectors identified a Severity Level IV violation of 10 CFR 50.9, "Completeness and accuracy of information," for the Wolf Creek Nuclear Generating Station's failure to maintain complete and accurate records required by a license condition. Title 10 CFR 50.9 requires, in part, that information required by statute, orders, or license conditions to be maintained by the licensee shall be complete and accurate in all material respects. Contrary to the above, between October and December 2008, the licensee failed to maintain records required by License Condition 2.C.5 that were complete and accurate in all material respects. Specifically, the Housekeeping Inspection Card for the spent fuel pool area indicated that the inspection had been completed when security access logs indicate that the individual that completed the record had not entered the area. The NRC investigation determined that the assigned individual did not walk down the assigned area, and did not assign a designee to do so (EA-13-084).

  The failure to maintain records required by License Condition that are complete and accurate in all material respects in accordance with 10 CFR 50.9 was a violation. Because the violation is associated with willfulness and impacted the regulatory process it was evaluated under the traditional enforcement process as set forth in the NRC Enforcement Policy. Since this violation was the result of a willful action, the NRC considers the violation to be more than minor, and therefore, the NRC has classified the violation at Severity Level IV, in accordance with the NRC Enforcement Policy (Section 4OA5).

B. Licensee-Identified Violations

None

PLANT STATUS

The inspection period began with the unit in Mode 5 (cold shutdown) coming back from a refueling outage in progress. The plant started up on April 13, 2013, and reached 100 percent power on April 19, 2013. On April 29, 2013, the unit reduced power and the turbine was taken off line to repair a stator cooling water leak. The turbine was restarted on May 2, 2013, the same day the reactor experienced an unplanned transient (11percent power increase) while shifting operating modes in the turbine steam controls. The unit returned to 100 percent power on May 3, 2013. On May 7, 2013, the unit conducted a technical specification-required shutdown due to a non-functional Class 1E air conditioner, and achieved cold shut down for repairs the following day. The unit was restarted on May 13, 2013, and reached 100 percent power on May 15. On June 17, 2013, the recently repaired Class 1E air conditioner showed signs of substantial internal degradation. The unit began a technical specification-required shutdown, reaching 16 percent power before the licensee was granted a Notice of Enforcement Discretion to allow 7 days to replace the air conditioner again. Power was restored to 100 percent on June 19, 2013.

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

Since thunderstorms with potential tornados and high winds were forecast in the vicinity of the facility for June 27, 2013, the inspectors reviewed the plant personnel's overall protection for the expected weather conditions. On June 28, 2013, the inspectors walked down the main transformer system because the oil cooling pump's circuit breaker had tripped in the previous night's electrical storm, possibly due to lightning in the vicinity. The inspectors evaluated the plant staff's recovery actions against the site's procedures to verify whether the staff's actions were adequate. During the inspection, the inspectors focused on plant-specific design features and the licensee's procedures used to respond to specified adverse weather conditions. The inspectors also toured the plant grounds to look for any loose debris that could become missiles during a subsequent storm. The inspectors evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant. Additionally, the inspectors reviewed the Updated Safety Analysis Report and performance requirements for the systems selected for inspection, and verified that operator actions were appropriate as specified by plant-specific procedures. The inspectors also reviewed a sample of corrective action program items to verify that the licensee-identified adverse weather issues at an appropriate threshold and dispositioned them through the corrective action program in accordance with station corrective action procedures. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one adverse weather sample 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 walkdowns of the following risk-significant systems:

- May 21, 2013, essential service water train B
- June 5, 2013, motor-driven auxiliary feedwater train A
- June 5, 2013, motor-driven auxiliary feedwater train B

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

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

b. Findings

No findings were identified.

.2 Complete Walkdown

a. Inspection Scope

On April 30, 2013, the inspectors performed a complete system alignment inspection of the diesel generator B starting air system to verify the functional capability of the system. The inspectors selected this system because it was considered both safety significant and risk significant in the licensee's probabilistic risk assessment. The inspectors inspected the system to review mechanical and electrical equipment lineups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. The inspectors reviewed a sample of past and outstanding work orders to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the corrective action program database to ensure that system equipment-alignment problems were being identified and appropriately resolved. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one complete system walkdown sample as defined in Inspection Procedure 71111.04-05.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Fire Inspection Tours

a. Inspection Scope

The inspectors conducted fire protection walkdowns that were focused on availability, accessibility, and the condition of firefighting equipment in the following risk-significant plant areas:

- April 24, 2013, diesel generator B room, fire area D-1
- May 20, 2013, emergency core cooling systems B train (safety injection, centrifugal charging, and containment spray pump rooms), fire area A-4
- May 20, 2013, Class 1E 4kV switchgear B room, fire area C-10
- May 28, 2013, control room air conditioning room B, fire area A-21
- May 28, 2013, control room air conditioning room A, fire area A-22

The inspectors reviewed areas to assess if licensee personnel had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant; effectively maintained fire detection and suppression capability; maintained passive fire protection features in good material condition; and had implemented adequate compensatory measures for out of service, degraded or inoperable fire protection equipment, systems, or features, in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events with later additional insights, their potential to affect equipment that could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed in the attachment, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's corrective action program. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of five quarterly fire-protection inspection samples as defined in Inspection Procedure 71111.05-05.

b. Findings

No findings were identified.

.2 Annual Fire Protection Drill Observation (71111.05A)

a. Inspection Scope

On April 11, 2013, the inspectors observed a fire brigade activation response to an actual fire near the auxiliary boiler exhaust stack. The observation evaluated the readiness of the plant fire brigade to fight fires. The inspectors verified that the licensee staff identified deficiencies, openly discussed them in a self-critical manner, and took appropriate corrective actions. Specific attributes evaluated were (1) proper wearing of turnout gear and self-contained breathing apparatus; (2) proper use and layout of fire hoses; (3) employment of appropriate fire fighting techniques; (4) sufficient firefighting equipment brought to the scene; (5) effectiveness of fire brigade leader communications, command, and control; (6) search for victims and propagation of the fire into other plant areas; and (7) utilization of preplanned strategies.

These activities constitute completion of one annual fire-protection inspection sample as defined in Inspection Procedure 71111.05-05.

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

The inspectors reviewed licensee programs, verified performance against industry standards, and reviewed critical operating parameters and maintenance records for the essential service water (ESW)/service water macro foul treatment on June 12, 2013. The inspectors verified that performance tests were satisfactorily conducted for heat exchangers/heat sinks and reviewed for problems or errors; the licensee utilized the periodic maintenance method outlined in Electric Power Research Institute (EPRI) Report NP 7552, "Heat Exchanger Performance Monitoring Guidelines"; the licensee properly utilized biofouling controls; the licensee's heat exchanger inspections adequately assessed the state of cleanliness of their tubes; and the heat exchanger was correctly categorized under 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one annual heat sink inspection sample as defined in Inspection Procedure 71111.07-05.

b. Findings

No findings were identified.

1R08 Inservice Inspection Activities (71111.08)

Completion of Sections .1 through .5, below, constitutes completion of one sample as defined in Inspection Procedure 71111.08-05.

.1 Inspection Activities Other Than Steam Generator Tube Inspection, Pressurized Water Reactor Vessel Upper Head Penetration Inspections, and Boric Acid Corrosion Control (71111.08-02.01)

a. Inspection Scope

The inspectors observed 16 nondestructive examination activities and reviewed two nondestructive examination packages that included five types of examinations.

The inspectors directly observed the following nondestructive examinations:

SYSTEM	WELD IDENTIFICATION	EXAMINATION TYPE
Main Steam	Report # MT3954: Feedwater heater flange, Work Package # 13-364385-000, Drawing # M-010A-0054	Magnetic Particle
Essential Service Water	Report # MT3964, Work Order 11-341145-000, Drawing EFV0062, RHR	Magnetic Particle

SYSTEM	WELD IDENTIFICATION	EXAMINATION TYPE
	pump room "B", ESW valve EFV00062	
Essential Service Water	Report # MT3963, Work Order 11-340718-002, Drawing EFV0061, RHR pump room "B", ESW valve EFV00061	Magnetic Particle
Reactor Coolant System	Report # 3705, Work Order 11-339304-005, Weld ID# W1A Safety relief valve drain line valve BBV0088	Penetrant
Reactor Coolant System	Report # 3606, Work Order 11-339304-005, Drawing # M-13BB13 Safety relief valve drain line valve BBV0085	Penetrant
Reactor Coolant System	Report # 4236- Work Order 11-339304-005, ID # W-2A, Reactor pressurizer safety relief valve drain line valve BBV0088	Radiograph
Reactor Coolant System	Report # 4235, Work Order 11-339208-006, ID # W-3A , Reactor pressurizer safety relief valve drain line valve BBV0085	Radiograph
Reactor Coolant System	Report # RF19 JEW-004. Longitudinal seam weld on reactor pressurizer (shell to shell weld). ISI # TBB03-SEAM-1-W	Ultrasonic
Reactor Coolant System	Report # RF19-JLD-001. Examination of weld overlay on reactor pressurizer surge line (including both the nozzle to safe-end dissimilar metal weld and the safe-end to pipe stainless steel weld). ISI #TBB03-MW7090-WOL-DM and # TBB03-MW7090-WOL-SS.	Ultrasonic
Reactor Coolant System	Report # RF19 GPF-004. Reactor pressurizer surge nozzle inner radius examination. ISI # TBB03-10A-IR.	Ultrasonic
Reactor Coolant System	Report # RF19-JEW-005. Reactor pressurizer surge nozzle to shell weld. ISI # TBB03-10A-W	Ultrasonic
Main Steam	Report # RF19-GPF-005. 28 inch Fluted Head to Pipe. ISI # AB-01-F050, Loop 3 Circumferential Weld.	Ultrasonic

SYSTEM	WELD IDENTIFICATION	EXAMINATION TYPE
Reactor Coolant System	Work Order 339304-005, ID # W-1A and W-4A, Safety relief valve drain line valve BBV0088	Visual
Reactor Coolant System	Work Order 339304-000, ID # W-1B and W-4A, Safety relief valve drain line valve BBV0085	Visual
Main Steam	Work Order 11-344165-005 ID # AB-01-C011, Room 1412 Area 5, Support and hanger	Visual
Main Steam	Work Order 11-344165-005 ID # AB-01-H005, Room 1412 Area 5, Piping Support	Visual

The inspectors reviewed records for the following nondestructive examinations:

SYSTEM	WELD IDENTIFICATION	EXAMINATION TYPE
Reactor Coolant System	Work Order 339304-000, ID # W-2 and W-3A, Safety relief valve drain line valve BBV0085	Visual
Reactor Coolant System	Work Order 339304-005, ID # W-2B and W-3, Safety relief valve drain line valve BBV0088	Visual

During the review and observation of each examination, the inspectors verified that activities were performed in accordance with the American Society of Mechanical Engineers (ASME) Code requirements and applicable procedures. There were no relevant conditions identified for ASME Code Class 1 and 2 systems since the beginning of the last refueling outage. The inspectors also verified that the qualifications of nondestructive examination technicians performing the inspections were current.

The inspector observed the following welding activities:

SYSTEM	WELD IDENTIFICATION	WELD TYPE
Reactor Coolant System	Work Order 339304-000, ID # W-1B and W-4A, Safety relief valve drain line valve BBV0085	Tungsten Inert Gas Welding (GTAW)
Reactor Coolant System	Work Order 339304-005, ID # W-1A and W-4A, Safety relief valve drain line valve BBV0088	Tungsten Inert Gas Welding (GTAW)

Essential Service Water	RHR pump room, ESW room cooler valve replacement. Valve EFV0061, Work Order 11-34018-002, Drawing # M-13EF04, ID # PW-1A and PW-2A	Tungsten Inert Gas Welding (GTAW)
Essential Service Water	RHR pump room, ESW room cooler valve replacement. Valve EFV0062, Work Order 11-34145-000, Drawing # M13EF05. ID # PW-1A and PW-2	Tungsten Inert Gas Welding (GTAW)

The inspectors reviewed records for the following welding activities:

SYSTEM	WELD IDENTIFICATION	WELD TYPE
Reactor Coolant System	Report # Work Order 339304-000, ID # W-2 and W-3A, Safety relief valve drain line valve BBV0085	Tungsten Inert Gas Welding (GTAW)
Reactor Coolant System	Report # Work Order 339304-005, ID # W-2B and W-3, Safety relief valve drain line valve BBV0088	Tungsten Inert Gas Welding (GTAW)

The inspectors verified, by review, that the welding procedure specifications and the welder had been properly qualified in accordance with ASME Code, Section IX, requirements. The inspectors also verified, through observation and record review, that essential variables for the welding process were identified, recorded in the procedure qualification record, and formed the bases for qualification of the welding procedure specifications. Specific documents reviewed during this inspection are listed in the attachment.

These actions constitute completion of the requirements for Section 02.01.

b. Findings

No findings were identified.

.2 Pressurized-Water Reactor Vessel Upper Head Penetration Inspection Activities (71111.08-02.02)

a. Inspection Scope

During Wolf Creek Refueling Outage 19, a visual examination (VT-2) of the reactor pressure vessel head was performed. The examination was in accordance with Code Case N-729-1, Table 1, Item B4.20.

Also, during the refueling outage, ultrasonic examinations of all seventy-eight control rod drive mechanism penetration nozzles, and the eddy current examination of the vent line in the reactor vessel head, was completed. No indications of primary water stress corrosion cracking were identified. A number of thermal sleeves were found to have wear extending up to as much as 360 degrees around the thermal sleeve where the thermal sleeve exits the bottom end of the control rod drive mechanism head adapter tube. Wear was found in rodded and unrodded penetration locations. The wear was attributed by the licensee to the thermal sleeve contacting the inside diameter of the control rod drive mechanism head adapter tube due to a flow-induced impact/whirling motion of the thermal sleeve. The sleeve-to-adapter contact resulted in wear of material on the outside diameter of the thermal sleeves.

The licensee informed the inspectors that no immediate remedial action was required. The inspectors reviewed the licensee's evaluation, analysis, and calculations and concurred with their conclusions. The unrodded thermal sleeves in penetration locations 62 and 63 will need follow-up inspection and/or replacement. From the outer diameter wear results, the sleeve in location 62 has a predicted life of three inspection cycles, and the sleeve in location 63 has a predicted life of two inspection cycles. Therefore, the licensee recommended that these two sleeves be inspected during future refueling outages for emergent wear.

These actions constitute completion of the requirements for Section 02.02.

b. Findings

No findings were identified.

.3 Boric Acid Corrosion Control Inspection Activities (Pressurized-Water Reactors) (71111.08-02.03)

a. Inspection Scope

The inspectors evaluated the implementation of the licensee's boric acid corrosion control program for monitoring degradation of those systems that could be adversely affected by boric acid corrosion. The inspectors participated in containment walkdowns for identifying locations of boric acid leakage, and reviewed the documentation associated with the licensee's boric acid corrosion control walkdowns as specified in Procedures STN PE-040D and AI 16F-002. The inspectors also reviewed the visual records of the components and equipment. The inspectors verified that the visual inspections emphasized locations where boric acid leaks could cause degradation of safety-significant components. The inspectors also verified that the engineering evaluations for those components, where boric acid was identified, gave assurance that the ASME Code wall thickness limits were properly maintained. The inspectors confirmed that the corrective actions performed for evidence of boric acid leaks were consistent with requirements of the ASME Code. Specific documents reviewed during this inspection are listed in the attachment.

These actions constitute completion of the requirements for Section 02.03.

b. Findings

.1 Failure to Follow Station Procedures.

Introduction. The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for failure to follow procedures to accurately identify, characterize, and resolve boric acid leaks. Specifically, the licensee failed to recognize discrepancies between boric acid control procedures and failed to follow boric acid program procedures. Specifically, the licensee failed to: (1) resolve discrepancies within the boric acid corrosion control program procedure; (2) resolve discrepancies between the boric acid corrosion control program procedure and the boric acid leak management procedure; and (3) failed to track and resolve leakage for locations where health physics had installed drip catch containments, to review the Health Physics Drip Bag Log as part of the quarterly outside containment walkdown, and to add component locations to the program. Additionally, the licensee failed to periodically assess the effectiveness of the program on a refueling frequency.

Description. The inspectors reviewed station procedures AP 16F-001, "Boric Acid Corrosion Control Program," and AI 16F-002, "Boric Acid Leakage Management." In Procedure AP 16F-001, Attachment A, Section A.1, the least severe leakage where dry boron residue is present is titled, "Non-active Leak," and also classifies leaks into four categories of severity (Non-Active, Small, Medium, and Large). In Section A.3, however, the least severe leakage is titled, "Inactive Leak." In Procedure AI 16F-002, Attachment A.1, there are five levels of leakage severity (Non-active, Detectable, Small, Medium, and Large). This procedure also directs screening/evaluation of boric acid leakage deficiencies be completed per AI 16F-001, "Evaluation of Boric Acid Leakage" (Steps 6.1.1.3, 6.1.2.3). However, the flowchart on Figure 1 references screening/evaluation per AP 22A-001, "Screening, Prioritization, and Pre-Approval," Revision 15. The inspectors concluded that these procedures provided inconsistent guidance that affected the licensee's ability to properly classify and evaluate boric acid leaks.

In Procedure AI 16F-002, Steps 5.2.5 and 6.1.5, require the program owner to track and resolve leakage for locations where health physics had installed drip catch containments, to review the Health Physics Drip Bag Log as part of the quarterly outside containment walkdown, and to add component locations to the program. However, the inspectors noted that consolidation of the health physics log into the Leak Management program was not regularly completed or documented.

Additionally, steps 6.4.5 and 6.4.6 require the boric acid corrosion control program owner to periodically assess the effectiveness of the program on a refueling frequency, including actual performance versus program goals, recommendations for improvement, summary of inspections/activities performed since last assessment, and a benchmarking activity once per fuel cycle. However, the inspectors noted that self-assessments were only completed for the quarterly outside containment walkdowns, and without identification of program goals. The inspectors concluded that the licensee was not performing benchmarking and assessment activities as required by their Boric Acid Corrosion Control Program.

The inspectors also noted a problem in the frequency of reevaluating past screenings. Procedure AI 16F-002, Step 6.1.2.3.a. stated that screenings/evaluations for components with current acid leakage/residue should be updated when the screening/evaluation is more than 18 months old. However, the inspectors noted that the station had current acid leakage/residue screenings/evaluations that had not been updated after 18 months to assess if conditions were still bound by previous evaluations.

The inspectors noted that several condition reports indicated boric acid leakage locations that had not been adequately identified or evaluated. Condition Report 38972, initiated on May 9, 2011, indicated boron in the A spent fuel pool cooling pump room sump. Multiple paths of in-leakage were listed as possible contributing causes to this accumulation and the work request was closed without resolution of which path(s) were leaking into the sump. The condition was considered expected and acceptable by station personnel. Condition Report 60942 reported a large amount of boron build up around the packing gland of spent fuel pool cleanup pump B, but noted that the same condition was documented in previous Work Orders 12-356716-000 and Work Request 12-095525. Condition Report 36024, initiated on March 29, 2011, reported a leak in the refuel pool. The condition report listed the leak as low significance and not expected to challenge the function of the refuel pool level limit. The refueling pool was considered operable but degraded, and the condition report stated that leakage from the refueling pool had been identified in the past, but the source of leakage was never identified or evaluated.

The violation was entered into the licensee's corrective action program as Condition Report 65212.

Analysis. The inspectors determined that the failure to recognize discrepancies between different boric acid control procedures, and the failure to follow boric acid program procedures was a performance deficiency. The performance deficiency was more than minor because it affected the Initiating Events Cornerstone attribute of procedure quality and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenged critical safety functions during shutdown as well as power operations, and if left uncorrected, the performance deficiency had the potential to lead to a more significant safety concern. Specifically, failure to resolve discrepancies within procedures or track and resolve leak locations where health physics had installed drip catch containments had the potential to mischaracterize leaks or allow leaks to corrode safety-related systems. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings At-Power," the finding was determined to be of very low safety significance (Green), because the finding was a procedure quality problem that did not represent a loss of system safety function, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The finding had a cross-cutting aspect in the area of human performance associated with the work practices component because the licensee failed to ensure supervisory and management oversight of work activities, including procedure appropriateness and compliance, such that nuclear safety is supported [H.4(c)].

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states, in part, "activities affecting quality shall be prescribed by procedures of a type appropriate to the circumstance and accomplished in accordance with these procedures." Contrary to the above, the licensee failed to prescribe activities affecting quality by procedures of a type appropriate to the circumstance, and failed to accomplish activities affecting quality in accordance with procedures. Specifically, the licensee failed to recognize discrepancies between boric acid control procedures and failed to follow boric acid program procedures Specifically, prior to February 19, 2013, the licensee failed to: (1) resolve discrepancies within the boric acid corrosion control program procedure; (2) resolve discrepancies between the boric acid corrosion control program procedure and the boric acid leak management procedure; and (3) failed to track and resolve leakage for locations where health physics had installed drip catch containments, to review the Health Physics Drip Bag Log as part of the quarterly outside containment walkdown, and to add component locations to the program. Further, the licensee had failed to periodically assess the effectiveness of the program on a refueling frequency. Because this finding was of very low safety significance, it was treated as a Green non-cited violation in accordance with Section 2.3.2 of the NRC Enforcement Policy. The violation was entered into the licensee's corrective action program as Condition Report 65212: NCV 05000482/2013003-01, "Failure to Follow Station Procedures."

.2 Failure to Identify Leakage at Refueling Pool Cavity.

Introduction. The inspectors identified Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for failure to assure that conditions adverse to quality are promptly identified and corrected. Contrary to the above, the licensee failed to identify and evaluate a condition adverse to quality in a timely manner. Specifically, the licensee failed to document the large area of boric acid leakage and corroded steel plates on the south primary shield wall of the containment refueling pool.

Description. During a boric acid walkdown on February 19, 2013, accompanied by the licensee's program owner, the NRC inspector noted a large area on the backside of the refueling pool where residue existed around the perimeter of several steel plate imbedments on two concrete walls and the ceiling that had not been previously identified by the licensee. The residue had the appearance of a boric acid leak, and one of the corners of the plates had noticeable corrosion. Procedure AP 16F-001, "Boric Acid Corrosion Control Program," Revision 6B, Step 6.2.1 stated, "Sources of boron seepage/leakage identified by plant personnel per 6.1.1 shall have the following actions taken as applicable…". The large area found on the exterior walls of the refuel cavity, along with the corroded metal, were reasonable indications that a leak had been occurring for a considerable amount of time, and should have been noted by station personnel, as the area was easily accessible and traveled by personnel during refueling outages. The licensee sent a sample of the residue off site to be analyzed. The results of the sample identified the residue as boric acid. The licensee concluded that the boric acid residue was the result of leakage from the containment refueling pool with migration through the primary shield wall concrete via construction joints and cracks.

This finding was entered into the licensee's corrective action program as Condition Report 64213.

Analysis. The inspectors determined that the failure to promptly identify and evaluate the condition adverse to quality was a performance deficiency. The performance deficiency was more than minor because it affected the Initiating Events Cornerstone attribute of human performance and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations and, if left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern. Specifically, failure to implement corrective actions could result in increased leakage and further degradation of the safety system. The finding has a cross-cutting aspect in the area of human performance associated with the work practices component because the licensee failed to define and effectively communicate expectations regarding procedural compliance and that personnel follow procedures [H.4(b)].

Enforcement. The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," which states, in part, "Measures shall be established to assure that conditions adverse to quality are promptly identified and corrected." Contrary to the above, the licensee failed to assure that conditions adverse to quality were promptly identified and corrected. Specifically, prior to February 19, 2013, the licensee failed to document the large area of boric acid leakage and corroded steel plates on the south primary shield wall of the containment refuel pool. Because this finding was of very low safety significance, it was treated as a Green noncited violation in accordance with Section 2.3.2 of the NRC Enforcement Policy. This finding was entered into the licensee's corrective action program as Condition Report 64213: NCV 05000482/2013003-02, "Failure to Identify Leakage at Refuel Pool Cavity."

.3 Steam Generator Tube Inspection Activities (71111.08-02.04)

a. Inspection Scope

The inspectors reviewed the licensee's in-situ pressure testing screening criteria for flawed steam generator tubes to verify that it was in accordance with the EPRI Guidelines. The inspectors also reviewed the steam generator tube eddy current examination scope and expansion criteria to determine verify that these meet technical specification requirements. Also reviewed was the licensee's inspection of the secondary side of the steam generators, and review of the licensee's corrective action taken in response to any observed degradation. The licensee did repairs on select tubes (e.g., installed plugs or sleeves), and the inspectors observed a portion of these repairs. The inspector observed the licensee's vendor to determine if the equipment was qualified for detection and/or sizing of the expected types of tube degradation. The inspectors observed the licensee's vendor performing analysis of the steam generator tubes to determine if proper eddy current testing analysis techniques were applied.

Wolf Creek is a four-loop plant with Model F steam generators. Each steam generator includes nominally 5626 tubes made of Alloy 600 thermally treated (A600TI) material. Wolf Creek had implemented an inspection plan in the past which had exceeded industry inspection requirements. Prior to Refueling Outage 18, the inspection scope was 100 percent in two steam generators each outage. The plan was changed to a sampling inspection in all four steam generators each outage in accordance with the results of the economic model (Letter SGMP-11-27, "Justification of Change to Inspection Plan for Wolf Creek," dated March 21, 2011).

The primary side inspection scope performed in all four steam generators for the current outage (Refuel Outage 19) included the following:

- 25 percent bobbin examination of tubes in all four steam generators
- 25 percent hot leg rotating pancake coil tube sheet +3"/-15.21"
- Cold leg peripheral tubes, tube sheet cold ± 3" 100 percent of peripheral tubes
- +Point examination of all "1-code" indications that are not resolved after history review
- +Point inspection to bound (all surrounding tubes, at least 1 pitch removed) the tubes with possible loose part signals during the current inspection
- +Point inspection of possible loose part signals from the previous inspection as specified in Section 3.5
- 25 percent Row 1 and Row 2 U-bends, mid-range +Point examination
- Dents (structures) >5 volts: Inspect 50 percent in steam generator band C, and 25 percent in steam generators A and D of all previously identified and all new dents >5 volts in the hot leg (including the U-bends) with the mid-range +Point probe in all four steam generators
- Dings (free-span) >5 volts: Inspect 25 percent of all previously identified and all new dings >5 volts in the hot leg (including the U-bends) with the mid-range +Point probe in all four steam generators. A "new" ding is defined as one for which there is no prior historical record
- 100 percent bobbin inspection of all prior indications except dents and dings
- +Point examination of a 5 percent sample of bobbin indications that have not changed since the prior inspection ("H" and "S" codes)
- +Point inspection of the sample of tubes to support the scale profiling effort

- I00 percent bobbin inspection of tubes identified as potentially having high residual stress

- 100 percent bobbin inspection of active tubes surrounding previously plugged tubes

- Visual inspections of all plugs, including factory installed plugs, or their replacements

- Inspection of potentially deleterious foreign objects (2 tubes)

During the inspection of the hot leg tube sheet expansion zone, a circumferential primary water stress corrosion crack indication was detected in steam generator B. Due to this indication, detected at row 17, column 89, tube sheet hot -6.26 inches, the hot leg rotating pancake coil tube sheet inspection (+3" / -15.21") examination scope was expanded to 100 percent of tubes in steam generator B with bulge or overexpansion signals. In addition, the examination scope was confirmed to include at least 20 percent of tubes in the three other steam generators with bulge or overexpansion signals. No additional indications were detected. The maximum measured depth of the circumferential primary water stress corrosion cracking indication in steam generator B at row 17, column 89, was well below the condition monitoring limit; therefore, the requirements for condition monitoring were satisfied. The tube was plugged and because the indication is 6.26 inches inside the tube sheet, there is no concern with lateral movement if the indication grows to result in tube severance. Because the tube is unpressurized, there is no pull-out force to cause vertical motion. Therefore, there was no need to stabilize the tube.

As a result of the eddy current inspection, sixteen tubes were plugged during Refueling Outage 19. Five tubes in steam generator A, four tubes in steam generator B, two tubes in steam generator C, and five tubes in steam generator D.

These actions constitute completion of the requirements for Section 02.04.

b. Findings

No findings were identified.

.4 Identification and Resolution of Problems (71111.08-02.05)

a. Inspection Scope

The inspectors reviewed 36 condition reports which dealt with inservice inspection activities. For the majority of the condition reports, the corrective actions identified for inservice inspection issues were appropriate. As noted in Section 1R08.3.b.2, the licensee had missed some opportunities to comply with existing procedures in their corrective action program. The issue identified in Section 1R08.3.b.2 was a condition adverse to quality that the licensee failed to identify, therefore the concern of a boric acid leak was never entered into their corrective action program.

The inspectors had another observation of the licensee's corrective action program, where the licensee failed to properly evaluate industry generated operating experience. In January 2012, the licensee received Westinghouse Nuclear Safety Advisory Letter 12-1 (NSAL-12-1), pertaining to Steam Generator Channel Head Degradation. In January 2012, the licensee wrote Condition Report 00048149, referencing the information in the Westinghouse Advisory Letter. Condition Report 00048149 stated that the information "is applicable to our steam generators; however, it is not an immediate concern. Wolf Creek has been performing visual inspections of our steam generator channel heads for many years. Most recently, the channel heads in all four steam generators were inspected during RF18 with no anomalies identified." The licensee indicated that the information would be incorporated as enhancements into work packages and procedures. On February 22, 2013, during the current Refueling Outage RF19, a visual inspection of steam generator A hot leg resulted in the licensee identifying a rust-colored stain at the divider plate to channel head weld, towards the channel head side of the weld. The stain was identified approximately six inches down from the tube sheet. Following identification of the potential cladding degradation, ultrasonic testing was attempted of the area from outside the steam generator primary bowl. The first attempt was unsuccessful utilizing a straight beam ultrasonic testing probe due to interferences with the steam generator support beam. Subsequently, a 60-degree L Wave ultrasonic test probe was utilized to characterize the area. The results from the ultrasonic testing identified the flaw to be approximately 0.1 inch deep by approximately 2 inches long. No width could be obtained. The licensee classified the steam generator as degraded but operable, and planned to perform further evaluation during the next scheduled refueling outage.

Following the examination, the inspectors questioned the licensee's results, conclusions, and future plans. From this discussion, the inspectors identified that the licensee was not in compliance with the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code. On February 28 and March 11, 2013, conference calls were held with the NRC, the licensee, and Westinghouse, to discuss the issue of the rusted area, the inspection techniques used to evaluate the flaw, and the licensee's conclusions. Following the initial conference call, the flaw at the edge of the divider plate-to-channel head weld in steam generator A was evaluated by Wolf Creek Nuclear Operating Corporation and Westinghouse, in accordance with Section XI, Paragraph IWB-3510.1 and Table IWB-351 0-1, of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (ASME Code). The flaw was characterized as a planar flaw. The licensee will perform a detailed fracture mechanics and fatigue growth analysis of the flaw during the next operating cycle, in accordance with Section XI of the ASME Code. The licensee will re-inspect this area during the next refueling outage to determine the flaw growth rate.

The inspectors also questioned the licensee about historical documentation supporting the licensee's response that no anomalies had been identified during previous visual inspections of the steam generators. The licensee performed a historical review of visual inspections performed on steam generator A bowl that were on digital video discs and noted that the rust spot was not visible in RF018, but was visible in RF017 and

RF015. Steam generator A had not been inspected during RF016. Also, the rust spot was visible in both the RF011 and RF07 video recordings. The RF07 (1994) video is the earliest video recording of this area. The inspectors concluded that the licensee had information available for review that should have been evaluated when responding to Condition Report 00048149. The licensee had not utilized information identified in NRC Inspection Manual Part 9900, Technical Guidance, such as examinations of records, inservice testing and inspection programs, maintenance activities, operational event reviews, operational experience reports, vendor reviews, or inspections, in their response to Condition Report 00048149.

b. Findings

No findings were identified.

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

.1 Quarterly Review of Licensed Operator Requalification Program

a. Inspection Scope

On June 11, 2013, the inspectors observed a crew of licensed operators in the plant's simulator during requalification training for steam generator tube rupture methodology changes. The inspectors assessed the following areas:

- Licensed operator performance
- The ability of the licensee to administer the evaluations
- The modeling and performance of the control room simulator
- The quality of post-scenario critiques
- Follow-up actions taken by the licensee for identified discrepancies

On June 11, 2013, the inspectors observed a crew of licensed operators in the plant's simulator during requalification training for inadvertent safety injection actuation. The inspectors assessed the following areas:

- Licensed operator performance
- The ability of the licensee to administer the evaluations
- The modeling and performance of the control room simulator
- The quality of post-scenario critiques
- Follow-up actions taken by the licensee for identified discrepancies

These activities constitute completion of two quarterly licensed operator requalification program samples as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

.2 Quarterly Observation of Licensed Operator Performance

a. Inspection Scope

On April 29, 2013, 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 due to a unit power reduction in support of emergent work. The inspectors observed the operators' performance of the following activities:

- Primary reactivity changes: control rod manipulations and borations
- Secondary load changes: automatic load set changes
- Swap-over from main feed regulating valves to bypass feed regulating valves
- Swap over of plant electrical loads from unit auxiliary transformer to the start-up transformer

In addition, the inspectors assessed the operators' adherence to plant procedures, including AP 21-001, "Conduct of Operations," 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.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors evaluated degraded performance issues involving the following risk significant systems:

- Post accident monitoring equipment (Regulatory Guide 1.97) – condition report 67570
- Stator cooling water system – Condition Reports 68393 and 68596
- Watertight pressure doors – Condition Report 65884
- High energy line break doors – Condition Report 66874

The inspectors reviewed events such as where ineffective equipment maintenance has resulted in valid or invalid automatic actuations of engineered safeguards systems and independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- Implementing appropriate work practices
- Identifying and addressing common cause failures
- Scoping of systems in accordance with 10 CFR 50.65(b)
- Characterizing system reliability issues for performance monitoring
- Charging unavailability for performance monitoring
- Trending key parameters for condition monitoring
- Ensuring proper classification in accordance with 10 CFR 50.65(a)(1) or -(a)(2)
- Verifying appropriate performance criteria for structures, systems, and components classified as having an adequate demonstration of performance through preventive maintenance, as described in 10 CFR 50.65(a)(2), or as requiring the establishment of appropriate and adequate goals and corrective actions for systems classified as not having adequate performance, as described in 10 CFR 50.65(a)(1)

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the corrective action program with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of four quarterly maintenance effectiveness samples as defined in Inspection Procedure 71111.12-05.

b. Findings

No findings were identified.

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

a. Inspection Scope

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

- April 7, 2013, weekly risk assessment 13-202
- April 29, 2013, stator cooling water leak forced outage

- May 23, 2013, emergency diesel generator A fuel oil transfer pump emergent work

- June 19, 2013, weekly risk assessment revision for Class 1E air conditioning unit replacement

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

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

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed the following assessments:

- April 17, 2013, safety injection pumps A & B run with suction valves closed

- May 29, 2013, turbine-driven auxiliary feedwater steam control positioner failure and replacement

- June 24, 2013, Class 1E air conditioning unit air flow calculation revision

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

These activities constitute completion of three operability evaluations inspection samples as defined in Inspection Procedure 71111.15-05.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

.1 Permanent Modifications

a. Inspection Scope

The inspectors reviewed key affected parameters associated with energy needs, materials, replacement components, timing, heat removal, control signals, equipment protection from hazards, operations, flow paths, pressure boundary, ventilation boundary, structural, process medium properties, licensing basis, and failure modes for the permanent modifications listed below.

- Installation of station blackout diesel generators
- Reactor coolant pump passive thermal shutdown seal modification
- Turbine driven auxiliary feedwater pump governor control modification

The inspectors verified that modification preparation, staging, and implementation did not impair emergency/abnormal operating procedure actions, key safety functions, or operator response to loss of key safety functions; post modification testing will maintain the plant in a safe configuration during testing by verifying that unintended system interactions will not occur; systems, structures and components' performance characteristics still meet the design basis; the modification design assumptions were appropriate; the modification test acceptance criteria will be met; and licensee personnel identified and implemented appropriate corrective actions associated with permanent plant modifications. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of three samples for permanent plant modifications, as defined in Inspection Procedure 71111.18-05.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

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

- May 28, 2013, turbine-driven auxiliary feedwater steam control positioner replacement
- June 21, 2013, Class 1E air conditioning unit compressor replacement
- June 22, 2013, spent fuel pool heat exchanger tube plugging
- June 26, 2013, motor-driven auxiliary feedwater pump A suction pressure transmitter replacement
- June 26, 2013, motor-driven auxiliary feedwater pump A room cooler leak test

The inspectors selected these activities based upon the structure, system, or component's ability to affect risk. The inspectors evaluated these activities for the following (as applicable):

- The effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed
- Acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate

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

These activities constitute completion of five post-maintenance testing inspection samples as defined in Inspection Procedure 71111.19-05.

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20)

.1 Refueling Outage

a. Inspection Scope

The inspectors reviewed the outage safety plan and contingency plans for the refueling outage already in progress at the beginning of this inspection period. Inspection activities covered in this report were conducted March 1-April 16, 2013, to confirm that licensee personnel had appropriately considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense in depth. During the refueling outage, the inspectors monitored licensee controls over the outage activities listed below.

- Configuration management, including maintenance of defense in depth, is commensurate with the outage safety plan for key safety functions and compliance with the applicable technical specifications when taking equipment out of service

- Clearance activities, including confirmation that tags were properly hung and equipment appropriately configured to safely support the work or testing

- Installation and configuration of reactor coolant pressure, level, and temperature instruments to provide accurate indication, accounting for instrument error

- Status and configuration of electrical systems to ensure that technical specifications and outage safety-plan requirements were met, and controls over switchyard activities

- Monitoring of decay heat removal processes, systems, and components

- Verification that outage work was not impacting the ability of the operators to operate the spent fuel pool cooling system

- Reactor water inventory controls, including flow paths, configurations, and alternative means for inventory addition, and controls to prevent inventory loss

- Controls over activities that could affect reactivity

- Maintenance of secondary containment as required by the technical specifications

- Refueling activities, including fuel handling and sipping to detect fuel assembly leakage

- Startup and ascension to full power operation, tracking of startup prerequisites, walkdown of the drywell (primary containment) to verify that debris had not been left which could block emergency core cooling system suction strainers, and reactor physics testing

- Licensee identification and resolution of problems related to refueling outage activities

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

These activities constitute completion of one refueling outage and other outage inspection sample as defined in Inspection Procedure 71111.20-05.

b. Findings

No findings were identified.

.2 Forced Outage

a. Inspection Scope

The inspectors reviewed the outage safety plan and contingency plans for the forced outage to repair the Class 1E air conditioning unit A, conducted May 5-13, 2013, to confirm that licensee personnel had appropriately considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense in depth. During the forced outage, the inspectors observed portions of the shutdown and cooldown processes and monitored licensee controls over the outage activities listed below.

- Configuration management, including maintenance of defense in depth, is commensurate with the outage safety plan for key safety functions and compliance with the applicable technical specifications when taking equipment out of service

- Clearance activities, including confirmation that tags were properly hung and equipment appropriately configured to safely support the work or testing

- Licensee identification and resolution of problems related to forced outage activities

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

These activities constitute completion of one refueling outage and other outage inspection sample as defined in Inspection Procedure 71111.20-05.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the Updated Safety Analysis Report, procedure requirements, and technical specifications to ensure that the surveillance activities listed below demonstrated that the systems, structures, and/or components tested were capable of performing their intended safety functions. The inspectors either witnessed or reviewed test data to verify that the significant surveillance test attributes were adequate to address the following:

- Preconditioning
- Evaluation of testing impact on the plant
- Acceptance criteria
- Test equipment
- Procedures
- Jumper/lifted lead controls
- Test data
- Testing frequency and method demonstrated technical specification operability
- Test equipment removal
- Restoration of plant systems
- Fulfillment of ASME Code requirements
- Updating of performance indicator data
- Engineering evaluations, root causes, and bases for returning tested systems, structures, and components not meeting the test acceptance criteria were correct
- Reference setting data
- Annunciators and alarms setpoints

The inspectors also verified that licensee personnel identified and implemented any needed corrective actions associated with the surveillance testing.

- April 3, 2013, integrated diesel generator and safeguards actuation test train A

- April 4, 2013, integrated diesel generator and safeguards actuation test train B
- April 24, 2013, manual start, synchronization, and loading of emergency diesel generator A
- May 15, 2013, turbine-driven auxiliary feedwater pump curve determination (inservice test)
- June 3, 2013, channel operational test of Tavg, ΔT, and pressurizer pressure protection set one
- June 5, 2013, turbine-driven auxiliary feedwater system inservice valve test (inservice test)
- June 5, 2013, turbine-driven auxiliary feedwater pump steam isolation inservice valve test (inservice test)

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

These activities constitute completion of seven surveillance testing inspection samples as defined in Inspection Procedure 71111.22-05.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstones: Public Radiation Safety and Occupational Radiation Safety

2RS2 Occupational ALARA Planning and Controls (71124.02)

a. Inspection Scope

This area was inspected to assess performance with respect to maintaining occupational individual and collective radiation exposures as low as is reasonably achievable (ALARA). The inspectors used the requirements in 10 CFR Part 20, the technical specifications, and the licensee's procedures required by technical specifications as criteria for determining compliance. During the inspection, the inspectors interviewed licensee personnel and reviewed the following items:

- Site-specific ALARA procedures and collective exposure history, including the current 3-year rolling average, site-specific trends in collective exposures, and source-term measurements
- ALARA work activity evaluations/post-job reviews, exposure estimates, and exposure mitigation requirements

- The methodology for estimating work activity exposures, the intended dose outcome, the accuracy of dose rate and man-hour estimates, and intended versus actual work activity doses and the reasons for any inconsistencies

- Records detailing the historical trends and current status of tracked plant source terms and contingency plans for expected changes in the source term due to changes in plant fuel performance issues or changes in plant primary chemistry

- Radiation worker and radiation protection technician performance during work activities in radiation areas, airborne radioactivity areas, or high radiation areas

- Audits, self-assessments, and corrective action documents related to ALARA planning and controls since the last inspection

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

These activities constitute completion of the one required sample as defined in Inspection Procedure 71124.02-05.

b. Findings

No findings were identified.

2RS4 Occupational Dose Assessment (71124.04)

a. Inspection Scope

This area was inspected to: (1) determine the accuracy and operability of personal monitoring equipment; (2) determine the accuracy and effectiveness of the licensee’s methods for determining total effective dose equivalent; and (3) ensure occupational dose is appropriately monitored. The inspectors used the requirements in 10 CFR Part 20, the technical specifications, and the licensee’s procedures required by technical specifications as criteria for determining compliance. During the inspection, the inspectors interviewed licensee personnel, performed walkdowns of various portions of the plant, and reviewed the following items:

- External dosimetry accreditation, storage, issue, use, and processing of active and passive dosimeters

- The technical competency and adequacy of the licensee’s internal dosimetry program

- Adequacy of the dosimetry program for special dosimetry situations such as declared pregnant workers, multiple dosimetry placement, and neutron dose assessment

- Audits, self-assessments, and corrective action documents related to dose assessment since the last inspection

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

These activities constitute completion of the one required sample as defined in Inspection Procedure 71124.04-05.

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 Data Submission Issue

a. Inspection Scope

The inspectors performed a review of the performance indicator data submitted by the licensee for the first quarter 2013 performance indicators for any obvious inconsistencies prior to its public release in accordance with Inspection Manual Chapter 0608, "Performance Indicator Program."

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

b. Findings

No findings were identified.

.2 Reactor Coolant System Specific Activity (BI01)

a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system specific activity performance indicator for the period from the second quarter 2012 through the first quarter 2013. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's reactor coolant system chemistry samples, technical specification requirements, issue reports, event reports, and NRC integrated inspection reports for the period of April 2012 through March 2013 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. In addition to record reviews, the inspectors observed a chemistry technician obtain and analyze a reactor coolant system sample. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one reactor coolant system specific activity sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.3 Reactor Coolant System Leakage (BI02)

a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system leakage performance indicator for the period from the second quarter 2012 through the first quarter 2013. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, “Regulatory Assessment Performance Indicator Guideline,” Revision 6. The inspectors reviewed the licensee’s operator logs, reactor coolant system leakage tracking data, issue reports, event reports, and NRC integrated inspection reports for the period of April 2012 through March 2013 to validate the accuracy of the submittals. The inspectors also reviewed the licensee’s issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one reactor coolant system leakage sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

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

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure, they were considered an integral part of the inspections performed during the quarter and documented in Section 1 of this report.

b. Findings

No findings were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

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

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

b. Findings

No findings were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors focused their review on repetitive equipment issues, but also considered the results of daily corrective action item screening discussed in Section 4OA2.2, above, licensee trending efforts, and licensee human performance results. The inspectors nominally considered the 6-month period of October 2012 through March 2013; although, some examples expanded beyond those dates where the scope of the trend warranted.

The inspectors also included issues documented outside the normal corrective action program in major equipment problem lists, repetitive and/or rework maintenance lists, departmental problem/challenges lists, system health reports, quality assurance audit/surveillance reports, self-assessment reports, and Maintenance Rule assessments. The inspectors compared and contrasted their results with the results contained in the licensee's corrective action program trending reports. Corrective actions associated with a sample of the issues identified in the licensee's trending reports were reviewed for adequacy.

These activities constitute completion of one single semi-annual trend inspection sample as defined in Inspection Procedure 71152-05.

b. Findings

No findings were identified.

.4 Selected Issue Follow-up Inspection: Over-torquing Events

a. Inspection Scope

The inspectors recognized a potential trend in over-torquing events at Wolf Creek. The inspectors observed two events: broken support screws on a Class 1E air conditioning terminal box as well as over-torquing of the bonnet studs on a safety injection system check valve. The inspectors reviewed the causes identified and actions taken for each event. The inspectors also reviewed a previous finding written for over torque of the essential service water strainer cover to stop leakage without consulting the design bases of the materials and protective coatings. The inspectors performed a search of the licensee's corrective action database and identified three additional potential over-torquing events within the last four years. The inspectors presented the events to the licensee. The licensee wrote Condition Report 65799 to perform a basic trend analysis. The inspectors reviewed the basic trend analysis.

These activities constitute completion of one in-depth problem identification and resolution sample as defined in Inspection Procedure 71152-05.

b. Findings

No findings were identified.

.5 Selected Issue Follow-up Inspection: Return to Full Qualification Fuel Cycle Carryover

a. Inspection Scope

During a review of items entered in the licensee's corrective action program, the inspectors recognized a corrective action item documenting the status of all open operable/functional but degraded/non-conforming conditions that were being re-evaluated at the end of the refueling outage to determine their suitability for deferral through fuel cycle 20. All open degraded and non-conforming conditions must be re-evaluated if they are not corrected during the next reasonable opportunity, such as a refueling or mid-cycle outage, to ensure that the condition will meet all requirements for safe operation until the next available opportunity to correct the condition.

These activities constitute completion of one in-depth problem identification and resolution sample as defined in Inspection Procedure 71152-05.

b. Findings

No findings were identified.

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

.1 (Closed) Licensee Event Report 05000482/2011-008-00: Post-Fire Safe Shutdown Latent Design Issue May Cause Essential Service Water System Flow Imbalance

The inspector performed an in-office evaluation of circuit modification and engineering change package documentation.

On July 20, 2011, during a review of the post fire safe shutdown analysis for valve EFHV0060, "ESW Return from Component Cooling Water Heat Exchanger," the licensee identified a condition where a fire in the control room could cause the valve to open and could be damaged such that the valve could not be manually closed. The direct cause was a latent design deficiency that did not ensure that the valve was isolated and protected from the potential effects of a control room fire. The licensee verified that an hourly fire watch was in place in the control room and ensured the fire watch would remain in place until the issue was resolved.

The licensee generated Engineering Change Package 013898 to modify the control circuit for the valve. This modification rewired the torque and limit switches to ensure they are not bypassed by a potential control room hot short (Information Notice 92-18 concern) and installed an isolation/close switch, EFHS0060, to isolate the control room portion of the circuitry and also to close the valve.

The inspector reviewed the control circuitry modification and engineering change package, and had discussions with the licensee concerning procedure changes that are needed as a result of the modification. The inspector verified that the torque and limit switches would not be bypassed by a hot short in the control room portions of the circuit. The inspector verified that the isolation/close switch effectively isolated the control room portions of the circuit and inserted redundant fuses into the control circuit for the valve.

No findings were identified and no violation of NRC requirements occurred. This LER is closed.

.2 (Closed) Licensee Event Report 2013-003-00: Movement of Irradiated Fuel Progressed After Non-Conservative Decision Making Resulted in Removal of One Source Range Monitor from Service

The licensee reported that fuel movement was delayed past the scheduled completion time due to an equipment problem. Scheduled work on a source range nuclear instrument was begun while still in the refueling operating mode, when both source range monitors were required to be operable. The inspectors screened this event using Inspection Manual Chapter 0612 Appendix B and determined that the performance deficiencies involved were minor,. Because no fuel movement or other reactivity manipulations were in progress during the time this instrument was inoperable. No additional issues were identified. This LER is closed.

.3 (Closed) Licensee Event Report 2013-005-00: Fatigue Failure of Jacket Water Pressure Switch Diaphragm Results in Loss of the B Diesel Generator

a. Inspection Scope

The licensee reported that on March 13, 2013, emergency diesel generator B was rendered inoperable by an equipment failure while emergency diesel generator A was out of service for planned maintenance during a refueling outage. The licensee declared a Notice of Unusual Event in accordance with station procedures until emergency diesel generator B was repaired. The inspectors reviewed the event and the cause evaluation and determined that this event did involve a violation of regulatory requirements. This licensee event report is closed.

b. Findings

Diesel Generator Pressure Switch Failed Due to Instrument Line Pressure Oscillations

Introduction. A self-revealing, Green non-cited violation of 10 CFR Part 50. Appendix B, Criterion XVI, Corrective Action, was identified on March 13, 2013. Specifically, the licensee repeatedly replaced a jacket water pressure transmitter, but failed to correct pressure oscillations that caused a fatigue failure of a pressure switch diaphragm, which rendered emergency diesel generator B inoperable.

Description. On March 13, 2013, the reactor was defueled for a planned refueling outage and the A emergency diesel generator disassembled for planned maintenance. At 1:34 a.m. the control room received the B diesel generator trouble alarm. The local operator found the shutdown relay in the control cabinet had actuated and would not reset. The engine was declared inoperable and Wolf Creek declared a Notice of Unusual Event for having two onsite electrical sources unavailable. Instrumentation and controls technicians troubleshooting the condition determined that the control circuitry was working properly, but a jacket water pressure switch diaphragm had failed and the water that leaked was shorting and grounding the associated electrical switch, causing a false positive signal. This pressure switch was used to indicate that the engine was running, because the system pressure would be generated by an engine-driven pump. This false signal rendered the engine inoperable because the resulting logic state indicated the engine was running with no lube oil pressure, which locked in a protective engine trip, preventing the engine from starting. The pressure switch was repaired and the engine was tested and returned to service on March 14, 2013, at 2:21 a.m., terminating the Notice of Unusual Event. The licensee wrote Condition Report 65624 to correct and identify the cause of this condition. This condition only affects the engine while in standby; if the engine is operating the system would continue to run.

A hardware failure analysis performed on the diaphragm identified that the failure mechanism was low stress, high cycle fatigue. The pressure switch was nearing the end of its specified lifetime; however, there was also a specification for the switch not to exceed 33,000 pressure cycles to avoid diaphragm failure. The licensee was only counting the diesel generator stops and starts as a single pressure cycle. However a review of the machinery history found that a known equipment condition of the jacket water pressure transmitter hunting had been observed since 2002. This condition was inducing pressure oscillations in the shared instrument line every one or two seconds when the engine was running. Furthermore, the magnitude of the oscillations grew as the pressure transmitter hunting conditions worsened over time. The inspectors concluded that the licensee focused on correcting the apparent source of the pressure oscillations, but failed to evaluate the effects of the pressure cycles on components exposed to the same oscillations. The inspectors noted that the transmitter had been replaced 10 times between 2002 and 2012. Since the replacements also eventually exhibited this behavior, the licensee recently determined that is indicative of an underlying design issue, in that the transmitter model was not being used in the intended application. Wolf Creek was planning a system modification address and permanently correct this concern long term, but will be controlled through preventive maintenance in the interim. Wolf Creek also added preventive maintenance activities to monitor the replacement diaphragm and other interfacing components.

This issue was entered into the licensee's corrective action program as Condition Report 65624

The inspectors noted that having both emergency diesel generators inoperable at the same time was permitted by technical specifications at the time of the failure, since the reactor was defueled. Therefore, no required safety function was lost. The inspectors also noted that declaration of a Notice of Unusual Event was inconsistent with having no technical specification requirement to have the function available. Further review noted that Wolf Creek had not adopted industry standard emergency action level guidance, which would not have required an event declaration in these circumstances. The licensee stated that they planned to evaluate adopting the latest guidance.

Analysis. Failure to analyze the effects of pressure oscillations in the emergency diesel jacket water system on interfacing system components is a performance deficiency. The performance deficiency is more than minor because it affected the equipment performance attribute of the Mitigating Systems 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 Appendix A, "Significance Determination Process for Findings At Power", and determined that the finding screens as very low safety significance (Green) because the finding does not meet any criteria outlined in the Exhibit 2, Section A. Specifically, the finding is not a loss of system safety function and did not exceed its technical specification allowed outage time of 72 hours. The inspectors determined that the finding had a cross-cutting aspect in the area of problem identification and resolution evaluations because the licensee failed to ensure that issues that potentially affect nuclear safety are fully evaluated and addressed in a timely manner. In particular, the licensee repeatedly replaced the pressure transmitter ten times between 2002 and 2013, including five times in 2011 and 2012, but failed to evaluate the effect of the pressure oscillations on an affected component with a limited fatigue life [P.1(c)].

Enforcement. Title 10 CFR Part 50. Appendix B, Criterion XVI, "Corrective Action", requires, in part, that "Measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. Contrary to the above, between January 26, 2001, and March 13, 2013, the licensee failed to correct a condition adverse to quality affecting the jacket water system associated with emergency diesel generator B. Specifically, despite repeatedly replacing the pressure transmitter that was believed to be the source of the pressure oscillation, the licensee failed to correct the condition, and as a result, failed to prevent the subsequent fatigue failure of a pressure switch diaphragm that rendered the system inoperable. Because the finding is of very low safety significance and was entered into the licensee's corrective action program as Condition Report 65624, the violation will be treated as a non-cited violation in accordance with Section 2.3.2.a of the NRC enforcement policy.
NCV 05000482/2013003-03, "Diesel Generator Pressure Switch Failed Due to Instrument Line Pressure Oscillations."

.4 Notice of Unusual Event for a Fire Lasting Greater than 15 Minutes on the Auxiliary Boiler Roof

a. Inspection Scope

At 2:55 p.m. on April 11, 2013, the fire brigade was called to muster in response to a confirmed fire in the southeast corner stairway of the turbine building. The inspectors responded to the control room and to the scene of the fire. The fire was put out, but the fire re-flashed underneath the insulation. Operations personnel secured the auxiliary boiler, and the brigade moved onto the turbine building roof where the source of the stairwell fire was identified as the exhaust stack penetration. Suppression was again used, but thermal imaging cameras continued to identify hot spots as the fire re-flashed beneath the stack insulation. Offsite local fire departments responded to the site to assist with and disassembly and suppression activities until 4:48 p.m., when the fire was confirmed to be out.

The cause of the fire was believed to an improper repair to the building roof. When the roof was resealed, the roofers were unable to remove all of the tar and roofing materials around the penetration, and they insulated over it. After approximately 2 months of prolonged auxiliary boiler operation during the spring refueling outage, enough heat had conducted through the stack to ignite the roofing debris. The exhaust stack penetration has since been repaired. The inspectors screened this event using Inspection Manual Chapter 0612 Appendix B and determined that the performance deficiencies involved were not more than minor. All reporting requirements of 10 CFR 50.72 were met. The inspectors assessed this fire brigade response to satisfy the annual brigade sample in Section 1R05.

b. Findings

No findings of significance were identified.

.5 Unplanned Positive Reactivity Transient While Swapping Turbine Operating Modes

a. Inspection Scope

The inspectors reviewed the sequence of events associated with an unplanned power increase that occurred at 9:35 p.m. on May 2, 2013. Control room operators were increasing power coming out a forced outage to repair a stator cooling water leak. With the reactor holding at 79 percent power, operators planned to swap the turbine from full arc steam admission mode (all four steam control valves throttling equally), the mode used for turbine startup, and into the partial arc mode (three control valves fully open, one throttling partially closed) used at full power. During the mode swap, the plant experienced an unexpected power increase of 11 percent.

The inspectors reviewed procedures for reactivity management and reactivity manipulations, as well as operator statements. The inspectors reviewed the cause of the event and corrective actions taken. The inspectors reviewed a recent digital instrumentation and controls modification to the turbine control system implemented in the spring 2013 refueling outage.

b. Findings

.1 Failure to Update Station Procedures and Train Operators Regarding the Effects of Design Changes to the Main Turbine Control System

Introduction. A Green self-revealing non-cited violation of Technical Specification 5.4.1a was identified for the failure to properly update operating procedures and train operators on the effects of a recently installed modification. Specifically, procedures were not adequately revised to provide guidance for operating the new Westinghouse Ovation digital turbine control system. As a result, operators shifted operating modes at a power level that caused an unexpected 11 percent power increase due to the combined characteristics of the steam control valves and the turbine control system. Additionally, operators received training on shifting control modes at low power, where minor transients occurred, but were not restricted from performing the swap at high power levels where the transient could be more significant.

Description. The main turbine controls had been replaced in March 2013 as part of a planned upgrade during a refueling outage. The controls had satisfactorily passed post maintenance testing under Temporary Procedure TMP 12-016 during the refueling outage restart two weeks earlier. During the first plant startup after the modification, operators initiated the control mode swap below 50 percent reactor power. However, on May 2, 2013, following an unplanned outage, the turbine control mode swap was initiated at 76 percent power. As a result, reactor power increased 11 percent power increase from 76 to 87 percent over a period of 5 minutes.

The following morning the licensee contacted the engineers who had prepared the modification as well as the vendor (Westinghouse Ovation). The licensee learned that such a transient was not unexpected under open loop controlling conditions; however, swapping from full to partial arc mode in that condition is not recommended and should be avoided by procedure. Performing the full to partial arc swap in the megawatts electric or steam pressure control modes will not result in a more than minimal (1-2 percent) power transient because there is feedback in the circuit to limit changes in turbine load.

The licensee determined that the mode swap was done in the open loop such that the controller was programmed with the turbine control valve throttling characteristics as a substitute for a system response feedback loop. The licensee confirmed earlier testing that showed the valve characteristics were reasonably accurate below 50 percent power, but were less accurate at higher powers. Since the turbine controller simultaneously changed the position of all control valves, three valves were opening while the fourth valve was to throttle down to compensate for the other three valves. The licensee had demonstrated that the power transient during mode swap below 50 percent power stayed within +/-3 percent of the initial power level, and returned to the original power level. However, starting at 76 percent power, the mode swap resulted in a prolonged power increase.

The inspectors reviewed the procedures and found that Procedure TMP 12-016 "Post Modification Main Turbine Control System Generator Startup and Testing", Revision 7, used for the post installation testing had steps to take the turbine controller out of open loop mode before swapping from full to partial arc or vice versa. There was no caution or warning in the procedure not to perform the swap in open loop mode. However, there was no step, precaution, limitation, or warning in system operating Procedure STS AC-001, "Main Turbine Valve Testing," Revision 7, to remove the controller from open loop prior to swapping modes. Control room operators were not familiar with this potential risk from training either.
The inspectors noted that operator training on the new turbine controller had been conducted below 50 percent power only. Prior to the modification in the spring 2013 refueling outage, the old turbine control system did not allow open loop control to be selected. The inspectors determined that this was a new failure mechanism or vulnerability introduced by the modification and should have been identified in the planning stages and specifically addressed in the close out process specified in Section 6.3.4 of AP 05-005, "Design, Implementation & Configuration Control of Modifications," by adding appropriate steps and cautions to procedure SYS AC-001.

This issue was entered into the licensee's corrective action program as Condition Report 68711.

<u>Analysis</u>. Failure to update station operating procedures to provide adequate guidance for design changes to the turbine control system, and failure to adequately train operators on those design changes, is a performance deficiency. The performance deficiency is more than minor because it affected the design control, procedure quality, and human performance attributes of the Initiating Events cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Using Inspection Manual Chapter 0609 Appendix A, Checklist 1, "Initiating Events Screening Questions," the inspectors determined that the finding was of very low safety significance (Green) because the

finding did not result in a reactor trip coincident with the loss of mitigation equipment. The inspectors determined that this finding had a cross-cutting aspect in the area of human performance area of work control because the licensee did not appropriately communicate and coordinate during activities in which interdepartmental coordination was necessary to assure plant and human performance. Specifically, Wolf Creek did not communicate and coordinate to ensure that procedure guidance and operator training adequately conveyed the operational impacts and limitations associated with shifting turbine control modes at different power levels [H.3(b)].

Enforcement. Technical Specification 5.4.1a requires that programs specified in the Appendix A to Regulatory Guide 1.33, Revision 2, be established, implemented, and maintained. Regulatory Guide 1.33, Appendix A, Section 2.f, includes a general plant operating procedure for changing load and load following. Contrary to the above, from April 13 to May 2, 2013, the licensee failed to maintain a general plant operating procedure for changing load. Specifically, procedure GEN-00-004, "Power Operations," Revision 69, were not updated to provide adequate guidance swapping turbine steam admission configurations following installation of a new turbine control system. Because this finding is of very low safety significance and was entered into the licensee's corrective action program as Condition Report 68711, it is being treated as a non-cited violation in accordance with section 2.3.2.a of the NRC Enforcement Policy: NCV 05000482/2013003-04, "Failure to Update Station Procedures and Train Operators Regarding the Effects of Implemented Design Changes to the Main Turbine Control System."

.2 Failure to Properly Manage Reactivity Changes when Swapping Turbine Steam Admission Modes from Full to Partial Arc

Introduction. Inspectors identified a Green non-cited violation of Technical Specification 5.4.1.a. for the failure to follow Conduct of Operations and Reactivity Management procedures.

Description. The inspectors responded to an unplanned reactor transient that occurred on the night of May 2, 2013. The licensee was increasing power from an unplanned outage to repair a stator cooling water leak. The unexpected power increase occurred while swapping the mode of turbine from full to partial arc steam admission while controlling in the open loop (valve position) mode. This mode swap changes the turbine control valves that throttle steam to go from all four valves equally throttling to three valves fully open and one valve throttling such that all four valve slowly reposition over a period of about 2.5 minutes. The main turbine controls had been replaced in March as part of a planned upgrade during a refueling outage.

During the first plant startup after the modification, operators initiated the control mode swap below 50 percent reactor power. However, on May 2, 2013, the mode swap was initiated at 76 percent power. During the 2.5 minute swap, reactor power increased 11 percent power increase from 76 to 87 percent over a period of about 5 minutes. The power increase caused Tavg to be below the programmed value for Tref, so the control rods stepped out until fully withdrawn. The power increase continued, resulting in a

7 degree Tavg-Tref mismatch as the secondary power demand overcooled the reactor. Primary pressure lowered by 14 psi, and came within 1 psi of the Departure from Nucleate Boiling technical specification limit of 2220 psi.

The inspectors reviewed plant parameter graphs during the period of the transient as well as statements by operators and nuclear engineers in the control room at the time of the transient. The inspectors concluded that operators had conducted a pre-job brief, but had failed to discuss the expected plant response in detail, and failed to discuss contingency actions if the plant response was not as expected. During the transient, operators discussed taking action to terminate the transient, but were unable to determine if there was a way to stop the valve swap once it started. Instead, they attempted to verify that plant parameters did not exceed limits as the transient took its full course.

The inspectors noted that the pre-job brief and operator response was contrary to the reactivity control program. Specifically, operators failed to define the expected plant response and have contingency actions ready in case the plant response was not as expected. Operation of the main turbine controls was a reactivity manipulation as defined in Procedure AP 19E-002, “Reactivity Management Program,” Revision 16.

Following the transient, the inspectors determined that the operators did not adequately investigate the cause of the unexpected system response before continuing with the power increase. The inspectors determined that the shift staffing that night did not include a system expert or vendor representative for the new digital turbine controls to help investigate the system response. After consulting with the reactor engineers and the Operations Manager, operators concluded that the turbine controls were behaving as expected and they had proper control, with the exception of the full to partial arc swap. The inspectors determined that although the hypothesis was later proven to be correct, they did not have adequate technical basis to show that equipment that impacts reactivity was not malfunctioning. No functionality assessment or troubleshooting was performed, and no technical experts were consulted to verify that the turbine control response was understood before making the decision to raise power to 100 percent.

The licensee did not gain a full understanding of the event until their discussions with engineers and the vendor (Westinghouse Ovation) the following morning. Wolf Creek was informed that such a transient was not unexpected under open loop controlling conditions, and should have been procedurally prohibited. The licensee was able to replicate the system response in the plant simulator, both below 50 percent and at 76 percent power. The licensee therefore concluded that the system response was not anomalous, and that continued operation was appropriate.

AP 19E-002 “Reactivity Management Program” Section 6.1.1 details the program:

The Reactivity Management Program is the systematic and philosophical direction given to controlling evolutions with the potential to affect the reactivity and/or integrity of nuclear fuel. This systematic process ensures that:

- All deliberate reactivity changes are planned and conducted in a controlled conservative manner

- Unexpected reactivity changes are minimized

- Conservative actions are taken in response to unexpected reactivity changes

- Reactivity-related modifications, analyses, predictions, and procedures are correct and effectively implemented

Procedure AP 19E-002 “Reactivity Management Program” section 5.6 specified that licensed operator responsibilities as follows:

Licensed Operators are responsible for the implementation of the Reactivity Management Program. They are responsible for control of reactivity and taking conservative actions to safeguard the integrity of the reactor fuel. Licensed operators have the authority to terminate any activity in which the effects on reactivity control are unknown, unexpected, or non-conservative.

Procedure AP 21-001, “Conduct of Operations,” also provides guidance on reactivity management:

- Section 6.1.1.1 states, “The greatest responsibility of all licensed operators is to ensure the reactivity condition of the reactor is monitored and conservatively controlled at all times.”

- Section 6.1.3.1 notes “In cases of unplanned reactivity evolutions, licensed operators must promptly take actions to keep power below 100 percent, stop, evaluate the plant conditions and take the appropriate conservative action. Licensed operators shall not hesitate to reduce power, stabilize the plant, or trip the reactor as necessary to protect the reactor core with concurrence from the Control Room Supervisor.”

Appendix A of this procedure specifies the content of reactivity briefs. The guidance requires a detailed estimated start and stop point for reactor power as well as an expected rate of change. Furthermore, contingency actions are to be determined beforehand if these expectations are not met.

Operator statements and interviews indicate that the anticipated transient was about 1.5 percent, not to exceed 2 percent of rated electric and thermal power. No contingency actions were specified during the brief. The inspectors determined that the lack of this contingency planning contributed to the magnitude of the transient and lack of operator response. For example, by not establishing a limit on the expected plant response (e.g., require action if power increased above the expected 2 percent rise, or failed to return to the starting power level) operators were unsure whether action was needed, and defaulted to the generic Technical Specification limits. As a result, they failed to act, even when the Tavg-Tref mismatch exceeded operational limits, the departure from nucleate boiling pressure limit was closely approached, and control rods were unable to further compensate. The inspectors noted that later guidance from the vendor established that operators could have terminated the power excursion at any time simply by returning turbine steam controller to full arc mode, and thus restoring the hold previously in place.

The inspectors also concluded that the licensees' post-job review of transient lacked the specific information needed to determine whether the turbine control system had behaved as expected or had malfunctioned prior to deciding to proceed with power ascension. In both the pre- and post-job cases, a lack of technical understanding about the proper workings of the turbine controls was not recognized, and although not deliberately, operators did proceed in the face of uncertainty. This issue was entered into the licensee's corrective action program as Condition Report 68711.

This issue was entered into the licensee's corrective action program as Condition Report 68711.

Analysis. Failure to provide contingency actions for a greater than anticipated reactor transient in the pre-job reactivity brief is a performance deficiency. The performance deficiency is more than minor because it affected the human performance attribute of the Initiating Events cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors evaluated the finding using Inspection Manual Chapter 0609 Appendix A, Checklist 1, "Initiating Events Screening Questions," and determined that the finding was of very low safety significance (Green) because the finding did not result in a reactor trip coincident with the loss of mitigation equipment. The inspectors determined that this finding had a cross-cutting aspect in the human performance area of work practices because the licensee failed to communicate human error prevention techniques, such as holding pre-job briefings, self and peer checking commensurate with the risk of the assigned task, such that work activities were performed safely, and personnel do not proceed in the face of uncertainty or unexpected circumstances. Specifically, control room operators' pre-job reactivity brief was not commensurate with the risk of the assigned task, and station personnel proceeded to further raise power in the face of uncertainty about the functionality of the turbine control system [H.4(a)].

Enforcement. Technical Specification 5.4.1.a requires that programs specified in Appendix A to Regulatory Guide 1.33, Revision 2, be established, implemented, and maintained. Regulatory Guide 1.33, Appendix A, Section 1.b includes administrative procedures covering authorities and responsibilities for safe operation and shutdown. Contrary to the above on May 2, 2013, did not fully implement the authorities and responsibilities for safe operation and shutdown. Specifically, operators failed to follow the Procedure AP 21-001, "Conduct of Operations," Revision 61, Appendix Section 1.a. requirement to establish contingency actions in advance to a planned reactivity manipulation, in the event that the reactivity addition should exceed the planned amount. Because this finding is of very low safety significance and was entered into the licensee's corrective action program as Condition Report 68711, it is being treated at a non-cited violation in accordance with section 2.3.2.a of the NRC Enforcement Policy:

NCV 05000482/2013003-05, "Failure to Properly Manage Reactivity Changes when Swapping Turbine Steam Admission Modes from Full to Partial Arc."

.6 Unplanned Shutdown due to Non-Functional Class 1E Air Conditioning Unit

On the evening of May 6, 2013, Wolf Creek station operators observed an increasing trend in the temperature of the train A Class 1E AC and DC switchgear rooms. Troubleshooting identified that a blockage was present in the thermal expansion valves that was restricting refrigerant flow. The air conditioning unit itself was declared non-functional. For systems needed to support the Class 1E AC and DC sources, Wolf Creek was required to enter the applicable multiple technical specifications. Having two inverters inoperable was not covered by a specific action statement, so the licensee appropriately entered Technical Specification 3.0.3, and the unit was shut down to Mode 5 so that the refrigerant system could be cleaned. Wolf Creek also used this outage to replace the compressor in this air conditioning unit and chemically clean the refrigerant system. No findings were identified.

.7 (Open) Notice of Enforcement Discretion (NOED) 13-4-002 for a Non-Functional Class 1E Air Conditioning Unit

On June 17, 2013, an oil sample taken from the train A Class 1E air conditioning unit was found to have unacceptable levels of aluminum particulate, indicating that internal parts were degrading and long term reliability was not assured. The unit was declared non-functional and Wolf Creek again entered Technical Specification 3.0.3 at 11:11 a.m. Wolf Creek requested a NOED that was granted by the NRC staff at 4:07 p.m. The inspectors reviewed the documentation, plant status information, the equipment history, as well as the Inspection Manual Chapter 0410 process. Consistent with NRC policy, the NRC agreed not to enforce compliance with the specific technical specifications in this instance, but will further review the cause(s) that created the apparent need for enforcement discretion to determine whether a violation of NRC requirements existed. This will be tracked under unresolved item (URI) 05000482/2013003-06, "NOED 13-4-002 for a Non-functional Class 1E Air Conditioning Unit."

.8 (Closed) Licensee Event Report 2009-005-01, Loss of Both Diesel Generators with All Fuel in the Spent Fuel Pool

The inspectors reviewed this LER and determined that the changes to the cause had already been presented to and inspected by the 95001 inspection team. The results of this inspection can be found in inspection report 05000482/20130 (ADAMS Accession Number ML13126A197). LER 2009-005-01 is closed.

4OA5 Other Activities

Falsification of Spent Fuel Pool Area Housekeeping Inspection Records

a. Inspection Scope

The inspectors reviewed procedures and records associated with the conduct and completion for housekeeping inspections and foreign material exclusion from important systems. The inspectors interviewed licensee staff, reviewed inspection records, station procedures and security card reader logs.

b. Findings

Introduction. The inspectors identified a Severity Level IV violation of 10 CFR 50.9, "Completeness and Accuracy of Information," for the failure to maintain complete and accurate records required by a license condition. Specifically, the licensee failed to maintain complete and accurate records of the spent fuel pool area housekeeping inspections for the period of October through December 2008, required by License Condition 2.C.5, "Fire Protection."

Description. On January 17, 2009, inspectors identified a non-cited violation of Technical Specification 5.4.1.a, "Procedures," for the failure to follow Procedure AP 12-003, Foreign Material Exclusion, during a walkdown of the spent fuel pool area. During this walkdown, the inspectors identified numerous untracked tools, equipment and duct tape attached to various tools such that duct tape was located above and below the fuel pool water level.

In response to the violation, licensee Quality Assurance personnel conducted a review of the problem that led to the NRC violation. During the review it was identified that the housekeeping inspection reports had not identified the condition in the spent fuel pool area. The licensee reviewed the fuel building card reader logs and determined that the individual assigned to perform the housekeeping inspection in the spent fuel pool area had not entered the area for a period of 3 months. The licensee determined that the individual (a supervisor) had reported the information based on feedback received from others who performed the actual housekeeping observation. Revision 6C of the procedure allowed for a designee to perform the inspection instead of the management assigned individual. The ability to designate another individual to perform the inspection was removed when the procedure was updated in Revision 7 on November 10, 2008, and therefore not allowed when the December 2008 inspection was completed. In response, the licensee revised the procedure again to allow for a qualified designee to perform the inspections in Revision 8, which was issued on September 17, 2009.

NRC inspectors identified that the individual questioned workers who had been in the area about the condition of the housekeeping before signing off on the inspection with no issues during the months of October and November 2008. The individual rationalized that he had met the intent of the inspection, but failed to ask specific questions to ensure that the inspection met the criteria stated in Attachment B, "Building/Area Inspection Checklist." The inspectors also determined that the individuals had not been designated to perform the housekeeping inspection, or even told why they were being asked about the condition of the area. Additionally, the inspectors identified that only one of the people that the individual had questioned had actually entered the spent fuel pool area in the month of October 2008. The person that the individual identified as having been questioning to determine the status of the spent fuel pool area in November 2008, did not access the spent fuel pool area that month. On December 4, 2008, the individual documented the completion of an inspection with no issues in the Housekeeping Inspection Card without questioning any individuals or entering the area. The individual stated he knew work had not been performed in the area since the previous report on November 25, 2008, so he assumed that the condition remained unchanged.

The NRC determined that from October through December 2008, a licensee employee failed to perform inspections of the spent fuel pool area in accordance with Procedure AP 12-001, "Housekeeping Control," and willfully documented false information on the Housekeeping Inspection Cards.

The falsified inspection report was related to a housekeeping inspection procedure that implements housekeeping inspections required by the fire protection program. The Wolf Creek Updated Final Safety Analysis Report describes the fire protection program in Section 9.5-1, and commits to meeting Regulatory Guide 1.39, "Housekeeping Requirements for Water-Cooled Nuclear Power Plants," Revision 2, Appendix 3A, "Conformance to NRC Regulatory Guides." Regulatory Guide 1.39, Revision 2, endorses ANSI Standard N45.2.3-1973, "Housekeeping During the Construction Phase of Nuclear Power Plants," as a method of complying with fire protection program housekeeping requirements. The ANSI Standard requires that periodic inspection and examination of the work areas shall be performed at scheduled intervals to assure adequacy of cleanliness and housekeeping practices, and that copies of inspection and examination records shall be prepared and placed with other project records.

Analysis. The failure to maintain records required by License Condition that are complete and accurate in all material respects in accordance with 10 CFR 50.9 was a violation. Because the violation is associated with willfulness and impacted the regulatory process it was evaluated under the traditional enforcement process as set forth in the NRC Enforcement Policy. Since this violation was the result of a willful action, the NRC considers the violation to be more than minor, and therefore, the NRC has classified the violation at Severity Level IV, in accordance with the NRC Enforcement Policy (Section 4OA5).

Enforcement. Title 10 CFR 50.9 requires, in part, that information required by statute, orders, or license conditions to be maintained by the licensee shall be complete and accurate in all material respects.

Wolf Creek License Condition 2.C.5, "Fire Protection," requires that the licensee shall implement and maintain in effect all provisions of the approved fire protection program as described in the SNUPPS Final Safety Analysis Report. The Wolf Creek Updated Final Safety Analysis Report describes the fire protection program in Section 9.5-1, and commits to meeting Regulatory Guide 1.39, "Housekeeping Requirements for Water-Cooled Nuclear Power Plants," Revision 2, in Appendix 3A, "Conformance to NRC Regulatory Guides," and Appendix A, Table 9.5A-1. Regulatory Guide 1.39, Revision 2, endorses ANSI Standard N45.2.3-1973, "Housekeeping During the Construction Phase of Nuclear Power Plants."

ANSI Standard N45.2.3-1973, Section 3.5 states, in part, that periodic inspection and examination of the work areas shall be performed at scheduled intervals to assure adequacy of cleanliness and housekeeping practices. Section 4 states, in part, that copies of inspection and examination records shall be prepared and placed with other project records.

Procedure AP 12-001, "Housekeeping Control," Revision 6C, dated May 5, 2006, Section 6.1.8 required that "Assigned personnel shall walk down their areas monthly… (3) These Individual's or Designee's shall walk down their assigned areas monthly."

Procedure AP 12-001, "Housekeeping Control," Revision 7, dated November 10, 2008, Section 6.1.8, required that "Assigned personnel shall walk down their areas monthly…" [i.e., allowed use of designees was removed].

Contrary to the above, between October and December 2008, the licensee failed to maintain records required by License Condition 2.C.5 that were complete and accurate in all material respects. Specifically, the Housekeeping Inspection Card for the spent fuel pool area indicated that the inspection had been completed when security access logs indicate that the individual that completed the record had not entered the area. The NRC investigation determined that the assigned individual did not walk down the assigned area, and did not assign a designee to do so.

This is a violation of 10 CFR 50.9. A notice of violation is attached. NOV 05000482/2013-08 Failure to Maintain Complete and Accurate Housekeeping Records. (EA-13-084)

4OA6 Meetings, Including Exit

Exit Meeting Summary

On May 23, 2013, the inspectors presented the results of the radiation safety inspections to Ms. A. Stull, Vice President and Chief Administrative Officer, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On June 12, 2013, the inspector debriefed the results of the review of LER 2011-008-00 to Mr. R. Hobby, Licensing, and Mr. D. Garbee, Acting Fire Protection Supervisor. The licensee acknowledged the issues presented. No proprietary information was reviewed.

On July 11, 2013, the resident inspectors presented the inspection results to Mr. J. Broschak, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On August 7, 2013, the resident inspectors conducted a supplemental exit with Mr. R.Smith to revise the characterization of two findings. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

A. Camp, Plant Manager
A. Stull, Vice President and Chief Administrative Officer
B. Fox, Contractor, Fire Protection Engineer
D. Dees, Operations Support Superintendant
D. Grove, Maintenance Superintendant
E. Peterson, Ombudsman
G. Pendergrass, Manager Station Recovery
J. Broschak, Engineering Vice President
J. Kobyra, Manager Design Engineering
J. Schepers, Supervisor, Radiation Protection
J. Yunk, Manager Performance Improvement and Corrective Actions
K. Davis, Welder, Mechanical Maintenance
L. Aiken, Master Health Physics Technician, Radiation Protection
L. Lane, Operations Superintendant
L. Ratzlaff, Manager Maintenance
L. Upson, Manager Integrated Plant Scheduling
M. Church, Master Welder, Mechanical Maintenance
M. Skiles, Supervisor, Radiation Protection
M. Sunseri, President and Chief Executive Officer
M. Westman, Manager Regulatory Affairs
P. Bedgood, Manager Radiation Protection
P. Herrman, Manager Support Engineering
R. Clemens, Strategic Projects Vice President
R. Flannigan, Manager Nuclear Engineering
R. Hobby, Specialist, Licensing
R. Rumas, Manager Quality
R. Smith, Site Vice President and Chief Nuclear Operations Officer
S. Henry, Manager Operations
T. Baban, Manager System Engineering
T. Damashek, Operations Training Superintendent
T. East, Superintendent of Emergency Planning
T. Patten, Master Health Physics Technician, Radiation Protection
T. Slenker, Operations Corrective Action Program Coordinator
W. Muilenberg, Supervisor Licensing

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000482/2013003-07	URI	Notice of Enforcement Discretion (NOED) 13-4-002 for a Non-Functional Class 1E Air Conditioning Unit (Section 4OA3.7)

Closed

05000482/2011-008-00	LER	Post-Fire Safe Shutdown Latent Design Issue May Cause Essential Service Water System Flow Imbalance (Section 4OA3.1)
05000482/2009-005-01	LER	Loss of Both Diesel Generators with All Fuel in the Spent Fuel Pool (Section 4OA3.8)
05000482/2013-003-00	LER	Movement of Irradiated Fuel Progressed After Non-Conservative Decision Making Resulted in Removal of One Source Range Monitor from Service (Section 4OA3.2)
05000482/2013-005-00	LER	Fatigue Failure of Jacket Water Pressure Switch Diaphragm Results in Loss of the ‘B’ Diesel Generator (Section 4OA3.3)

Opened and Closed

05000482/2013003-01	NCV	Failure to Follow Station Procedures (Section 1R08.3.b.1)
05000482/2013003-02	NCV	Failure to Identify Leakage at Refuel Pool Cavity (Section 1R08.3.b.2)
05000482/2013003-03	NCV	Diesel Generator Pressure Switch Failed Due to Instrument Line Pressure Oscillations (Section 4OA3.3)
05000482/2013003-04	NCV	Failure to Update Station Procedures and Train Operators Regarding the Effects of Implemented Design Changes to the Main Turbine Control System (Section 4OA3.5.b.1)
05000482/2013003-05	NCV	Failure to Properly Manage Reactivity Changes when Swapping Turbine Steam Admission Modes from Full to Partial Arc (Section 4OA3.5.b.2)
05000482/2013003-06	NOV	Failure to Maintain Complete and Accurate Housekeeping Records (Section 4OA5)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

PROCEDURES

NUMBER	TITLE	REVISION
OFN AF-025	Unit Limitations	39
ALR 00-114D	OA/OPC Trouble	5
ALR 00-134E	Main Transformer Trouble	11

Section 1R04: Equipment Alignment

PROCEDURES

NUMBER	TITLE	REVISION
SYS KJ-125	EDG Starting Air Compressor Operation	15
CKL EF-120	Essential Service Water Valve, Breaker and Switch Lineup	46
CKL AL-120	Auxiliary Feedwater Normal Lineup	40A

DRAWINGS

NUMBER	TITLE	REVISION
M-12KJ05	Piping and Instrumentation Diagram, Standby Diesel Generator “B” Intake Exhaust, F.O. & Start Air Sys.	16
M-11EF01	System Flow Diagram Essential Service Water	09
M-12AL01	Piping and Instrumentation Diagram Auxiliary Feedwater System	23

CONDITION REPORTS

54654	62411	62413

WORK ORDERS

07-292792-016	07-292792-017	07-292792-021	07-292792-022	07-292792-039
07-292792-040				

Section 1R05: Fire Protection

PROCEDURES

NUMBER	TITLE	REVISION
AP 10-100	Fire Protection Program	17
AP 10-106	Fire Preplans	13

DRAWINGS

NUMBER	TITLE	REVISION
E-1F9905	Fire hazard Analysis	4

Section 1R08: Inservice Inspection

CONDITION REPORTS

00034867	00036937	00041751	00051596
00035428	00036938	00043489	00053786
00035429	00037276	00043490	00054549
00035665	00037334	00044754	00056232
00035940	00037386	00044963	00056535
00036024	0037803	00044966	00057429
00036438	00038141	00047212	00057463
00036443	00038972	00048307	00058234
00036876	00041750	00048368	00058734

DRAWINGS

NUMBER	TITLE	REVISION
M-1G062	Equipment Location Turbine Building Partial Plan El. 2015'-4''	2

PROCEDURES

NUMBER	TITLE	REVISION
AI 16F-001	Evaluation Of Boric Acid Leakage	7
AI 16F-002	Boric Acid Leakage Management	7
AP 16F-001	Boric Acid Corrosion Control Program	6B
AP 22A-001	Screening, Prioritizing, and Pre-Approval	15
AP 29A-003	Steam Generator Management	15
AP 29A-004	American Society Mechanical of Engineers (ASME) Section Xi System Pressure Testing	8

PROCEDURES

NUMBER	TITLE	REVISION
I-ENG-023	Steam Generator Data Analysis Guidelines	13
PDI ISI 254 SE NB	Remote Inservice Examination of Reactor Vessel Nozzle to Safe End, Nozzle to Pipe and Safe End to Pipe Welds Using the Nozzle Scanner	2
PDI UT 8	PDI Generic Procedure for Ultrasonic Examination of Weld Overlaid Similar and Dissimilar Metal Welds	F
PDI-UT-1	Generic Procedure for Ultrasonic Examination of Ferritic Pipe Welds	E
QCP-20-502	Magnetic Particle Examination AC/DC Yoke and AC Coil Techniques	8B
QCP-20-520	Pressure Test Examination	9
STN PE-040D	RCS Pressure Boundary Integrity Walkdown	3
STN PE-040G	Transient Event Walkdown	4
STN PE-370	Foreign Object Search and Retrieval and Secondary Side Inspections	12
STS PE-022	Steam Generator Tube Inspection	19
STS PE-040E	RPV Head Visual Inspection	3
UT 2	Ultrasonic Examination of Vessel Welds and Adjacent Base Metal	28
UT 92	Ultrasonic Examination of Overlaid Austinetic Piping Welds	6
UT-94	Lambert, McGill, and Thomas Nondestructive Examination Procedure – Ultrasonic Examination of Ferritic Pipe Welds	7
WDI STD 101	RHVI Vent Tube J-Weld Eddy Current Examination	10
WDI STD 1040	Procedure for Ultrasonic Examination of Reactor Vessel Head Penetrations	9
WDI STD 1041	Reactor Vessel Head Penetrations Ultrasonic Examination Analysis	8
WDI STD 114	RHVI Vent Tube ID and CS Wastage Eddy Current Examination	12
WDI STD 146	ET Examination of Reactor Vessel Pipe Welds Inside Surface	11

MISCELLANEOUS

NUMBER	TITLE	REVISION / DATE
09-00178	Wolf Creek Generating Station - Request For Additional Information Re: Relief Request 13R-06, Alternative To The Examination Requirements Of ASME Section XI For Class 1 Piping Welds Examined From The Inside Of The Reactor Vessel (TAC No. MD9658)	March 27, 2009
ASS03	Performance Improvement Learning Oversight and Trending System Assessment/Audit Detail Report – BACCP Self-Assessment	September 20, 2006
Code Case N-729-1	Alternative Examination Requirements for PWR Reactor Vessel Upper Heads With Nozzles Having Pressure-Retaining Partial-Penetration Welds Section XI, Division 1	March 28, 2006
ES1301910	Boric Acid Training for WCNOC Supervision	001
ESH – 102	STARS Plants Alloy 600 Program Review	September 5, 2006
ET 06-001 0	Docket 50-482: Inservice Inspection Program Plan for the Third Ten-Year Interval and 10 CFR 50.55a Requests 13R-01, 13R-02,and 13R-04	March 2, 2006
ET 06-0021	Docket No. 50-482: 10 CFR 50.55a Request 13R-05, Installation and Examination of Full Structural Weld Overlays for Repairing/Mitigating Pressurizer Nozzle-to-Safe End Dissimilar Metal Welds and Adjacent Safe End-to-Piping Stainless Steel Welds	May 9, 2006
ET 06-0031	Docket 50-482: Wolf Creek Nuclear Operating Corporation's Response to Request for Additional Information Regarding I 0 CFR 50.55a Request I3R-05 and Submittal of Revision 1 to 10 CFR 50.55a Request 13R-05	August 4, 2006
ET 060042	Docket 50-482: Wolf Creek Nuclear Operating Corporation's Response to the September 20, 2006 NRC Request for Additional Information Regarding 10 CFR 50.55a Request 13R-05	September 27, 2006
ET 06-0043	Docket 50-482: Wolf Creek Nuclear Operating Corporation's Response to NRC Request for Additional Information Regarding 10 CFR 50.55a Request 13R-01	October 5, 2006
ET 06-0044	Docket 50-482: Wolf Creek Nuclear Operating Corporation’s Revised Commitment Regarding 10 CFR 50.55a Request 13R-05	October 2, 2006

MISCELLANEOUS

NUMBER	TITLE	REVISION / DATE
ET 06-0058	Docket No. 50-482: Wolf Creek Nuclear Operating Corporation's Response to the Second NRC Request for Additional Information Regarding 10 CFR 50.55a Request 13R-01	December 20,2006
ET 08-0044	Docket No. 50-482: 10 CFR 50.55a Request 13R-06, Alternative to the Examination Requirements of ASME Section XI for Class 1 Piping Welds Examined from the Inside of the Reactor Vessel	September 16, 2008
ET 09-0014	Docket No. 50-482: Wolf Creek Nuclear Operating Corporation's Response to Request for Additional Information Regarding 10 CFR 50.55a Request 13R-06	April 23, 2009
ET 12-0010	Docket 50-482: 10 CFR 50.55a Request Number 13R-07, Relief from ASME Code Case N-729-1 Requirements for Examination of Reactor Vessel Head Penetration Welds	July 2, 2012
Letter from Matthew W. Sunseri	Wolf Creek Generating Station -Request For Relief No. 13R-07 For The Third 10-Year Inservice Inspection Program Interval (TAC No. ME9078)	January 4, 2013
Letter from Rick A. Muench	Wolf Creek Generating Station - Third 10-Year Interval Inservice Inspection Program Relief Request I3R-01 (TAC No. MD0297	February 21, 2007
Letter from Rick A. Muench	Wolf Creek Generating Station - Authorization Of Relief Request I3r-05, Alternatives To Structural Weld Overlay Requirements (TAC No. MD1813)	July 19, 2007
Letter from Rick A. Muench	Wolf Creek Generating Station -Relief Request 13R-06, Alternative To The Examination Requirements Of ASME Code, Section XI For Class 1 Piping Welds Examined From The Inside Of The Reactor Vessel (TAC No. MD9658)	July 23, 2009
Letter from NCR to Matthew W. Sunseri	Wolf Creek Generating Station -Issuance Of Amendment RE: Adoption of TSTF-510, Revision 2, "Revision To Steam Generator Program Inspection Frequencies And Tube Sample Selection," Using The Consolidated Line Item Improvement Process (TAC No. ME8569)	November 19, 2012
Letter from NCR to Matthew W. Sunseri	Wolf Creek Generating Station -Issuance Of Amendment Re: Steam Generator Tube Permanent Alternate Repair Criteria (TAC No. ME8350)	December 11, 2012

MISCELLANEOUS

NUMBER	TITLE	REVISION / DATE
ME9078	Request For Additional Information Request I3R-07 Examination Of Reactor Vessel Head Penetration Welds Wolf Creek Generating Station Unit 1 Wolf Creek Nuclear Operating Corporation Docket Number 50-482	September 4, 2012
October 15, 2012	Docket 50-482: Response to Request for Additional Information Regarding 10 CFR 50.55a Request Number 13R-07, "Relief from ASME Code Case N-729-1 Requirements for Examination of Reactor Vessel Head Penetration Welds"	October 15, 2012
SA-2012-0023	ISI Program Self Assessment	March 8, 2012
SEL 2010-163	Self-Assessment Report SEL 2010-163 "Steam Generator Health Optimization"	March 25, 2010
SG-CDME-12-2	Wolf Creek Steam Generator Secondary Side Condition Monitoring and Operational Assessment for Fuel Cycle 19 and Refueling Outage 19	October 2012
SG-SGDA-11-1	Wolf Creek RF18 Condition Monitoring Assessment and Operational Assessment	January 2012

Section 1R11: Licensed Operator Requalification Program

PROCEDURES

NUMBER	TITLE	REVISION
AP 21-001	Conduct of Operations	60
GEN 00-004	Power Operations	69
GEN 00-005	Minimum Load to Hot Standby	75
OP3003501	Steam Generator Tube Rupture Response Methodology Change Lab	00
LR5002023	Inadvertent Safety Injection Lab	004

Section 1R12: Maintenance Effectiveness

PROCEDURES

NUMBER	TITLE	REVISION
AP 23M-001	WCGS maintenance Rule Program	9

CONDITION REPORTS

68393	70858	70854	66874	ACE 51622
66244	66499	66875		

WORK ORDERS

12-353867-000	13-099778	13-366342-000	13-366342-001

MISCELLANEOUS

NUMBER	TITLE	REVISION / DATE
	Maintenance Rule Database	

Section 1R13: Maintenance Risk Assessment and Emergent Work Controls

PROCEDURES

NUMBER	TITLE	REVISION / DATE
AP 22C-003	Online Nuclear Safety and Generation Risk Assessment	19
APF 22C-003-01	On-Line Nuclear Safety and Generation Risk Assessment Week (2013) 208 (as revised)	May 20, 2013

MISCELLANEOUS

NUMBER	TITLE	REVISION
	Work Week 2013-205 Major Activities (4/29-5/05)	0
	Work Week 13-202 Risk Assessment	0

Section 1R15: Operability Evaluations

PROCEDURES

NUMBER	TITLE	REVISION
AP 06-002	Radiological Emergency Response Plant (RERP) – Emergency Action Level -1 Radioactive Effluent Release	13
AP 26C-004	Operability Determination and Functionality Assessment	26
AI 22C-016	Unit Condition and Operational Residual Risk	0A
AI 22C-010	Operations Work Controls	15
STS AL-103	TDAFW Pump Inservice Test	57

CONDITION REPORTS

00062146	00064397	00067888	66396	66398
00057299	00063495			

MISCELLANEOUS

NUMBER	TITLE	REVISION / DATE
13-364867-001	Engineering Disposition: Justification of AFW Pump PAL02 Stuffing Box Extension Through-Wall	March 8, 2013
13-365489-001	Engineering Disposition: PEJ01A Diffuser Volute Vane Damage	2
13-366890-000 & 13-366291-000	Engineering Disposition: PEM01A/B Operated With No Suction Sources	0
	Interim Operation Assessment: PEM01A (SI pump A)	April 18, 2013
	Interim Operation Assessment: PEM01B (SI pump B)	April 8, 2013
GK-13-004	Operability Evaluation: SGK05A Class 1E AC Unit A	0
	Engineering Disposition: ESC – PEM01A/B Operated With No Suction Sources	0

Section 1R18: Plant Modifications

TEMPORARY MODIFICATION ORDER

NUMBER	TITLE	REVISION
13-003-KE	Removal of Fuel Transfer System Hold Down Assembly	0

DOCUMENTS

NUMBER	TITLE	REVISION / DATE
DCP 14263	SBO Diesel Generator Project- Missile Barrier Erection and Equipment Installation Work Outside Protected Area	4
DCP 12958	Turbine Driven Auxiliary Feedwater Pump Governor Control Modification	9

DOCUMENTS

NUMBER	TITLE	REVISION / DATE
WCAP-17100-P	PRA Model for the Westinghouse Shutdown Seal, Supplement 1	0
WCAP-17541-P	Implementation Guide for Westinghouse Reactor Coolant Pump SHIELD Passive Thermal Seal	0
AI 21-017	Timed Fire Protection Actions Validation	4
MPM M712Q-01	Reactor Coolant Pump Seal Removal/Installation	23
XX-E-013-002	Post-fire Safe Shutdown (PFSSD) Analysis	19
WCOP-24	Operations EMG/OFN Setpoints	11
OFN BB-005	RCP Malfunctions	21
	RCP Vendor Technical Manual	6
MGE TL-001	Wiring Termination and Lug/Connector Installation	19
AP 16E-002	Post maintenance Testing Development	13
2013-432	Breach Permit	April 15, 2013
OE NB-13-002	Operability Evaluation NB001, NB002	0
QR-03117685-1	Qualification Report for Current Transformer and Modified Bus Installation for General Electric Type M26 Switchgear	2
	Technical Review of NB-13-02	0
AP 10-104	Breach Authorization	27

DRAWINGS

NUMBER	TITLE	REVISION
WIP-E-13NB03-005-A-1	Lower Medium Voltage Sys. Class 1E 4.16KV Three Line Meter and Relay Diagram	1-6
WIP-E-13KUO1A-000-A-1	Schematic Diagram Class 1E Bus NB)! Feeder BRKR. 152NB0114	0
WIP-E-009-00132-W08-A-1	MetalClad Switchgear Connection Diagram	1
WIP-E-009-00024-W11-A-1	Electrical Diagram: Power Control Circuits	1
M-712-00206	Shutdown Seal Model 93A-1 & 100 RCP Shutdown Seal Assembly Components	1
M-712-00207	No. 1 Seal Assembly Kit 8 inch	1
M-712-00056	General Assembly 93A-1 R.C. Pump	16
M-712-00057	General Assembly 93A-1 R.C. Pump	11
M-712-00058	General Assembly 93A-1 R.C. Pump	9
M-712-00059	General Assembly 93A-1 R.C. Pump	15
	Work in Progress Drawings Associated with DCP 14117	
	Work in Progress Drawings Associated with DCP 14261	
	Work in Progress Drawings Associated with DCP 14262	
	Work in Progress Drawings Associated with DCP 14263	

WORK ORDERS

12-350886-025	12-350886-026	12-350886-027	12-350886-028	12-350886-029
12-350886-030	12-350886-031	12-350886-032	12-354257-003	12-354257-063
12-361102-016	12-354257-006	12-354257-126	12-354257-128	12-354257-129

CONDITION REPORTS

66117	65321	63243	66592	66698

MISCELLANEOUS

NUMBER	TITLE	REVISION
USAR 15.7.4	Fuel Handling Accidents	21

Section 1R19: Post-Maintenance Testing

PROCEDURES

NUMBER	TITLE	REVISION
MPE BA 014	Battery Impedance Test	4A
MPE E050Q-05	Battery Equalizing Procedure	13A
STS MT-019	125VDC Class 1E Quarterly Battery Inspection	21
STS MT-020	125 Volt DC Battery Inspection/Charger Operational Test	25B
STS MT-021	Service Test for 125Vdc Class 1E Batteries	16A
STS EF-100B	ESW Pump “B” In-service Test and Discharge Check Valve In-service Test	40
SYS GK-123	Control Building A/C Units Startup and Shutdown	21
STS IC-565	Channel Calibration Auxiliary Feedwater Pump Suction Pressure Indication for Remote Shutdown Pressure	5A
CNT-MM-700	Fabrication and Installation of Tubing, Tubing Supports, Instrument Supports and Instrument Installation	5
MPE GK-003	Control Room and Class 1E A/C Units Preventive Maintenance Activity	4
MPE GK-004	GK Unit Preparation for Work	4

CONDITION REPORTS

70420 ACE	19528	67888	66398	66396
57299				

WORK ORDERS

11-340517-002	11-341224-001	09-321171-001	11-341337-002	11-342032-004
08-309413-041	09-342741-002	11-341336-003	11-345398-002	09-317266-001
11-343552-002	11-343567-001	12-353040-003	11-345397-002	11-337095-005
11-343332-000	11-343334-000	12-352686-000	13-373150-004	10-333747-000
13-373150-002	12-352686-000	13-373153-001	13-373153-009	12-361695-005
13-373153-008	13-373153-004	13-373153-000		

MISCELLANEOUS

NUMBER	TITLE	REVISION / DATE
	Balance of Plant Eddy Current Inspection Report EEC01A Spent Fuel Pool Cooler	June 20, 2013
M-071-0016-05	Vendor Manual: Cooling the Spent Fuel Pool	3
M-071-0015-03	Vendor Manual: Exchange Surface Requirement Based on Case “A” Conditions	May 12, 1977
V5011748	SGKOSA Oil Analysis Certificate, Herguth Laboratories	June 26, 2013
V5011749	SGKOSA Oil Analysis Certificate, Herguth Laboratories	June 26, 2013

Section 1R20: Refueling and Other Outage Activities

PROCEDURES

NUMBER	TITLE	REVISION
GEN 00-003	Hot Standby to Minimum Load	87A
RXE 01-002	Reload Low Power Physics Testing	24

CONDITION REPORTS

00064552	00063645

MISCELLANEOUS

NUMBER	TITLE	REVISION
	Reactivity Maneuver Plan, Cycle 20 Initial Startup	0

Section 1R22: Surveillance Testing

PROCEDURES

NUMBER	TITLE	REVISION
STS KJ-001A	Integrated Diesel Generator and Safeguards Actuation Test Train A	48A
STS KJ-001B	Integrated Diesel Generator and Safeguards Actuation Test Train B	47A
STS KJ-005A	Manual/Auto Start, Synch, & Loading of EDG NE01	58
STN AL-100C	TDAFW Pump Reference Pump Curve Determination	1
STS IC-201A	Channel Operational Test of Tavg, ΔT and Pressurizer Pressure Protection Set One	18
STS AB-201B	TDAFP Steam Isolation Inservice Valve Test	8
STS AL-201C	Turbine Driven Auxiliary Feedwater System Inservice Valve Test	8

DRAWINGS

NUMBER	TITLE	REVISION
J-14K81	Compressed Air System Auxiliary Building Details	3
M-12KA05	Piping and Instrumentation Diagram Compressed Air System	7
M-12AL01	Piping and Instrumentation Diagram Auxiliary Feedwater System	23

CONDITION REPORTS

00068192	00068267	00068271	00068274	00067526
00060210				

WORK ORDER

12-361011-000

Section 2RS2: Occupational ALARA Planning and Controls

PROCEDURES

NUMBER	TITLE	REVISION
AI 16C-008	Work Order Implementation	20A
AI 16C-012	Refuel Preparation & Walk down Guidelines	5
AP 05-009	ALARA Design Guidelines	2A
AP 16C-006	MPAC Work Request / Work Order Process Controls	21
AP 25A-401	ALARA Program	21
AP 25A-410	ALARA Committee	16
AP 25B-300	RWP Program	22
RPP 02-105	RWP	37

RADIATION WORK PERMITS

NUMBER	TITLE	REVISION
131000	Health Physics Rover Coverage for RF-19s	2
132001	Mechanical Maintenance Welding Department RWP	5
132002	Maintenance Expanded Scope	6

AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

NUMBER	TITLE	DATE
12-03-RP/PC	Radiation Protection/Process Control Programs	May 4, 2012

CORRECTIVE ACTION DOCUMENT NUMBERS

64705	65144	65145	65148	65422
65517				

WORK ORDERS

09-316582-014	09-346910-000	11-346910-006

MISCELLANEOUS DOCUMENTS

NUMBER	TITLE	DATE
	Official Dose for 2010	April 13, 2013
	Official Dose for 2011	April 13, 2013
	Official Dose for 2012	April 13, 2013
	Three Year Rolling Average	April 16, 2013
	Wolf Creek ALARA Long Range Exposure /Source Term Reduction Plan for 2011 - 2016	January 10, 2012
131000	ALARA Review	June, 27, 2012
131000	Post Job ALARA Review	April 17, 2013
131000	RWP Budget Report	April 17, 2013
132001	ALARA Review	December 10, 2012
132001	Post Job ALARA Review	May 16, 2013
132001	RWP Budget Report	April 18, 2013
132002	ALARA Review	February 27, 2013
132002	Post Job ALARA Review	April 22, 2013
132002	RWP Budget Report	April 15, 2013

Section 2RS4: Occupational Dose Assessment

PROCEDURES

NUMBER	TITLE	REVISION
RPP 03-121	Neutron Dose Calculations	5
RPP 03-122	Skin Dose Calculations	12
RPP 03-205	DAC-Hour Tracking	16
RPP 03-210	Internal Exposure Calculations and Evaluations	14A
RPP 03-215	Collection of Bioassay Samples	5
RPP 03-406	HP Dosimetry/Records	9
RPP 03-407	Testing of Portal Monitors as Passive Whole Body Counters	1A

AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

NUMBER	TITLE	DATE
12-03-RP/PC	Radiation Protection / Process Control Program	May 4, 2012

CONDITION REPORTS

64625	65544	65925

MISCELLANEOUS DOCUMENTS

NUMBER	TITLE	REVISION / DATE
APF 30E-OOR-01	Site Access Training Site Specific – Lesson Plan	6
	List of RWP Tasks with Multi-Packs	May 23, 2013
	List of Multipacks per RCA Entry	May 23, 2013
	Form RPF 03-406	2

Section 4OA1: Performance Indicator Verification

PROCEDURE

NUMBER	TITLE	REVISION
NEI 99-02	Reactor Oversight Process Performance Indicators	9

Section 4OA2: Identification and Resolution of Problems

CONDITION REPORT

00062234	00025515	00046239	43270	000543
00064461	00064464	00065305	00065418	00065421
00065430	00065799			

MISCELLANEOUS

NUMBER	TITLE	DATE
	Wolf Creek Generating Station: Station Roll-up Performance Results, 4th Quarter 2012	February 4, 2013
	Wolf Creek Generating Station: Station Roll-up Performance Results, 1st Quarter 2013	May 6, 2013

Section 4OA3: Event Follow-Up

PROCEDURES

NUMBER	TITLE	REVISION
MPM M018Q-01	Standby Diesel Generator Inspection	20
SYS KJ-124	Post Maintenance Run of Emergency Diesel Generator B	52
STS KJ-001B	Integrated D/G and Safeguards Actuation Test – Train B	47
STS AC-001	Main Turbine Valve Cycle Test	36
TMP 12-016	Post Modification Main Turbine Control System Generator Startup and Testing	7
AI 28A-010	Screening Condition Reports	15
AP 05-005	Design, Implementation & Configuration Control of Modifications	19
AP 19E-002	Reactivity Management Program	17
AP 21-001	Conduct of Operations	61

PROCEDURES

NUMBER	TITLE	DATE
13-0449	CKL ZL-005A: A EDG Operating Log Rev 4	March 3, 2013
13-0471	CKL ZL-005B: B EDG Operating Log Rev 5	March 3, 2013
13-0567	SYS KJ-123: Post Maintenance Run of Emergency Diesel Generator A Rev 53	March 4, 2013
13-0568	SYS KJ-124: Post Maintenance Run of Emergency Diesel Generator B Rev 53	March 4, 2013
13-0570	MPM M018Q-01: Standby Diesel Generator Inspection Rev 22	March 7, 2013
13-0653	SYS KJ-121: Diesel Generator NE01 and NE02 Lineup for Automatic Operation Rev 46	March 3, 2013

CONDITION REPORTS

00064828	65624	67538	67528	67582
67623	70814	68711	68720	68556
70789				

WORK ORDER

13-365878-002

MISCELLANEOUS

NUMBER	TITLE	REVISION / DATE
EN# 48802	NOUE: both diesel generators unavailable	3/1/2013
2009-005	Licensee Event Report: Loss of both Diesel Generators with all Fuel in the Spent Fuel Pool	01
2013-003	Licensee Event Report: Movement of Irradiated Fuel Progressed After Non-Conservative Decision Making Resulted in Removal of One Source Range Monitor From Service	00
2013-005	Licensee Event Report: Fatigue Failure of Jacket Water Pressure Switch Diaphragm Results in Loss of the ‘B’ Diesel Generator	00
WOL-52624	Failure Analysis of SOR Pressure Switch Manufacturer: SOR, Model: 4N6-B5-NX-01A-JJTTX12 Purchase Order No.: 764426, Exelon Power Labs	April 10, 2013
	Control Room Log	March 13, 2013
M-018-01387 W03	Vendor Manual: Installation Operating and Maintenance Instructions for Model 20 Air Volume Booster	September 27, 2005
	Fire Event Investigation Report: Auxiliary Boiler Roof adjacent to exhaust stack penetration	April 11, 2013
EN# 48914	Fire Lasting Greater Than 15 Minutes	April 11, 2013

DESIGN AND LICENSEE BASIS DOCUMENTS

NUMBER	TITLE	REVISION
013898	PFSSD – EFHV0060 Control Wiring Modification	0

DRAWINGS

NUMBER	TITLE	REVISION
WIP-E-13EF04A-000-A-1, Sh 1	ESW From Component Cooling Water Heat Exch. Iso. Valve EFHV0060	00
WIP-E-025-00007-W13-A-199	ESW “B” Return from CCW Heat Exchanger “B”	0
M-12KJ01	Piping & Instrumentation Diagram Standby Diesel Generator Cooling Water System	12
M-12KJ04	Piping & Instrumentation Diagram Standby Diesel Generator “B” Cooling Water System	16

Section 4OA5: Other Activities

WORK ORDERS

12-356794-001 12-356794-003 12-356794-008 12-356794-012

MISCELLANEOUS

NUMBER	TITLE	DATE
ET 12-0015	Wolf Creek Letter from J. Broschak to U.S. NRC, Re: Seismic Aspects of Recommendation 2.3 of the Near-Term Task Force Review of the Fukushima Dai-ichi Accident	July 2, 2012
ET 12-0031	Wolf Creek Letter from J. Broschak to U.S. NRC, Re: 180 day response to Recommendation 2.3 of the Near-Term Task Force Review of the Fukushima Dai-ichi Accident	November 27, 2012
EPRI 1025286	Seismic Walkdown Guidance	June 2012

Request for Information for Inservice Inspection
Wolf Creek Nuclear Power Plant
February 11, 2013, through February 22, 2013
NRC Inspection Report 05000482/2013002

Please provide the requested information. Thank you for your support.

NOTE: In an effort to keep the requested information organized, please submit the information using the same request designation. For example, the names and phone numbers for the program leads should be in a file/folder titled A.5.b.

If you have any questions or comments, please contact the lead inspector Ronald Kopriva at (817) 200-1104 (Ron.Kopriva@nrc.gov)

PAPERWORK REDUCTION ACT STATEMENT
This letter does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing information collection requirements were approved by the Office of Management and Budget, control number 3150-0011.

INSERVICE INSPECTION DOCUMENT REQUEST

Inspection Dates: February 11 through February 22, 2013

Inspection Procedures: IP 71111.08 "Inservice Inspection (ISI) Activities"

Inspectors: Ronald Kopriva, Senior Reactor Inspector (Team Lead)
Megan Williams, Reactor Inspector

A. Information Requested for the In-Office Preparation Week

The following information should be sent to the Region IV office in hard copy or electronic format (ims.certrec.com preferred), in care of Ronald Kopriva, by February 1, 2013, to facilitate the selection of specific items that will be reviewed during the onsite inspection week. The inspectors will select specific items from the information requested below and then request from your staff additional documents needed during the onsite inspection week (Section B of this enclosure). We ask that the specific items selected from the lists be available and ready for review on the first day of inspection. Please provide requested documentation electronically if possible. If requested documents are large and only hard copy formats are available, please inform the inspector(s), and provide subject documentation during the first day of the onsite inspection. If you have any questions regarding this information request, please call the inspector as soon as possible.

A.1 ISI/Welding Programs and Schedule Information

a) A detailed schedule (including preliminary dates) of:

i) Nondestructive examinations planned for Class 1 & 2 systems and containment, performed as part of your ASME Section XI, risk informed (if applicable), and augmented inservice inspection programs during the upcoming outage.

Provide a status summary of the nondestructive examination inspection activities vs. the required inspection period percentages for this interval by category per ASME Section XI, IWX-2400. Do not provide separately if other documentation requested contains this information.

ii) Reactor pressure vessel head examinations planned for the upcoming outage.

iii) Examinations planned for Alloy 82/182/600 components that are not included in the Section XI scope (If applicable).

iv) Examinations planned as part of your boric acid corrosion control program (Mode 3 walkdowns, bolted connection walkdowns, etc.).

v) Welding activities that are scheduled to be completed during the upcoming outage (ASME Class 1, 2, or 3 structures, systems, or components).

b) A copy of ASME Section XI Code Relief Requests and associated NRC safety evaluations applicable to the examinations identified above.

c) A list of nondestructive examination reports (ultrasonic, radiography, magnetic particle, dye penetrant, Visual VT-1, VT-2, and VT-3), which have identified relevant conditions on Code Class 1 & 2 systems since the beginning of the last refueling outage. This should include the previous Section XI pressure test(s) conducted during start up and any evaluations associated with the results of the pressure tests. Also, include in the list the nondestructive examination reports with relevant conditions in the reactor pressure vessel head penetration nozzles that have been accepted for continued service. The list of nondestructive examination reports should include a brief description of the structures, systems, or components where the relevant condition was identified.

d) A list with a brief description (e.g., system, material, pipe size, weld number, and nondestructive examinations performed) of the welds in Code Class 1 and 2 systems which have been fabricated due to component repair/replacement activities since the beginning of the last refueling outage, or are planned to be fabricated this refueling outage.

e) If reactor vessel weld examinations required by the ASME Code are scheduled to occur during the upcoming outage, provide a detailed description of the welds to be examined and the extent of the planned examination. Please also provide reference numbers for applicable procedures that will be used to conduct these examinations.

f) Copy of any 10 CFR Part 21 reports applicable to your structures, systems, or components within the scope of Section XI of the ASME Code that have been identified since the beginning of the last refueling outage.

g) A list of any temporary noncode repairs in service (e.g., pinhole leaks).

h) Please provide copies of the most recent self-assessments for the inservice inspection, welding, and Alloy 600 programs.

A.2 <u>Reactor Pressure Vessel Head (RPVH)</u>

a) Provide the detailed scope of the planned nondestructive examinations of the reactor vessel head which identifies the types of nondestructive examination methods to be used on each specific part of the vessel head to fulfill commitments made in response to NRC Bulletin 2002-02 and NRC Order EA-03-009. Also, include examination scope expansion criteria and planned expansion sample sizes if relevant conditions are identified. (If applicable)

b) A list of the standards and/or requirements that will be used to evaluate indications identified during nondestructive examination of the reactor vessel head (e.g., the specific industry or procedural standards which will be used to evaluate potential leakage and/or flaw indications).

A.3 Boric Acid Corrosion Control Program

a) Copy of the procedures that govern the scope, equipment and implementation of the inspections required to identify boric acid leakage and the procedures for boric acid leakage/corrosion evaluation.

b) Please provide a list of leaks (including Code class of the components) that have been identified since the last refueling outage and associated corrective action documentation. If during the last cycle, the unit was shutdown, please provide documentation of containment walkdown inspections performed as part of the boric acid corrosion control program.

c) Please provide a copy of the most recent self-assessment performed for the boric acid corrosion control program.

A.4 Steam Generator Tube Inspections

a) A detailed schedule of:

   i) Steam generator tube inspection, data analyses, and repair activities for the upcoming outage (If occurring).

   ii) Steam generator secondary side inspection activities for the upcoming outage. (If occurring).

b) Please provide a copy of your steam generator inservice inspection program and plan. Please include a copy of the operational assessment from last outage and a copy of the following documents as they become available:

   i) Degradation assessment

   ii) Condition monitoring assessment

c) If you are planning on modifying your Technical Specifications such that they are consistent with Technical Specification Task Force Traveler TSTF-449, “Steam Generator Tube Integrity,” please provide copies of your correspondence with the NRC regarding deviations from the standard technical specifications.

d) Copy of steam generator history documentation given to vendors performing eddy current testing of the steam generators during the upcoming outage.

e) Copy of steam generator eddy current data analyst guidelines and site validated eddy current technique specification sheets. Additionally, please provide a copy of EPRI Appendix H, "Examination Technique Specification Sheets," qualification records.

f) Identify and quantify any steam generator tube leakage experienced during the previous operating cycle. Also provide documentation identifying which steam generator was leaking and corrective actions completed or planned for this condition (If applicable).

g) Provide past history of the condition and issues pertaining to the secondary side of the steam generators (including items such as loose parts, fouling, top of tube sheet condition, crud removal amounts, etc.)

h) Provide copies of your most recent self assessments of the steam generator monitoring, loose parts monitoring, and secondary side water chemistry control programs.

i) Indicate where the primary, secondary, and resolution analyses are scheduled to take place.

j) Provide a summary of the scope of the steam generator tube examinations, including examination methods such as Bobbin, Rotating Pancake, or Plus Point, and the percentage of tubes to be examined. Do not provide these documents separately if already included in other information requested.

A.5 **Additional Information Related to all Inservice Inspection Activities**

a) A list with a brief description of inservice inspection, boric acid corrosion control program, and steam generator tube inspection related issues (e.g., condition reports) entered into your corrective action program since the beginning of the last refueling outage (for Unit 2). For example, a list based upon data base searches using key words related to piping or steam generator tube degradation such as: inservice inspection, ASME Code, Section XI, NDE, cracks, wear, thinning, leakage, rust, corrosion, boric acid, or errors in piping/steam generator tube examinations.

b) Please provide names and phone numbers for the following program leads:
Inservice inspection (examination, planning)

Containment exams
Reactor pressure vessel head exams
Snubbers and supports
Repair and replacement program
Licensing
Site welding engineer
Boric acid corrosion control program

Steam generator inspection activities (site lead and vendor contact)

B. **Information to be Provided Onsite to the Inspector(s) at the Entrance Meeting (February 11, 2013):**

B.1 **Inservice Inspection / Welding Programs and Schedule Information**

a) Updated schedules for inservice inspection/nondestructive examination activities, including steam generator tube inspections, planned welding activities, and schedule showing contingency repair plans, if available.

b) For ASME Code Class 1 and 2 welds selected by the inspector from the lists provided from section A of this enclosure, please provide copies of the following documentation for each subject weld:

i) Weld data sheet (traveler)
ii) Weld configuration and system location
iii) Applicable Code Edition and Addenda for weldment
iv) Applicable Code Edition and Addenda for welding procedures
v) Applicable weld procedures used to fabricate the welds
vi) Copies of procedure qualification records supporting the weld procedures from B.1.b.v
vii) Copies of mechanical test reports identified in the procedure qualification records above
viii) Copies of the nonconformance reports for the selected welds (If applicable)
ix) Radiographs of the selected welds and access to equipment to allow viewing radiographs (If radiographic testing was performed)
x) Copies of the preservice examination records for the selected welds
xi) Copies of welder performance qualifications records applicable to the selected welds, including documentation that welder maintained proficiency in the applicable welding processes specified in the weld procedures (at least 6 months prior to the date of subject work)
xii) Copies of nondestructive examination personnel qualifications (Visual inspection, penetrant testing, ultrasonic testing, radiographic testing), as applicable

c) For the inservice inspection related corrective action issues selected by the inspectors from section A of this enclosure, provide a copy of the corrective actions and supporting documentation.

d) For the nondestructive examination reports with relevant conditions on Code Class 1 and 2 systems selected by the inspectors from Section A above, provide a copy of the examination records, examiner qualification records, and associated corrective action documents.

e) A copy of (or ready access to) most current revision of the inservice inspection program manual and plan for the current Interval.

f) For the nondestructive examinations selected by the inspectors from section A of this enclosure, provide a copy of the nondestructive examination procedures used to perform the examinations (including calibration and flaw characterization/sizing procedures). For ultrasonic examination procedures qualified in accordance with ASME Section XI, Appendix VIII, provide documentation supporting the procedure qualification (e.g., the EPRI performance demonstration qualification summary sheets). Also, include qualification documentation of the specific equipment to be used (e.g., ultrasonic unit, cables, and transducers including serial numbers) and nondestructive examination personnel qualification records.

B.2 **Reactor Pressure Vessel Head**

a) Provide the nondestructive personnel qualification records for the examiners who will perform examinations of the reactor pressure vessel head.

b) Provide drawings showing the following: (If a visual examination is planned for the upcoming refueling outage)

   i) Reactor pressure vessel head and control rod drive mechanism nozzle configurations
   ii) Reactor pressure vessel head insulation configuration

   Note: The drawings listed above should include fabrication drawings for the nozzle attachment welds as applicable.

c) Copy of nondestructive examination reports from the last reactor pressure vessel head examination.

d) Copy of evaluation or calculation demonstrating that the scope of the visual examination of the upper head will meet the 95 percent minimum coverage required by NRC Order EA-03-009 (If a visual examination is planned for the upcoming refueling outage).

e) Provide a copy of the procedures that will be used to identify the source of any boric acid deposits identified on the reactor pressure vessel head. If no explicit procedures exist which govern this activity, provide a description of the process to be followed including personnel responsibilities and expectations.

f) Provide a copy of the updated calculation of effective degradation years for the reactor pressure vessel head susceptibility ranking.

g) Provide copy of the vendor qualification report(s) that demonstrates the detection capability of the nondestructive examination equipment used for the reactor pressure vessel head examinations. Also, identify any changes in equipment configurations used for the reactor pressure vessel head examinations which differ from that used in the vendor qualification report(s).

B.3 **<u>Boric Acid Corrosion Control Program</u>**

a) Please provide boric acid walkdown inspection results, an updated list of boric acid leaks identified so far this outage, associated corrective action documentation, and overall status of planned boric acid inspections.

b) Please provide any engineering evaluations completed for boric acid leaks identified since the end of the last refueling outage. Please include a status of corrective actions to repair and/or clean these boric acid leaks. Please identify specifically which known leaks, if any, have remained in service or will remain in service as active leaks.

B.4 **<u>Steam Generator Tube Inspections</u>**

a) Copies of the Examination Technique Specification Sheets and associated justification for any revisions.

b) Copy of the guidance to be followed if a loose part or foreign material is identified in the steam generators.

c) Please provide a copy of the eddy current testing procedures used to perform the steam generator tube inspections (specifically calibration and flaw characterization/sizing procedures, etc.). Also include documentation for the specific equipment to be used.

d) Please provide copies of your responses to NRC and industry operating experience communications such as Generic Letters, Information Notices, etc. (as applicable to steam generator tube inspections) <u>Do not provide these documents separately if already included in other information requested such as the degradation assessment.</u>

e) List of corrective action documents generated by the vendor and/or site with respect to steam generator inspection activities.

B.5 **<u>Codes and Standards</u>**

a) Ready access to (i.e., copies provided to the inspector(s) for use during the inspection at the onsite inspection location, or room number and location where available):

i) Applicable Editions of the ASME Code (Sections V, IX, and XI) for the inservice inspection program and the repair/replacement program.

ii) EPRI and industry standards referenced in the procedures used to perform the steam generator tube eddy current examination.

Inspector Contact Information:

Ronald Kopriva
Senior Reactor Inspector
817-200-1104
Ron.Kopriva@nrc.gov

Mailing Address:
US NRC Region IV
Attn: Ronald Kopriva
1600 E. Lamar Blvd
Arlington, TX 76011

The following items are requested for the
Occupational Radiation Safety Inspection
at Wolf Creek Generating Plant
May 20-24, 2013
Integrated Report 2013003

Inspection areas are listed in the attachments below.

Please provide the requested information on or before May 3, 2013.

Please submit this information using the same lettering system as below. For example, all contacts and phone numbers for Inspection Procedure 71124.01 should be in a file/folder titled "1- A," applicable organization charts in file/folder "1- B," etc.

If information is placed on *ims.certrec.com*, please ensure the inspection exit date entered is at least 30 days later than the onsite inspection dates, so the inspectors will have access to the information while writing the report.

In addition to the corrective action document lists provided for each inspection procedure listed below, please provide updated lists of corrective action documents at the entrance meeting. The dates for these lists should range from the end dates of the original lists to the day of the entrance meeting.

If more than one inspection procedure is to be conducted and the information requests appear to be redundant, there is no need to provide duplicate copies. Enter a note explaining in which file the information can be found.

If you have any questions or comments, please contact Larry Ricketson at (817) 200-1165 or Larry.Ricketson@nrc.gov.

PAPERWORK REDUCTION ACT STATEMENT

This letter does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing information collection requirements were approved by the Office of Management and Budget, control number 3150-0011.

2. Occupational ALARA Planning and Controls (71124.02)
Date of Last Inspection: September 24, 2012

A. List of contacts and telephone numbers for ALARA program personnel

B. Applicable organization charts

C. Copies of audits, self-assessments, and LERs, written since date of last inspection, focusing on ALARA

D. Procedure index for ALARA Program

E. Please provide specific procedures related to the following areas noted below. Additional Specific Procedures may be requested by number after the inspector reviews the procedure indexes.
   1. ALARA Program
   2. ALARA Committee
   3. Radiation Work Permit Preparation

F. A summary list of corrective action documents (including corporate and subtiered systems) written since date of last inspection, related to the ALARA program. In addition to ALARA, the summary should also address Radiation Work Permit violations, Electronic Dosimeter Alarms, and RWP Dose Estimates

   NOTE: The lists should indicate the significance level of each issue and the search criteria used. Please provide documents which are "searchable."

G. List of work activities greater than 1 rem, since date of last inspection. Include original dose estimate and actual dose.

H. Site dose totals and 3-year rolling averages for the past 3 years (based on dose of record)

I. Outline of source term reduction strategy

4. Occupational Dose Assessment (Inspection Procedure 71124.04)

Date of Last Inspection: August 15, 2011

A. List of contacts and telephone numbers for the following areas:
   1. Dose Assessment personnel

B. Applicable organization charts

C. Audits, self assessments, vendor or NUPIC audits of contractor support, and LERs written since date of last inspection, related to:
   1. Occupational Dose Assessment

D. Procedure indexes for the following areas
   1. Occupational Dose Assessment

E. Please provide specific procedures related to the following areas noted below. Additional Specific Procedures will be requested by number after the inspector reviews the procedure indexes.
   1. Radiation Protection Program
   2. Radiation Protection Conduct of Operations
   3. Personnel Dosimetry Program
   4. Radiological Posting and Warning Devices
   5. Air Sample Analysis
   6. Performance of High Exposure Work
   7. Declared Pregnant Worker
   8. Bioassay Program

F. List of corrective action documents (including corporate and subtiered systems) written since date of last inspection, associated with:
   1. NVLAP accreditation
   2. Dosimetry (TLD/OSL, etc.) problems
   3. Electronic alarming dosimeters
   4. Bioassays or internally deposited radionuclides or internal dose
   5. Neutron dose

   NOTE: The lists should indicate the significance level of each issue and the search criteria used.

G. List of positive whole body counts since date of last inspection, names redacted if desired

H. Part 61 analyses/scaling factors