



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV
612 EAST LAMAR BLVD, SUITE 400
ARLINGTON, TEXAS 76011-4125

EA-10-182

August 11, 2010

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

SUBJECT: WOLF CREEK GENERATING STATION - NRC INTEGRATED INSPECTION
REPORT 05000482/2010003 AND EXERCISE OF ENFORCEMENT
DISCRETION

Dear Mr. Sunseri:

On June 30, 2010, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Wolf Creek Generating Station. The enclosed integrated inspection report documents the inspection findings, which were discussed on July 7, 2010, with you, and other members of your staff.

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.

This report documents one licensee-identified violation which was determined to be of very low safety significance. This report also documents three NRC identified findings of very low safety significance (Green). All four of these findings were determined to involve violations of NRC requirements. However, because of the very low safety significance and because they are entered into your corrective action program, the NRC is treating these findings as noncited violations, consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest the violations or the significance of the noncited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001, with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 612 E. Lamar Blvd, Suite 400, Arlington, Texas, 76011-4125; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the Wolf Creek Generating Station. In addition, if you disagree with the crosscutting aspect assigned to any finding 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, and its enclosure, will be available electronically for public inspection in the NRC Public Document

Room or from the Publicly Available Records component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Geoffrey B. Miller, Chief
Project Branch B
Division of Reactor Projects

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

Enclosure
Inspection Report 05000482/2010003
w/Attachment: Supplemental Information

cc w/Enclosure:

Site Vice President
Wolf Creek Nuclear Operating Corporation
P.O. Box 411
Burlington, KS 66839

Jay Silberg, Esq.
Pillsbury Winthrop Shaw Pittman LLP
2300 N Street, NW
Washington, DC 20037

Supervisor Licensing
Wolf Creek Nuclear Operating Corporation
P.O. Box 411
Burlington, KS 66839

Chief Engineer
Utilities Division
Kansas Corporation Commission
1500 SW Arrowhead Road
Topeka, KS 66604-4027

Wolf Creek Nuclear Operating Corporation - 3 -
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Office of the Governor
State of Kansas
Topeka, KS 66612

Attorney General
120 S.W. 10th Avenue, 2nd Floor
Topeka, KS 66612-1597

County Clerk
Coffey County Courthouse
110 South 6th Street
Burlington, KS 66839

Chief, Radiation and Asbestos
Control Section
Kansas Department of Health and
Environment
Bureau of Air and Radiation
1000 SW Jackson, Suite 310
Topeka, KS 66612-1366

Chairperson, Radiological Assistance Committee
Region VII
Federal Emergency Management Agency
Department of Homeland Security
9221 Ward Parkway
Suite 300
Kansas City, MO 64114-3372

Electronic distribution by RIV:

Regional Administrator (Elmo.Collins@nrc.gov)
 Deputy Regional Administrator (Chuck.Casto@nrc.gov)
 DRP Acting Director (Tony.Vegel@nrc.gov)
 DRP Acting Deputy Director (Troy.Pruett@nrc.gov)
 DRS Director (Roy.Caniano@nrc.gov)
 DRS Acting Deputy Director (Jeff.Clark@nrc.gov)
 Senior Resident Inspector (Chris.Long@nrc.gov)
 Resident Inspector (Charles.Peabody@nrc.gov)
 WC Administrative Assistant (Shirley.Allen@nrc.gov)
 Branch Chief, DRP/B (Geoffrey.Miller@nrc.gov)
 Senior Project Engineer, DRP/B (Rick.Deese@nrc.gov)
 Project Engineer, DRP/B (Greg.Tutak@nrc.gov)
 Project Engineer, DRP/B (Nestor.Makris@nrc.gov)
 Reactor Inspector, DRP/B (Christine.Denissen@nrc.gov)
 Public Affairs Officer (Victor.Dricks@nrc.gov)
 Public Affairs Officer (Lara.Uselding@nrc.gov)
 Project Manager (Balwant.Singal@nrc.gov)
 Branch Chief, DRS/TSB (Michael.Hay@nrc.gov)
 RITS Coordinator (Marisa.Herrera@nrc.gov)
 Regional Counsel (Karla.Fuller@nrc.gov)
 Congressional Affairs Officer (Jenny.Weil@nrc.gov)
 OEmail Resource
 ROPreports
 DRS/TSB STA (Dale.Powers@nrc.gov)
 OEDO RIV Coordinator (Margie.Kotzalas@nrc.gov)
 Executive Technical Assistant (John.Giessner@nrc.gov)
 Branch Chief, DRS/OB (Mark.Haire@nrc.gov)
 Senior Enforcement Specialist, (Ray.Kellar@nrc.gov)

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RWD for	RWD for	/RA/	/RA/	/RA/	
8/11/2010	8/11/2010	8/2/2010	8/2/2010	7/29/2010	
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NUCLEAR REGULATORY COMMISSION

REGION IV

Docket: 05000482

License: NPF-42

Report: 05000482/2010003

Licensee: Wolf Creek Nuclear Operating Corporation

Facility: Wolf Creek Generating Station

Location: 1550 Oxen Lane SE
Burlington, Kansas

Dates: April 1 through June 30, 2010

Inspectors: C. Long, Senior Resident Inspector
C. Peabody, Resident Inspector
R. Deese, Senior Project Engineer
G. Guerra, CHP, Emergency Preparedness Inspector
C. Graves, Health Physics Inspector
N. Green, Health Physics Inspector
G. Apger, Operations Engineer

Approved By: G. Miller, Chief, Project Branch B
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000482/2010002, 4/01/2010 – 6/30/2010; Wolf Creek Generating Station, Integrated Resident and Regional Report; Flood Protection, Operability Evaluations and Identification and Resolution of Problems.

The report covered a 3-month period of inspection by resident inspectors and one announced baseline inspection by region-based inspectors. Three Green noncited violations of significance were identified. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, "Significance Determination Process." Findings for which the significance determination process does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified Findings and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a green noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," after Wolf Creek failed to provide adequate design control measures for verifying the adequacy of the flooding analysis for the auxiliary feedwater pipe rooms 1206 and 1207. Wolf Creek failed to identify piping that was seismically unqualified and that if ruptured could potentially overwhelm the floor drains. Wolf Creek re-analyzed the piping and determined it would not rupture during an earthquake. Flooding of the room could have caused all three of the auxiliary feedwater pump suction pressure transmitters to fail and inhibit automatic swap to essential service water. The licensee placed this issue in their corrective action program as Condition Report 26050.

The inspectors determined that the incorrect calculation assumption in the flooding analysis of record was the performance deficiency. This finding was determined to be more than minor because it impacted the Mitigating Systems Cornerstone attribute of the design control and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," the finding was determined to have very low safety significance because the deficiency was confirmed not to result in loss of operability or functionality. This finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program because the licensee's evaluation focused on the probability of equipment failure leading to a flooding event rather than the stated design basis of the facility [P.1(c)] (Section 1R06).

- Green. The inspectors identified a violation of Technical Specification 5.4.1.a, "Procedures," for the failure of maintenance personnel to provide an adequate work order that included critical acceptance criteria for the emergency diesel generator B. On October 22, 2010, emergency diesel generator A failed because excessive power supply voltage ripple caused its speed switch to actuate while in

standby. Emergency diesel generator B also failed voltage ripple tests on October 27, 2009. On October 27, 2009, voltage ripple was at 2,015 mV, but no acceptance criteria were specified in Work Order 09-321599-000. Corrective action was not taken until March 2010 and subsequent evaluation of the issue did not identify the lack of acceptance criteria in the work order. The licensee placed this issue into the corrective action program as Condition Report 26651.

The inspectors determined that the failure to replace a power supply that was degraded below its acceptance criteria was the performance deficiency. This finding is more than minor because it affected the Mitigating Systems Cornerstone attribute of availability and reliability and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," the finding was determined to have very low safety significance because the deficiency was confirmed not to result in loss of operability or functionality. This finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program because several work groups failed to question the March 17, 2010, results and initiate a condition report [P.1(a)] (Section 1R15).

- Green. The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure of the licensee to ensure the design of the emergency diesel local annunciator power supply circuit such that its failure would not cause failure of the associated emergency diesel generator. On October 22, 2009, Wolf Creek was defueled when the control room received annunciators for emergency diesel generator A. The power supply for the local annunciators had input enough noise or voltage spikes on to the safety-related power wires to cause the speed switch to actuate while the engine was in standby. This inhibited engine start. The power supply was replaced and emergency diesel generator A was returned to service on October 23, 2009. Condition Report 21039 examined this failure but failed to identify that the vendor's circuit analysis did not consider voltage ripple as a failure mode and that the requirements of IEEE 384-1974 were not met. The nonsafety-related power supply was not supposed to be able to cause the failure of the safety-related emergency diesel generator. The licensee placed this issue into the corrective action program as Condition Reports 25663, 24867, and 25479.

The inspectors determined the failure to ensure that the licensing basis for the emergency diesel generators was being met to be the performance deficiency. This finding was more than minor because it was associated with the Mitigating Systems Cornerstone attribute of human performance and it affected the objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Using Inspection Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," the finding was determined to have very low safety significance because emergency diesel generator A was out of service for less than 24 hours. This finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action

program because the licensee failed to evaluate this failure mode against the vendor's circuit analysis [P.1(c)] (Section 4OA2).

B. Licensee-Identified Violations

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

REPORT DETAILS

Summary of Plant Status

The plant started the inspection period at 100 percent rated thermal power. On June 6, 2010, Wolf Creek reduced power to approximately 80 percent due to inoperability of both trains of component cooling water. The unit returned to full power on June 6, 2010. On June 17, 2010, Wolf Creek reduced power to 97 percent to stop heater drain pump A. The unit returned to full power later on June 17, 2010, and remained at full power for the duration of the inspection period.

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection (71111.01)

.1 Summer Readiness for Offsite and Alternate-ac Power

a. Inspection Scope

On June 28, 2010, the inspectors performed a review of the licensee's preparations for summer weather for selected systems, including conditions that could lead to loss-of-offsite power and conditions that could result from high temperatures. The inspectors reviewed the licensee's procedures affecting these areas and the communications protocols between the transmission system operator and the plant to verify that the appropriate information was being exchanged when issues arose that could affect the offsite power system. Examples of aspects considered in the inspectors' review included:

- The coordination between the transmission system operator and the plant during off-normal or emergency events
- The explanations for the events
- The estimates of when the offsite power system would be returned to a normal state
- The notifications from the transmission system operator to the plant when the offsite power system was returned to normal

During the inspection, the inspectors focused on plant-specific design features and the licensee's procedures used to mitigate or respond to adverse weather conditions. Additionally, the inspectors reviewed the Updated Safety Analysis Report (USAR) and performance requirements for systems selected for inspection, and verified that operator actions were appropriate as specified by plant-specific procedures. Specific documents reviewed during this inspection are listed in the attachment. The inspectors also reviewed corrective action program items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their corrective action program in accordance with station corrective action procedures.

These activities constitute completion of one readiness for summer weather affect on offsite and alternate ac power sample as defined in Inspection Procedure (IP) 71111.01-05.

b. Findings

No findings were identified.

.2 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 March 19, 2010, the inspectors reviewed the licensee's overall preparations/protection for the expected weather conditions. On March 19, 2010, the inspectors walked down the protected area transformer yard because their functions could be affected as a result of high winds and tornado-generated missiles. The inspectors evaluated the licensee staff's preparations against the site's procedures and determined that 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 tornado. The inspectors evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant. Additionally, the inspectors reviewed the USAR and performance requirements for 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 readiness for impending adverse weather condition sample as defined in IP 71111.01-05.

b. Findings

No findings were identified.

1R04 Equipment Alignments (71111.04)

.1 Partial Walkdown

a. Inspection Scope

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

- June 5, 2010, component cooling water train B during voiding on train A

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, USAR, 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 walked down accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the corrective action program with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

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

b. Findings

No findings were identified.

2 Semi-Annual Complete System Walkdown

a. Inspection Scope

On June 30, 2010, the inspectors performed a complete system alignment inspection of the 125 Vdc 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 walked down the system to review mechanical and electrical equipment line ups, 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 walk down sample as defined by IP 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 1, 2010, lower cable spreading room
- June 19, 2010, control building 4160 V vital switchgear rooms
- May 16, 2010, auxiliary building 1974'

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 three quarterly fire-protection inspection samples as defined by IP 71111.05-05.

b. Findings

No findings were identified.

.2 Annual Fire Protection Drill Observation (71111.05A)

a. Inspection Scope

On May 27, 2010, the inspectors observed the fire brigade activation for a simulated fire in the 2032' elevator lobby between the control building and turbine building. 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 at the drill debrief, and took appropriate corrective actions. Specific attributes evaluated were: (1) proper wearing of turnout gear and self-contained breathing apparatus; (2) proper use and layout of fire hoses; (3) employment of appropriate fire fighting techniques; (4) sufficient firefighting equipment brought to the scene; (5) effectiveness of fire brigade leader communications, command, and control;

(6) search for victims and propagation of the fire into other plant areas; (7) smoke removal operations; (8) utilization of pre planned strategies; (9) adherence to the preplanned drill scenario; and (10) drill objectives.

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

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors reviewed the USAR the flooding analysis, and plant procedures to assess seasonal susceptibilities involving internal flooding; reviewed the USAR and corrective action program to determine if licensee personnel identified and corrected flooding problems; inspected underground bunkers/manholes to verify the adequacy of sump pumps, level alarm circuits, cable splices subject to submergence, and drainage for bunkers/manholes; verified that operator actions for coping with flooding can reasonably achieve the desired outcomes; and walked down the one area listed below to verify the adequacy of equipment seals located below the flood line, floor and wall penetration seals, watertight door seals, common drain lines and sumps, sump pumps, level alarms and control circuits, and temporary or removable flood barriers. Specific documents reviewed during this inspection are listed in the attachment.

- March 9, 2010, Rooms 1207/1206 - 1988' auxiliary feedwater

These activities constitute completion of one flood protection measures inspection samples as defined by IP 71111.06-05.

b. Findings

Introduction. The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," after Wolf Creek failed to provide adequate design control measures for verifying the adequacy of the flooding analysis for the auxiliary feedwater pipe chase rooms 1206 and 1207.

Description. The inspectors identified that Wolf Creek failed to maintain an adequate design control calculation for the flooding analysis in the auxiliary feedwater pipe chase rooms. The flooding analysis of record LE-M-002, Revision 0, "Flood Levels in Aux. Bldg Rooms 1206 and 1207 Due to Pipe Break," was performed on September 19, 2002. The analysis determined that the 10-inch piping from the condensate storage tank going to the main condenser was the limiting source of potential flooding. This line is used to fill the condenser if required. In 2002, Wolf Creek realized that the 10-inch line could overwhelm the floor drains. The calculation was updated in 2002 to reflect that the 10-inch line, as a corrective action, would now have an intermediate valve throttled to 25 percent open. Throttling a valve preserved an acceptable flood height. Since this calculation was examined in 2002 by the licensee, this issue was not considered an old design issue.

The inspectors found that the adjacent 6-inch condensate reject line was not examined. The rooms have two numbers (1206 and 1207) but have no intervening walls and are effectively one room for flooding considerations. The room contains safety-related transmitters used to swap the auxiliary feedwater pumps' suction source from the condensate storage tank to the essential service water system. These transmitters are located 22 inches above floor level. The 2002 calculation determined that the flood height would be 17 inches above the floor. The following incorrect licensee assumptions were discovered due to NRC inspectors' questions:

- The first assumption of the calculation was that the drain lines would be dry before the break or crack, consistent with the USAR. The inspectors observed appreciable steam coming from the drains during recent occurrences of loss of offsite power and automatic starts of the turbine-driven auxiliary feedwater pump. The exhaust from the turbine-driven auxiliary feedwater pump casing and the associated trip throttle valve is clearly seen to be pressurizing some of the floor drain piping with steam. This challenged the ability of the drains to perform their function.
- Because the 6-inch condensate reject bounding pipe was not seismically supported, a guillotine shear had to be one of the assumptions consistent with the USAR. Both the condensate storage tank and the condensate pump discharge should have been considered as supplying the break from both ends.
- The Wolf Creek USAR, Section 3.6.2 stated that offsite power was assumed not to be lost if it produced greater flooding.
- The flooding calculation did not use the condenser as a source of water when the 10-inch condensate storage tank to condenser makeup line would shear. The line is also not seismically qualified.
- Wolf Creek USAR, Section 3.6-2, stated, that a single active failure was assumed in systems used to mitigate the consequence of the postulated piping failure. The Wolf Creek analysis did not identify any single active failure components. The worst case single active failure would have been the check valve between the condensate pumps and the condensate tank in the 6-inch condensate reject line. However, the single failure criterion did not apply to nonsafety equipment and so no credit could be taken for the check valve.
- Four credited floor drains in the room had wire mesh screen over the drain pipe limiting the available drain area.
- USAR Section 3.6.1.1.e. stated that offsite power is not assumed to be lost if it produces a greater amount of flooding. In this case, the condensate pumps continue to operate and feed the room flooding.

On March 10, 2010, Wolf Creek initiated Condition Report 24073 to examine the issue. On March 15, 2010, Wolf Creek performed an immediate operability determination that stated that the floor drain capacity was adequate for the 10-inch hotwell makeup line with the steam in the floor drain piping.

On May 10, 2010, the licensee completed its evaluation of the issue under Condition Report 24073 and excluded the aforementioned questions as not credible and did not re-analyze the flooding calculation. Wolf Creek was able to show that the 10-inch line always remained above the water inside the condenser and that it was not a source of flooding. Wolf Creek was also able to show that the drains' tee-in area limited each pair of two drains to the equivalent drainage area for only one drain, and that the mesh screens were not significant. The licensee incorrectly evaluated the rest of the above factors although they were in the Wolf Creek USAR. On June 9, 2010, the inspectors discussed the flooding with Wolf Creek again, and, as a result, Wolf Creek isolated the 6-inch condensate reject line at the tank and at the pump discharge to support continued operability. The leakage margin of five inches of flood height was lost due to inclusion of a higher condensate tank loss rate. This flood height did not support a revised operability determination as operable. Wolf Creek stated that the suction transmitters are not qualified for submergence. Engineering stated that they would electrically short, fail high, and inhibit automatic auxiliary feedwater suction swap to essential service water. The loss of a suction source would damage the auxiliary feedwater pumps. The Wolf Creek USAR provides a delay of 30 minutes for manual operator action to mitigate the flood but engineering stated the 30 minute time could not be met. These discussions resulted in Wolf Creek writing Condition Report 26050 for the flawed engineering assessment. Wolf Creek operations also initiated Condition Report 26046 and isolated the 6-inch condensate reject line to the condensate storage tank to ensure operability of all three trains of auxiliary feedwater.

Wolf Creek subsequently re-analyzed the 6-inch condensate reject pipe and determined that the pipe could withstand a safe shutdown earthquake. The calculation did not meet the quality requirements to be safety related, but it was able to demonstrate functionality necessary to evaluate the risk impact described below. The inspectors did not find that it restored compliance with the USAR, however; Wolf Creek planned to continue the qualification effort to establish the pipe as seismic Category I by installing piping restraints as a corrective action.

Analysis. The inspectors determined that the incorrect calculation assumptions in the flooding analysis of record was the performance deficiency. This finding was determined to be more than minor because it impacted the Mitigating Systems Cornerstone attribute of the design control and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," the finding was determined to have very low safety significance because the deficiency was confirmed not to result in loss of operability or functionality of the suction pressure transmitters. This finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program because the licensee's evaluation focused on the probability of equipment failure leading to a flooding event rather than the stated design basis of the facility [P.1(c)].

Enforcement. Title 10 of the Code of Federal Regulations, Part 50, Appendix B, Criteria III, "Design Control," requires that measures shall be established to assure that applicable regulatory requirements and design bases are correctly translated into specifications and that design control measures are provided to verify or check the adequacy of the design. Additionally, the performance of design reviews, the use of alternate or simplified calculation methods, or the performance of a suitable testing

program will assure the adequacy of the design. Contrary to the above, from June 4, 1985, to June 17, 2010, Wolf Creek did not establish measures or verify the room flooding design to assure that the applicable design basis of piping and floor drains were adequate to support the assumptions in the flooding analysis for Room 1206/1207. Specifically, analysis of record calculation LE-M-002, Revision 0, "Flood Levels in Aux. Bldg Rooms 1206 and 1207 Due to Pipe Break," contained unsupported assumptions on the maximum flood source and drain rate. Because of the very low safety significance and Wolf Creek's action to place this issue in their corrective action program as condition report 26050, this violation is being treated as a noncited violation in accordance with Section VI.A.1 of the Enforcement Policy: NCV 05000482/2010002-01, "Failure to Maintain an Adequate Flooding Analysis for Auxiliary Feedwater Trains."

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 containment cooling heat exchanger D. 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 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 heat sink inspection sample as defined in IP 71111.07-05.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11)

a. Inspection Scope

On June 29, 2010, the inspectors observed a crew of licensed operators in the plant's simulator to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- Licensed operator performance
- Crew's clarity and formality of communications
- Crew's ability to take timely actions in the conservative direction
- Crew's prioritization, interpretation, and verification of annunciator alarms

- Crew's correct use and implementation of abnormal and emergency procedures
- Control board manipulations
- Oversight and direction from supervisors
- Crew's ability to identify and implement appropriate technical specification actions and emergency plan actions and notifications

The inspectors compared the crew's performance in these areas to pre-established operator action expectations and successful critical task completion requirements. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion one quarterly licensed-operator requalification program sample as defined in IP 71111.11.

b. Findings

No findings were identified.

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

a. Inspection Scope

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

- March 30, 2010, walkdown while centrifugal charging pump A out of service
- May 11, 2010, crane in transformer yard
- June 28, 2010, through-wall leakage on essential service water train B

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 three maintenance risk assessments and emergent work control inspection samples as defined by IP 71111.13-05.

b. Findings

No findings were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:

- April 5, 2010, OE BB-10-005 – Reactor coolant pump D seal injection line hanger bracket angle
- March 17, 2010, Emergency diesel generator B power supply voltage ripple

The inspectors selected these potential operability issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that technical specification operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the technical specifications and USAR to the licensee's evaluations, to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors also 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 two operability evaluations inspection samples as defined in IP-71111.15-05

b. Findings

Introduction. On April 14, 2010, the inspectors identified a violation of Technical Specification 5.4.1.a, "Procedures," for a work order that failed to include critical acceptance criteria for the emergency diesel generator B.

Description. On October 22, 2010, emergency diesel generator A failed because excessive power supply voltage ripple caused its speed switch to actuate while in standby. Additionally, emergency diesel generator B failed voltage ripple tests on October 27, 2009, when voltage ripple was at 2,015 mV, but no acceptance criteria were specified in Work Order 09-321599-000. Corrective action was not taken at that time. Acceptance criteria for the voltage ripple had been previously established due to the October 22, 2009, emergency diesel generator A failure. According to Work Order 09-321599-000, maintenance supervision and the control room were informed by maintenance. Engineering later stated that it was informed but that an error was made in not following-up on the voltage ripple results. On March 17, 2010, emergency diesel generator B was declared inoperable due to a degraded annunciator power supply. The power supply had an excessive voltage ripple at 2,895 mV with 500 mV as the allowed voltage ripple. The power supply was tested as a quarterly interim action to ensure that the power supplies did not degrade to a level that would impact the diesel.

Wolf Creek wrote condition reports 24268, 24294, 24292, and 24356 for the emergency diesel generator B power supply voltage ripple that was discovered on March 17, 2010.

Condition report 24356 was tasked with evaluating if a degraded condition was not identified. The inspectors reviewed the condition reports and noted that Condition Report 24356 discussed the failed voltage check on October 27, 2009, but was not acted upon. However, Apparent Cause 24356 attributed the missed degraded condition to Apparent Cause 21039 and the corrective action review board for not examining the extent of condition more thoroughly to re-discover that emergency diesel generator B had a degraded power supply. Apparent Cause 24356 also attributed the missed degraded condition to a high workload for the system engineer. Apparent Cause 21039 was completed approximately 3 months after the refueling outage when the degraded condition was not acted upon. The inspectors disagreed with the causal evaluation since none of the stated causes could have broken the chain of events to prevent emergency diesel generator B being returned to service after the outage with a degraded power supply. None of the condition reports identified a lack of acceptance criteria in Work Order 09-321599-000 as a cause. Most of the condition reports focused on the fact that the excessive ripple for emergency diesel generator B did not cause a loss of operability and that the March 17, 2010, ripple check was a positive interim action. The inspectors agreed that the March 17, 2010, check was good for nuclear safety, but negative because the degraded condition was missed in October 2009. The inspectors did not find any condition reports dated on October 27, 2009, or shortly thereafter which stated that emergency diesel generator B failed its voltage ripple check. Condition Report 26651 was written to address the failure to include acceptance criteria in Work Order 09-321599-000 on the emergency diesel local annunciator power supply.

Operability was not evaluated for the emergency diesel generator B. After operations declared emergency diesel generator B inoperable on March 17, 2010, the followup evaluation stated that the diesel was not inoperable until 125 Vdc power was removed from the circuit to replace the power supply. No other explanation for the voltage ripple impact exceeding its acceptance criteria was provided. Condition Report 21039 was initiated to examine the cause of the October 22, 2010, failure of the emergency diesel generator A power supply. The evaluation stated, in part, that the electrical noise on the dc supply circuit would not prevent the speed switches from actuating, but the point of actuation may not be within the tolerance band. Condition Report 21039 did not examine the impact of the voltage ripple on a running diesel. Condition Report 21039 did identify external operating experience in which voltage ripple caused a speed switch to change state and trip a running diesel. To ensure operability, the inspectors interviewed engineers and examined wiring diagrams with them and concluded that if the speed switch contacts changed position while the engine was running, that the engine would not trip.

Analysis. The inspectors determined that the failure to replace a degraded power supply that was below its acceptance criteria was the performance deficiency. The inspectors determined that this finding was more than minor because it is associated with the equipment performance attribute for the Mitigating Systems Cornerstone and it affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Using Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," the finding was determined to have very low safety significance because the finding was confirmed not to result in loss of operability or functionality. This finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program because several work

groups failed to question the March 17, 2010, results and initiate a condition report [P.1(a)].

Enforcement. Technical Specification 5.4.1.a, "Procedures," requires that written procedures be established and implemented covering activities specified in Appendix A, "Typical Procedures for Pressurized Water Reactors," of Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operation)," February 1978. Regulatory Guide 1.33, Appendix A, Section 9 requires, in part, that maintenance that can affect the performance of safety-related equipment be performed in accordance with written instructions appropriate to the circumstances. Contrary to the above, on October 27, 2009, Wolf Creek implemented Work Order 09-321566-000 which did not contain instructions appropriate to the circumstances because no acceptance criteria were given for the as-found condition. Because of the very low safety significance of this finding and because the licensee has entered this issue into the corrective action program as Condition Report 26651, this violation is being treated as a noncited violation in accordance with Section VI.A.1 of the Enforcement Policy: NCV 05000482/2010003-02, "Lack of Acceptance Criteria Allows Degraded EDG Power Supply to Remain Inservice."

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

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

- March 31, 2010, STN BG-202, chemical and volume control system valve test, valve BGHV8375A
- March 31, 2010, STS BG-100 , centrifugal charging pump A
- March 31, 2010, MPE E051-01, battery charger operational test – PK023
- March 31, 2010, STN EJ-100A, residual heat removal pump A

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:

- 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 USAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with postmaintenance tests to determine whether the licensee was identifying problems and entering them 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 four post maintenance testing inspection sample(s) as defined in IP 71111.19-05.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the USAR, procedure requirements, and technical specifications to ensure that the three 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.

- March 29, 2010, STS KJ-005A, Manual/Auto Start, Sync, and Loading of EDG NE01”
- March 31, 2010, STS EG-100A, Residual Heat Removal Inservice Testing
- April 19, 2010, STS EN-100B, Containment Spray Pump Inservice Testing
- April 28, 2010, STS EN-100A, Containment Spray Pump Inservice Testing
- May 15, 2010, STS PE-015, Containment Mini-Purge and Shutdown Purge Containment Isolation Valve Local Leak Rate Test

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

These activities constitute completion of five surveillance testing inspection samples as defined in IP 71111.22-05.

b. Findings

No findings were identified.

1EP2 Alert Notification System Testing (71114.02)

a. Inspection Scope

The inspectors discussed with licensee staff the operability of offsite siren emergency warning systems, tone alert radio systems, and backup alerting methods, to determine the adequacy of licensee methods for testing the alert and notification system in accordance with 10 CFR Part 50, Appendix E. The licensee’s alert and notification system testing program was compared with criteria in NUREG-0654, “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants,” Revision 1; FEMA Report REP-10, “Guide for the Evaluation of Alert and Notification Systems for Nuclear Power Plants”; and the licensee’s current FEMA-approved alert and notification system design report, “Design Report for Wolf Creek Nuclear Operating Company,” dated May 2, 2008. Additional documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.02-05.

b. Findings

No findings were identified.

1EP3 Emergency Response Organization Augmentation Testing (71114.03)

a. Inspection Scope

The inspector discussed with licensee staff the operability of primary and backup systems for augmenting the on-shift emergency response staff to determine the adequacy of licensee methods for staffing emergency response facilities in accordance with their emergency plan. The inspector evaluated the licensee's ability to staff the emergency response facilities in accordance with the licensee's emergency plan and the requirements of 10 CFR Part 50, Appendix E. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.03-05.

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors performed an onsite review of Emergency Action Level Procedure APF 06-002-01, "Emergency Action Levels," Revision 14, submitted to the NRC by letter dated April 13, 2010. This revision changed terminology used in the emergency action levels to be consistent with the security plan wording.

The revisions were compared to previous revisions, to the criteria of NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, to NUMARC/NESP-007, "Methodology for Development of Emergency Action Levels," Revision 2, and to the standards in 10 CFR 50.47(b) to determine if the revision adequately implemented the requirements of 10 CFR 50.54(q). This review was not documented in a safety evaluation report and did not constitute approval of licensee-generated changes; therefore, this revision is subject to future inspection. Additional documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.04-05.

b. Findings

No findings were identified.

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies (71114.05)

a. Inspection Scope

The inspectors reviewed the licensee's corrective action program requirements in Procedure AP 28A-100, "Condition Reports," Revision 11. The inspectors reviewed

summaries of corrective action program documents assigned to the emergency preparedness department and emergency response organization between December 2008 and March 2010 and selected 31 for detailed review against the program requirements. The inspectors evaluated the response to the corrective action requests to determine the licensee's ability to identify, evaluate, and correct problems in accordance with the licensee program requirements, planning standard 10 CFR 50.47(b)(14), and 10 CFR Part 50, Appendix E. The inspectors also reviewed licensee audits, assessments, drill reports, and after action reports to determine whether the licensee was identifying weaknesses and deficiencies in the emergency preparedness program. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.05-05.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

Training Observations

a. Inspection Scope

The inspectors observed a simulator training evolution for licensed operators on April 27, 2010, which required emergency plan implementation by a licensee operations crew. This evolution was planned to be evaluated and included in performance indicator data regarding drill and exercise performance. The inspectors observed event classification and notification activities performed by the crew. The inspectors also attended the post evolution critique for the scenario. The focus of the inspectors' activities was to note any weaknesses and deficiencies in the crew's performance and ensure that the licensee evaluators noted the same issues and entered them into the corrective action program. As part of the inspection, the inspectors reviewed the scenario package and other documents listed in the attachment. These activities constitute completion of one sample as defined in IP 71114.06-05.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstone: Occupational and Public Radiation Safety

2RS01 Radiological Hazard Assessment and Exposure Controls (71124.01)

a. Inspection Scope

This area was inspected to: (1) review and assess licensee's performance in assessing the radiological hazards in the workplace associated with licensed activities and the

implementation of appropriate radiation monitoring and exposure control measures for both individual and collective exposures, (2) verify the licensee is properly identifying and reporting Occupational Radiation Safety Cornerstone performance indicators, and (3) identify those performance deficiencies that were reportable as a performance indicator and which may have represented a substantial potential for overexposure of the worker.

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 the radiation protection manager, radiation protection supervisors, and radiation workers. The inspectors performed walkdowns of various portions of the plant, performed independent radiation dose rate measurements and reviewed the following items:

- Performance indicator events and associated documentation reported by the licensee in the Occupational Radiation Safety Cornerstone
- The hazard assessment program, including a review of the licensee's evaluations of changes in plant operations and radiological surveys to detect dose rates, airborne radioactivity, and surface contamination levels
- Instructions and notices to workers, including labeling or marking containers of radioactive material, radiation work permits, actions for electronic dosimeter alarms, and changes to radiological conditions
- Programs and processes for control of sealed sources and release of potentially contaminated material from the radiologically controlled area, including survey performance, instrument sensitivity, release criteria, procedural guidance, and sealed source accountability
- Radiological hazards control and work coverage, including the adequacy of surveys, radiation protection job coverage, and contamination controls; the use of electronic dosimeters in high noise areas; dosimetry placement; airborne radioactivity monitoring; controls for highly activated or contaminated materials (nonfuel) stored within spent fuel and other storage pools; and posting and physical controls for high radiation areas and very high radiation areas
- Radiation worker and radiation protection technician performance with respect to radiation protection work requirements
- Audits, self-assessments, and corrective action documents related to radiological hazard assessment and exposure 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 71124.01-05.

b. Findings

No findings were identified.

2RS02 Occupational As Low As Is Reasonably Achievable (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 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/postjob 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.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 Data Submission Issue

a. Inspection Scope

The inspectors performed a review of the data submitted by the licensee for the first quarter 2010 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

a. Inspection Scope

The inspectors sampled licensee submittals for the Reactor Coolant System Specific Activity performance indicator for the period from the second quarter 2009 through the first quarter 2010. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. 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 1, 2009, through March 31, 2010, 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 IP 71151-05.

b. Findings

No findings were identified.

.3 Reactor Coolant System Leakage

a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system leakage performance indicator for the period from the second quarter 2009 through the first quarter 2010. To determine the accuracy of the performance indicator data reported

during those periods, performance indicator definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, were used. 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 1, 2009, through March 31, 2010, 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 IP 71151-05.

b. Findings

No findings were identified.

.4 Drill/Exercise Performance (EP01)

a. Inspection Scope

The inspectors sampled licensee submittals for the Drill and Exercise Performance, performance indicator for the period from the second quarter 2009 through the first quarter 2010. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the NEI guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator; assessments of performance indicator opportunities during predesignated control room simulator training sessions, performance during the 2009 biennial exercise, and performance during other drills. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of the drill/exercise performance sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.5 Emergency Response Organization Drill Participation (EP02)

a. Inspection Scope

The inspectors sampled licensee submittals for the emergency response organization drill participation performance indicator for the period from the second quarter 2009 through the first quarter 2010. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator

Guideline,” Revision 5, was used. The inspectors reviewed the licensee’s records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the NEI guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator, rosters of personnel assigned to key emergency response organization positions, and exercise participation records. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of the emergency response organization drill participation sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.6 Alert and Notification System (EP03)

a. Inspection Scope

The inspectors sampled licensee submittals for the alert and notification system performance indicator for the period from the second quarter 2009 through the first quarter 2010. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Nuclear Energy Institute Document 99-02, “Regulatory Assessment Performance Indicator Guideline,” Revision 5, was used. The inspectors reviewed the licensee’s records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the Nuclear Energy Institute guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator and the results of periodic alert notification system operability tests. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of the alert and notification system sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.7 Occupational Exposure Control Effectiveness (OR01)

a. Inspection Scope

Cornerstone: Occupational Radiation Safety

The inspectors reviewed performance indicator data for the fourth quarter 2009 through the first quarter 2010. The objective of the inspection was to determine the accuracy and completeness of the performance indicator data reported during these periods. The inspectors used the definitions and clarifying notes contained in NEI Document 99-02, “Regulatory Assessment Performance Indicator Guideline,” Revision 6, as criteria for determining whether the licensee was in compliance.

The inspectors reviewed corrective action program records associated with high radiation area (greater than 1 R/hr) and very high radiation area nonconformances. The inspectors reviewed radiological, controlled area exit transactions greater than 100 millirems. The inspectors also conducted walkdowns of high radiation areas (greater than 1 R/hr) and very high radiation area entrances to determine the adequacy of the controls of these areas.

These activities constitute completion of the occupational exposure control effectiveness sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.8 Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual
Radiological Effluent Occurrences (PR01)

a. Inspection Scope

Cornerstone: Public Radiation Safety

The inspectors reviewed performance indicator data for the fourth quarter 2009 through the first quarter 2010. The objective of the inspection was to determine the accuracy and completeness of the performance indicator data reported during these periods. The inspectors used the definitions and clarifying notes contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, as criteria for determining whether the licensee was in compliance.

The inspectors reviewed the licensee's corrective action program records and selected individual annual or special reports to identify potential occurrences such as unmonitored, uncontrolled, or improperly calculated effluent releases that may have impacted offsite dose.

These activities constitute completion of the radiological effluent technical specifications/offsite dose calculation manual radiological effluent occurrences sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

40A2 Identification and Resolution of Problems (71152)

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

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

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

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

b. Findings

No findings were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

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

The inspectors performed these daily reviews as part of their daily plant status monitoring activities 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 January 1, 2010, through June 30, 2010, 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 a single semi-annual trend inspection sample.

b. Findings

No findings were identified.

.4 Selected Issue Follow-up Inspection

a. Inspection Scope

The inspectors reviewed Wolf Creek's evaluation and corrective actions for an emergency diesel generator failure.

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

b. Findings

Introduction. On April 14, 2010, the inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for failure to design the emergency diesel local annunciator power supply circuit such that its failure would not cause failure of the associated emergency diesel generator.

Description. On October 22, 2009, Wolf Creek was defueled when the control room received annunciators for emergency diesel generator A. Vital bus train B was already out of service for planned maintenance. The power supply for the local annunciators had input enough noise or voltage spikes on to the safety-related power wires to cause the speed switch to actuate while the engine was in standby. The power supply was replaced and emergency diesel generator A was returned to service on October 23, 2009.

Wolf Creek initiated Condition Report 21039 which evaluated the failed power supplies but did not examine why a nonsafety-related power supply was able to cause the failure of a safety-related diesel generator. The condition report attributed the diesel failure to excessive electrical noise or voltage spiking due to a degrading power supply. The inspectors reviewed Section 3A of the USAR. USAR, Section 3A, states that Wolf Creek is designed to meet Regulatory Guide 1.75, "Physical Independence of Electric Systems," Revision 2. Compliance with Regulatory Guide 1.75, in part, ensures compliance with General Design Criterion 17. Regulatory Guide 1.75 requires compliance with IEEE 384-1974, "IEEE Trial-Use of Standard Criteria for Separation of Class IE Equipment and Circuits." IEEE 384-1974, Section 4.5.3, requires that the failure of a nonclass IE devices and circuits be analyzed or tested to ensure that they do not degrade a class IE (or safety related) devices below an acceptable level. Such nonclass IE circuits and devices are considered associated circuits. The inspectors reviewed Wolf Creek's original evaluation from Fairbanks Morse (the vendor) for the emergency diesel generator circuitry. Fairbanks considered possible failure modes of the annunciator power supply and fuses were provided to prevent a short in the nonclass IE circuit from causing a failure of the class IE circuit. Electrical noise or voltage ripple from the power supply was not evaluated as a failure mode. Both classes of circuit share input power from the same class IE 125 Vdc source. The original evaluation did not consider excessive electrical noise from the nonclass IE annunciator power supply as a failure mode of the class IE speed switch.

The inspectors reviewed this issue and noted a modification was performed to this circuit in 1991 in response to electrical noise which caused incorrect actuation of the diesel speed switch. Capacitors were installed between the ground and positive lead and the ground and negative lead. Efforts to determine the cause of the electrical noise were not made but these safety-related capacitors reduced the noise on the circuit. Condition Report 21039 found that there were no problems with the engine speed switch from 1991 until 2006. In December 2006, emergency diesel generator A had its speed switch fail calibration due to excessive noise from the annunciator power supply. The diesel was not considered failed because Condition Report 21039 stated: "the electrical noise on the DC supply circuit would not prevent the speed switches from actuating, but the point of actuation may not be within the tolerance band." As-found ripple variable was found to be 1.41 V at that time. On November 6, 2009, emergency diesel generator A local annunciators would not test. On November 7, 2009, emergency diesel generator A local annunciator power supply failed due to failed transistors while the power supply was only inservice for 16 days. Internal power supply overheating of capacitors was determined to be the cause of failure. The power supply electrical noise and failure did not affect the emergency diesel generator A speed switch. The inspectors discussed the USAR, Condition Report 21039, and the internal operating experience with Wolf Creek and found that Wolf Creek did not consider how or why a nonsafety-related power supply could cause the failure of one or both emergency diesels. Wolf Creek and Condition Report 21039 stopped with the identification of the power supply as the cause and did not consider the independence between circuits. Through several discussions, Wolf Creek initiated Condition Reports 25663, 24867, and 25479.

Analysis. The inspectors determined the failure to ensure that the licensing basis for the emergency diesel generators was being met to be the performance deficiency.

Traditional enforcement does not apply since there were no actual safety consequences or potential for impacting the NRC's regulatory function, and the finding was not the result of any willful violation of NRC requirements or Wolf Creek procedures. This

finding was more than minor because it was associated with the Mitigating Systems Cornerstone attribute of human performance and it affected the objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Using Inspection Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings" this finding was determined to be of very low safety significance because emergency diesel generator A was out of service for less than 24 hours. This finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program because the licensee failed to evaluate this failure mode against the vendor's circuit analysis [P.1(c)].

Enforcement. Title 10 CFR Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants," Criterion III, "Design Control", states, in part, that design control measures shall provide for verifying or checking the adequacy of design. Contrary to the above, prior to April 17, 2010, Wolf Creek failed to verify or check emergency diesel design to ensure that the nonclass IE power supply would not cause the failure of the class IE emergency diesel speed switch. Specifically, the power supply associated circuit was able to cause the failure of the diesel circuit. Because this issue was determined to be of very low safety significance (Green) and was entered into the licensee's corrective action program as Condition Reports 25663, 24867, and 25479, this violation is being treated as a noncited violation in accordance with Section VI.A.1 of the NRC Enforcement Policy: NCV 05000482/2010003-03, "Nonsafety Power Supply Causes Failure of Emergency Diesel Generator A."

40A3 Event Follow-up (71153)

Reactor Downpower Due to Indication of Component Cooling Water Voiding and Response to subsequent Residual Heat Removal Voiding

a. Inspection Scope

From June 1, 2010, to June 21, 2010, the inspectors observed Wolf Creek ultrasonic testing activities related to the gas found in component cooling water system. At 6:28 p.m. CST on June 7, Wolf Creek entered Technical Specification 3.0.3 for both trains of component cooling water being inoperable. A void exceeding the acceptance criteria was found on train B. Train A was already declared inoperable due to voiding at 12:23 p.m. CST on Sunday, June 6, 2010. Ultrasonic testing identified a void larger than the acceptance criteria at a 'tee' junction in the piping. Wolf Creek conservatively initiated a plant shutdown. The inspectors observed the power reduction from the control room and reviewed the event notification. The reactor power reduction was halted at approximately 80 percent. The inspectors interviewed control room operators, management, engineering, and quality control personnel regarding the voiding that led to the power reduction. The inspectors observed negative reactivity additions and turbine load reductions to ensure that technical specification limits such as core delta-flux were met. The inspectors interviewed the same personnel regarding ongoing efforts to quantify the voids, evaluate them, and to determine their source. Inspectors reviewed isometric piping and instrumentation drawings to verify the adequacy of Wolf Creek's actions to remove the gas pockets. During the shutdown, the ultrasonic testing results were re-verified, and the initial results were disproven. The first ultrasonic test found no reflection when probing a void at the 'tee' and interpreted the result as a gas pocket much larger than actual. The second ultrasonic test found the void was well within the

allowable limit. The inspectors reviewed the engineering evaluation that determined the acceptance criteria. A special inspection was initiated for the component cooling water voiding which will document its results in NRC Inspection Report 2010-008. The resident inspectors turned their data over to the special inspection team in accordance with Inspection Procedure (IP) 71153.

These activities constitute completion of one sample in accordance with inspection procedure 71153-05, "Followup of Events and Notices of Enforcement Discretion".

b. Findings

No findings were identified.

40A5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period, the inspectors performed observations of security force personnel and activities to ensure that the activities were consistent with Wolf Creek's security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours.

These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status review and inspection activities.

b. Findings

No findings were identified.

2. (Closed) Temporary Instruction (TI) 2515/179, "Verification of Licensee Responses to NRC Requirement for Inventories of Materials Tracked in the National Source Tracking System Pursuant to Title 10, Code of Federal Regulations, Part 20.2207 (10 CFR 20.2207)"

a. Inspection Scope

An NRC inspection was performed to confirm that the licensee has reported their initial inventories of sealed sources pursuant to 10 CFR 20.2207 and to verify that the National Source Tracking System database correctly reflects the Category 1 and 2 sealed sources in custody of the licensee. The inspectors interviewed personnel and performed the following:

- Reviewed the licensee's source inventory
- Verified the presence of any Category 1 or 2 sources
- Reviewed procedures for and evaluated the effectiveness of storage and handling of sources

- Reviewed documents involving transactions of sources
- Reviewed adequacy of licensee maintenance, posting, and labeling of nationally tracked sources

b. Findings

No findings were identified

2. Exercise of Enforcement Discretion for Licensed Operator Fitness-for-Duty (EA-10-182)

The inspectors performed a follow-up review of Wolf Creek Nuclear Operating Corporation's (WCNOC) actions taken against a licensed operator who violated the facility's fitness-for-duty program.

On September 14, 2009, WCNOC notified the NRC (Event Report 45349) that a licensed operator had reported for work to perform nonlicensed activities with a blood alcohol content in excess of the facility's fitness-for-duty program administrative limit of 0.02 percent. A violation of 10 CFR Part 26 (Fitness-for-Duty Programs) occurs when either the limit of 0.04 percent or the facility's administrative limit has been exceeded.

The operator had consumed alcohol at his house the evening of September 13, 2009, and reported for duty the next morning. The time period from consumption to reporting for duty was in excess of the minimum 5 hours. He was subjected to a random fitness-for-duty test approximately 2 hours after reporting for duty. The initial test indicated a blood alcohol content of 0.033 percent, and the confirmatory test indicated 0.030 percent. There were no behavioral observation opportunities because the operator did not exhibit behavior that would have suggested he was under the influence of alcohol.

The operator's plant access was immediately removed, and the facility performed all followup actions that are required by 10 CFR Part 26 and their fitness-for-duty program procedure.

Title 10 CFR 26.27(a) requires, in part, that each licensee shall establish, implement, and maintain written policies and procedures to meet the general performance objectives and applicable requirements of this part. Wolf Creek Procedure AP 01A-001, "Fitness-for-Duty Program," Revision 20, Section 5.10.2, states, that individuals are to maintain individual fitness for duty and remain in a suitable condition (i.e., free of the influence of any substance, legal or illegal), to ensure assigned tasks can be performed in a reliable and trustworthy manner. Contrary to the above, on September 14, 2009, the facility licensee failed to implement a procedure required by 10 CFR 26.27(a) when an individual failed to maintain individual fitness for duty and remain free from the influence of alcohol when reporting for duty.

In accordance with Section VII.B.6 of the NRC's Enforcement Policy and after consultation with the Director, Office of Enforcement, the NRC is exercising enforcement discretion to issue no violation for this instance. Specifically, the violation was not foreseeable, and the facility licensee took prompt corrective actions in accordance with their fitness-for-duty program prior to returning the individual to duty. In addition, the licensed operator did not engage in and was not scheduled to perform activities

authorized by his license during that workday and the NRC has concluded that the facility's Part 26 program worked effectively.

40A6 Meetings

Exit Meeting Summary

On April 15, 2010, the inspectors presented the onsite emergency preparedness inspection results to Mr. M. Sunseri, President and Chief Executive Officer, and other members of the licensee's 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 May 14, 2010, the inspectors presented the results of the radiation safety inspection to Mr. S. Hedges, Site Vice President, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

During a telephonic exit meeting on June 3, 2010, the inspector presented the results of the fitness-for-duty review to Mr. R. Gardner, Plant Manager, and other members of the licensee staff. The licensee acknowledged the issue presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On July 7, 2010, the resident inspectors presented the inspection results of the inspections to Mr. M. Sunseri, President and Chief Executive Officer, and other members of the licensee's management staff. The licensee acknowledged the findings presented. The inspectors noted that while proprietary information was reviewed, none would be included in this report.

40A7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as noncited violations.

Technical Specification 5.7.2 requires the licensee to control access to a locked-high radiation area. A locked-high radiation area is defined as a high radiation area with dose rates greater than 1.0 rem per hour at 30 centimeters from the radiation source or from any surface penetrated by the radiation, but less than 500 rads per hour at 1 meter from the radiation source. Contrary to the above, on November 9, 2009, the reactor vessel head was moved from the head stand to the reactor cavity creating an uncontrolled locked-high radiation area. Procedure RPP 02-105, "RWP," requires continuous health physics coverage for locked-high radiation areas. Specifically, a head area maintenance crew held a 2-minute safety brief which included health physics. After the safety brief, it was understood by the maintenance crew that all personnel were ready to commence the reactor head lift. However, after the 2-minute drill was completed, health physics personnel left the area to assist other crew personnel with dress out prior to entering the cavity. The remaining crew commenced to lift the reactor vessel head from the reactor headstand area to the reactor cavity without ensuring health physics technicians were present at the headstand area to provide locked-high radiation area coverage and surveys as required per Procedure RPP 02-105. The inspectors determined this finding to

be of very low safety significance because: (1) it did not involve ALARA planning and controls, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised. This issue was entered into the licensee's corrective action program as Condition Report 00021703.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

M. Sunseri, President and Chief Executive Officer
S. Hedges, Site Vice President
R. Gardner, Plant Manager
T. East, Superintendent, Emergency Preparedness
P. Bedgood, Superintendent, Chemistry/Radiation Protection
G. Pendergrass, Manager, System Engineering
L. Ratzlaff, Supervisor, Support Engineering
G. Neises, Manager, Design Engineering
S. Koenig, Manager, Corrective Action
S. Henry, Manager, Operations
B. Dale, Manager, Maintenance
D. Dees, Supervisor, Operations Support
R. Flannigan, Manager, Regulatory Affairs
D. Hooper, Supervisor, Licensing
J. Simmons, Maintenance Rule Engineer
T. Slenker, Operations Support Engineer
S. Wideman, Senior Licensing Engineer
S. Atkin, Design Engineer
L. Rockers, Licensing Engineer
B. Muilenberg, Licensing Engineer

NRC Personnel

N. Green, Health Physics
C. Drake, Health Physics
G. Miller, Branch Chief, DRP/B
G. Guerra, Emergency Preparedness Inspector
R. Kellar, Senior Enforcement Specialist

LIST OF ITEMS OPENED AND CLOSED

Opened and Closed

05000482/2010003-01	NCV	Failure to Maintain an Adequate Flooding Analysis for Auxiliary Feedwater Trains (Section 1R06)
05000482/2010003-02	NCV	Lack of Acceptance Criteria Allows Degraded EDG Power Supply to Remain Inservice (Section 1R15)
05000482/2010003-03	NCV	Nonsafety Power Supply Causes Failure of Emergency Diesel Generator A (Section 4OA2)

Opened and Closed

EA-10-182 NOED Fitness for Duty Enforcement Discretion for Licensed Operator (Section 40A5)

Closed

TI 2515/179 TI Verification of Licensee Responses to NRC Requirement for Inventories of Materials Tracked in the National Source Tracking System Pursuant to Title 10, Code of Federal Regulations, Part 20.2207 (10 CFR 20.2207) (Section 40A5)

LIST OF DOCUMENTS REVIEWED

Section 1RO1: Adverse Weather

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
AP 21C-001	WCGS Substation	10
OFN AF-025	Unit Limitations	29

CONDITION REPORTS

NUMBER

00020237

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
Letter to NRC	Response to GL 2006-02	March 31, 2006
WCAP-12231	Station Blackout Coping Assessment for Wolf Creek	April 15, 1989

Section 1RO4: Equipment Alignment

DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
E-11NK01	Class IE 125Vdc System Meter and Relay Diagram	10
E-11NK02	Class IE 125Vdc System Meter and Relay Diagram	8
M-13EG01	Piping Isometric Component Cooling Water Aux Bldg A Train	7

Section 1RO5: Fire Protection

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
AP 10-106	Fire Preplans	8
E-1F9905	Fire Hazard Analysis	0
M-663-00017A	Penetration Seal data	W01

Section 1RO6: Flood Protection Measures

CALCULATIONS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
AD-S-001	Evaluation of line AD052HBD-6" in Rooms 1206/1207 – Aux. / Turbine Building	0

DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
M-004-00228	General Arrangement for 193 TSMC2 40, 46, 52 Surface Cond Type A Unit	W06
M-004-0226	General Arrangement for 193 TSMC2 40, 46, 52 Surface Cond Type A Unit	3
M-004-0227	General Arrangement for 193 TSMC2 40, 46, 52 Surface Cond Type A Unit	2

M-004-00135	Erector's Assembly - General Arrangement for 193 TSMC2 40, 46, 52 Surface Cond Type A Unit	W05
M-12AP01	Piping & Instrumentation Diagram Condensate Storage and Transfer System	8
M-12AD02	Piping & Instrumentation Diagram Condensate System	9
M-12AD01	Piping & Instrumentation Diagram Condensate System	5

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
B0003	Qualification Type Test Report Limitorque Valve Actuators For Class IE Service Outside Primary Containment	June 7, 1976

Section 1R07: Heat Sink Performance

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
STN PE-038	Containment Cooler Performance Test	April 19, 2010

Section 1R11: Licensed Operator Requalification Program

<u>MISCELLANEOUS</u>	<u>DATE</u>
Requal Simulator Exam Scenario #70-57	May 20, 2010

Section 1R13: Maintenance Risk Assessment and Emergent Work Controls

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
	Daily Shutdown Risk Assessment	March 4, 2010
08-307071-007	Work Order	
APF 22C-003-01	Operational Risk Assessment: Schedule Week 207	April 27, 2010

CONDITION REPORTS

00025478 00025487

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
AI 14-011	Lifting and Rigging	4
AP 10-102	Control of Combustible Materials	14
AP 22C-003	Operational Risk Assessment Program	14A
AP 27-008	Control of Vehicles within the Protected Area	4
APF 22B-001-02	Daily Shutdown Risk Assessment	8

Section 1R15: Operability EvaluationsPROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
STN IC-261A	Diesel Generator A Speed Indicator Calibration	10
OFN PK-029	Loss Of Non Vital 125 VDC Bus PK01, PK02, PK03, PK04, and Annunicators	14

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SCA-10-0030	WCNOC Safety Classification Analysis	0
M-018-00105	Engine Gauge Panel KJ121 (KJ122)	W15
M-018-00414	Qualification of Class 1E Engine Colt Industries Operating Corp.	W07
M-018-00110	Engine Gauge Panel KJ121 (KJ122)	W13

WORK REQUESTS

10-080895	10-080897	09-077550	09-077443	00743-91
09-077256	09-077283	09-077326		

WORK ORDERS

06-287428-000	06-290667-000	06-290667-001	06-290667-002	06-290667-003
06-290667-004	10-329282-000	10-323299-000	07-297823-000	07-297823-001
10-079638	10-326745-000	10-326745-001	09-322726-000	09-321566-000
10-321393-000	10-326745-001	10-322726-000	10-326745-000	321030-003
09-321030-004	09-321030-005	09-321368-000	09-321997-001	06-297667-002
05-278836-000	09-321030-002	09-321030-001	06-280217-000	06-280217-000
06-280217-002	06-280217-003	06-280217-004	06-280217-005	06-280217-006
06-280217-007	06-280217-008	06-280217-009	06-280217-010	06-280217-011

Section 1R22: Surveillance Testing

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
STS EN-100A	Containment Spray Pump A Comprehensive Tests	0
STS EN-100A	Containment Spray Pump A Comprehensive Tests	4
STS EN-100B	Containment Spray Pump B Comprehensive Tests	0
STS EN-100B	Containment Spray Pump B Comprehensive Tests	3
STS PE-015	Containment Purge Valve Leakage Test	May 18, 2010

CONDITION REPORTS

25199

Section 1EP2: Alert Notification System Testing

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
EPP 06-019	Alert and Notification Systems Sirens	4
EPP 06-022	Tone Alert Radio Maintenance/Compensating Measures	4
	Design Report for Wolf Creek Nuclear Operating Company	May 2, 2008
	ANS Siren Annual Full Cycle Test Report	March 11, 2010

Section 1EP3: Emergency Response Organization Augmentation Testing

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
AP 17C-028	Emergency Response Duties and Responsibilities	11
EPP 06-009	Drill and Exercise Requirements	4
EPP 06-015	Emergency Response Organization Callout	11

CALLOUT DRILLS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
08-Q4	Quarterly Callout Test	November 18, 2008
09-Q1	Quarterly Callout Test	March 18, 2009
09-Q2	Quarterly Callout Test	June 11, 2009
09-Q3	Unannounced Mobilization Drill	September 3, 2009
09-Q4	Quarterly Callout Test	December 1, 2009
10-Q1	Quarterly Callout Test	March 29, 2010

Section 1EP5: Correction of Emergency Preparedness Weaknesses and Deficiencies

AUDITS AND SELF-ASSESSMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
SEL 2009-131	INPO Emergency Preparedness Industry Focused Self-Assessment	February 13, 2009
QAAR 09-05-EP	Emergency Preparedness Program Audit	August 27, 2009
QAAR 08-07-EP	Emergency Preparedness Program Audit	August 12, 2008

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
AP 28A-100	Condition Reports	11

CONDITION REPORTS

11727	11729	13857	13905	13982
14277	14333	14624	14797	15751
17129	17185	17361	17399	17858
18122	18594	19569	19614	19694
19772	20263	20361	20894	21472
22058	22245	22246	22538	22620
24385				

2RS01: Radiological Hazard Assessment and Exposure Controls

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
APA 25A-200	Access to Locked High Radiation or Very High Radiation Areas	22
RPP 02-105	RWP	34
RPP 02-215	Posting of Radiological Controlled Areas	26
RPP 02-405	RCA Access Control	15
RPP 02-605	Control and Inventory of Radioactive Sources	13
STS HP-001	Sealed Source Contamination Surveillance Test	20

AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
10-03-RP	QA Audit, Radiological Protection Program	March 2010
RPF 02-210-01	2009'/2016' Aux Building Demin Alley RMS # 1302 and 1319 – Filter Change Survey	November 16, 2009
STS HP-001, Attachment A	Sealed Source Contamination Surveillance Test	June 26, 2009
STS HP-001, Attachment A	Sealed Source Contamination Surveillance Test	January 12, 2010
STS HP-001, Attachment A	Sealed Source Contamination Surveillance Test – Source Number: 91-CHL-022	May 13, 2010

CONDITION REPORTS

00021703	00021827	00023497	00023679	00023801
00024234	00024562	00025509		

RADIATION WORK PERMITS

<u>NUMBER</u>	<u>TITLE</u>
100008	NRC access to the RCA for surveillance and inspection
100010	Station personnel access to HRAs during non-outage
090021	Shielded remote cartridge filter change-out in Auxiliary and Radwaste buildings using the preferred method

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
RPF 02-605-03	Licensed Quantity Source Inventory	1
RPF 02-206-04	Exempt Source Inventory	1
	Locked High Radiation and Very High Radiation Area Key Control Log	May 13, 2010

2RS02: Occupational ALARA Planning and Controls

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
AP 25A-001	Radiation Protection Manual	13A
AP 25A-401	ALARA Program	18
AP 25A-410	ALARA Committee	13
AP 25B-300	RWP Program	19
RPP 02-105	RWP	34

CONDITION REPORTS

00021735	00021736	00021857	00022660	00023665
00023909	00024329			

RADIATION WORK PERMIT

<u>NUMBER</u>	<u>TITLE</u>
100036	Containment Access During Plant Modes 1, 2, 3, 4, & 5
094200	Secondary Side S/G Work
094208	RCP Team Work Activities
096020	Reactor Vessel Head Lift Preparation and Post Head Set Work Activities
096031	RV Head Lift, Transfer, & Set
096050	Reactor Vessel Internals Removal, Transfer, and Replacement

Section 40A1: Performance Indicator Verification

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
WCNOC-163	Mitigating Systems Performance Index Basis Document	4

Section 40A1: Performance Indicator Verification

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
AP 26A-007	NRC Performance Indicators	7
AI 26A-004	Emergency Planning Performance Indicators	4
AP 17C-024	Emergency Planning Responsibilities	8
AP 06-002	Radiological Emergency Response Plan	9

DRILL AND EXERCISE SCENARIOS

LR5007063	GE7735611	GE1135662
LR5007062	LR5007015	GE1135665

CONDITION REPORTS

00020973 00025510

Section 40A2: Identification and Resolution of Problems

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OFN PK-029	Loss Of Non Vital 125 VDC Bus PK01, PK02, PK03, PK04, and Annunciators	14
STN IC-261A	Diesel Generator A Speed Indicator Calibration	10

VENDOR MANUALS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
M-018-01321	Adjustable Ranges for Model ESSB Electronic Speed Switch	W02
M-018-01334	Synchro-Start Products Inc. Electronic speed Switches & Mini-Gen Signal Generators	W02

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
SCA-10-0030	WCNOC Safety Classification Analysis	0
P95-0342	Material Equipment Change Notice	
P95-0340	Material Equipment Change Notice	
91-13-KJ	Temporary Modification Order	1
PMR 04195	Incorporate Temp Mod Capacitors As Permanent	0
M-018-00105	Engine Gauge Panel KJ121 (KJ122)	W15
M-018-00414	Qualification of Class 1E Engine Colt Industries Operating Corp.	W07
M-018-00110	Engine Gauge Panel KJ121 (KJ122) Special Report 86-011	W13 December 24, 1986

WORK REQUESTS

10-080895	10-080897	09-077550	09-077443	00743-91
09-077256	09-077283	09-077326		

WORK ORDERS

06-287428-000	06-290667-000	06-290667-001	06-290667-002	06-290667-003
06-290667-004	10-329282-000	10-323299-000	07-297823-000	07-297823-001
10-079638	10-326745-000	10-326745-001	09-322726-000	09-321566-000
10-321393-000	10-326745-001	10-322726-000	10-326745-000	321030-003
09-321030-004	09-321030-005	09-321368-000	09-321997-001	06-297667-002
05-278836-000	09-321030-002	09-321030-001	06-280217-000	06-280217-000
06-280217-002	06-280217-003	06-280217-004	06-280217-005	06-280217-006
06-280217-007	06-280217-008	06-280217-009	06-280217-010	06-280217-011

CONDITION REPORTS

021039	00025663	00025479	00025316	0024867
00024872	00025479	00021073	00021566	00024356
00024268	00021938	00020665	00021195	00021235
15551				

Section 40A5: Other Activities

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
AP 01A-001	Fitness For Duty Program	20

CONDITION REPORTS

00025472

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
NRC Form 748	National Source Tracking Transaction Report	January 2010
	National Source Tracking System Annual Inventory 2010	

Work Request

10-080895	10-080897	09-077550	09-077443	00743-91
09-077256	09-077283	09-077326		

Work Orders

06-287428-000	06-290667-000	06-290667-001	06-290667-002	06-290667-003
06-290667-004	10-329282-000	10-323299-000	07-297823-000	07-297823-001
10-079638	10-326745-000	10-326745-001	09-322726-000	09-321566-000
10-321393-000	10-326745-001	10-322726-000	10-326745-000	321030-003
09-321030-004	09-321030-005	09-321368-000	09-321997-001	06-297667-002
05-278836-000	09-321030-002	09-321030-001	06-280217-000	06-280217-000
06-280217-002	06-280217-003	06-280217-004	06-280217-005	06-280217-006
06-280217-007	06-280217-008	06-280217-009	06-280217-010	06-280217-011