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

August 3, 2012

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

SUBJECT: WOLF CREEK GENERATING STATION – INTEGRATED INSPECTION REPORT 05000482/2012003

Dear Mr. Sunseri:

On June 29, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Wolf Creek facility. The enclosed inspection report documents the inspection results which were discussed on July 18, 2012, with Mr. Richard Clemens 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.

One NRC identified finding and one self-revealing finding of very low safety significance (Green) were identified during this inspection. Both of these findings were determined to involve violations of NRC requirements. Further, a licensee-identified violation which was determined to be of very low safety significance is listed in this report. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

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

If you disagree with a crosscutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region IV; and the NRC Resident Inspector at the Wolf Creek Generating Station.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's Agencywide Document Access and Management System (ADAMS). ADAMS is

accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

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

Docket No.: 05000482
License No: NPF-42

Enclosure: Inspection Report 05000482/2012003
w/ Attachment: Supplemental Information

cc w/ encl: Electronic Distribution

Electronic distribution by RIV:
Regional Administrator (Elmo.Collins@nrc.gov)
Deputy Regional Administrator (Art.Howell@nrc.gov)
DRP Director (Kriss.Kennedy@nrc.gov)
Acting DRP Deputy Director (Allen.Howe@nrc.gov)
Acting DRS Director (Tom.Blount @nrc.gov)
Acting DRS Deputy Director (Patrick.Louden@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 (Neil.OKeefe@nrc.gov)
Senior Project Engineer, DRP/B (Leonard.Willoughby@nrc.gov)
Project Engineer, DRP/B (Nestor.Makris@nrc.gov)
Public Affairs Officer (Victor.Dricks@nrc.gov)
Public Affairs Officer (Lara.Uselding@nrc.gov)
Project Manager (Terry.Beltz@nrc.gov)
Acting Branch Chief, DRS/TSB (Dale.Powers@nrc.gov)
RITS Coordinator (Marisa.Herrera@nrc.gov)
Regional Counsel (Karla.Fuller@nrc.gov)
Congressional Affairs Officer (Jenny.Weil@nrc.gov)
OEMail Resource
DRS/TSB STA (Dale.Powers@nrc.gov)
Executive Technical Assistant (Silas.Kennedy@nrc.gov)

R:_REACTORS_WC\2012\2012003.docx ML 12219A181

SUNSI Rev Compl.	☒Yes ☐ No	ADAMS	☑Yes ☐ No	Reviewer Initials	NFO
Publicly Avail.	☑Yes ☐ No	Sensitive	☐Yes ☒ No	Sens. Type Initials	NFO

SRI:DRP/B	RI:DRP/B	SPE:DRP/B	C:DRS/EB1	C:DRS/EB2	C:DRS/OB
CLong	CPeabody	LWilloughby	TFarnholtz	GMiller	MHaire
/NFO via E/	***/NFO via E/***	***/RA via E/***	***/RA/***	***/RA/***	***/NFO via T/***
7/20/12	7/20/12	8/9/12	7/31/12	7/31/12	8/1/12
C:DRS/PSB1	C:DRS/PSB2	AC:DRS/TSB	BC:DRP/B		
MHay	JDrake	RKellar	NO'Keefe		
/RA/	***/RA/***	***DPowers for***	***/RA/***		
8/1/12	8/1/12	8/1/12	8/3/12		

OFFICIAL RECORD COPY T=Telephone E=Email F=Fax

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket: 05000482

License: NPF-042

Report: 05000482/2012003

Licensee: Wolf Creek Nuclear Operating Corporation

Facility: Wolf Creek Generating Station

Location: 1550 Oxen Lane NE, Burlington, Kansas

Dates: March 31 through June 29, 2012

Inspectors: C. Long, Senior Resident Inspector
C. Peabody, Resident Inspector
N. Makris, Project Engineer
C. Alldredge, Health Physicist
N. Greene, PhD, Health Physicist
L. Carson II, Senior Health Physicist
J. O'Donnell, Health Physicist
L. Ricketson, P.E., Senior Health Physicist

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

SUMMARY OF FINDINGS

IR 05000482/2012003; 03/31/2012 – 06/29/2012; Wolf Creek Generation Station, Integrated Resident and Regional Report; Flood Protection Measures, Plant Modifications.

The report covered a 3-month period of inspection by resident inspectors and an announced baseline inspection by region-based inspectors. Two 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." The crosscutting aspect is determined using Inspection Manual Chapter 0310, "Components Within the Cross Cutting Areas." Findings for which the significance determination process does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified Findings and Self-Revealing Findings

Cornerstone: Initiating Events

- Green. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for a work order that did not accomplish a leak seal repair in accordance with its engineering evaluation. Valve BMV0037 is a safety related ASME Code Class 2 steam generator blowdown valve that had a body-to-bonnet steam leak. Wolf Creek and its vendor produced modification documents to perform a leak-seal repair. The inspectors identified that on December 10, 2011, Wolf Creek installed an injection port in the valve body in close proximity of another injection port. Work orders allowed the location of the injection ports to be determined by the work. The pair was not installed in accordance with change package 9385. After inspector questioning, Wolf Creek performed an evaluation that demonstrated that the valve body retained structural integrity. This issue was entered into the corrective action program under condition report 52992.

  The failure to ensure that the configuration of a safety-related steam generator blowdown was controlled in accordance with the approved engineering change package during leak seal activities is a performance deficiency. This finding was more than minor because it impacted the procedure quality attribute of the Initiating Events Cornerstone and affected the objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Using Inspection Manual Chapter 0609, Appendix A, this finding was determined to be of very low safety significance because an evaluation after the modification was able to demonstrate structural integrity. Therefore, the finding does not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment will not be available. The inspectors identified the cause of the finding had a human performance crosscutting aspect in the area of resources. Specifically, the licensee did not ensure that the work order instructions were complete, accurate, and reflected up-to-date design documentation sufficiently to control plant configuration in accordance with design [H.2.c] (Section 1R18).

Cornerstone: Mitigating Systems

- Green. A self-revealing non-cited violation of 10 CFR 50, Appendix B, Criterion V, "Inspections, Procedures, and Drawings," was identified as a result of a leaking watertight door that was observed on January 13, 2012. Station procedure MPM XX-002, "Watertight Door Preventive Maintenance Activities," failed to ensure the proper position of the alignment screws, which resulted in leakage through a misalignment between the door and its threshold. During the January 13, 2012, loss of offsite power, the auxiliary building general area sump pumps did not operate for approximately 36 hours. Condensed steam and other effluents slowly accrued in the stairwell area outside the containment spray pump rooms to a depth of 24 to 36 inches. The train B containment spray pump room watertight door leaked approximately 10 gallons per minute and pooled in both the containment spray pump room and the residual heat removal pump room to a depth of three inches. This issue was entered into the corrective action program under condition report 51622. The licensee corrected the procedure and realigned the affected watertight doors.

  Failure to properly adjust safety-related watertight door alignment screws during testing activities is a performance deficiency. The performance deficiency is more than minor and therefore a finding because, if left uncorrected it could lead to a more significant safety concern. Using Inspection Manual Chapter 0609, Appendix A, the finding was characterized using Exhibit 4, "Seismic, Flooding, and Severe Weather Screening Criteria." The finding was determined to be of very low safety significance (Green) because the degraded flood protection equipment would not have caused a plant trip or other initiating event, would not degrade two or more trains of a multi-train safety system, would not degrade one or more trains of a supporting system, and the finding does not involve the total loss of any safety function. The inspectors determined the cause of this finding was not indicative of current performance. (Section 1R06).

B. Licensee-Identified Violations

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

REPORT DETAILS

Summary of Plant Status

Wolf Creek began the inspection period on March 31 at 100 percent power and remained at full power until May 24, when power was reduced to 69 percent for planned turbine thermal performance testing. Wolf Creek returned to 100 percent power later on May 24. On June 6, Wolf Creek reduced power to 88 percent when it entered Limiting Condition of Operation 3.0.3 due to having the train A vital switchgear and battery air conditioning unit inoperable. Wolf Creek returned to 100 percent power later on June 6 and remained at 100 percent for the rest of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Readiness for Impending Adverse Weather Conditions

a. Inspection Scope

Since thunderstorms with potential tornados and high winds were forecast in the vicinity of the facility for April 14, 2012, the inspectors reviewed the plant personnel's overall preparations/protection for the expected weather conditions. On April 13, 2012, the inspectors walked down the condensate storage tank, demineralized water storage tank, reactor makeup water, and refueling water storage tank because their functions could be affected, or required, as a result of high winds or tornado-generated missiles or the loss of offsite power. The inspectors evaluated the plant 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 inspector's evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant. Additionally, the inspectors reviewed the Updated Safety Analysis Report (USAR) and performance requirements for the systems selected for inspection, and verified that operator actions were appropriate as specified by plant-specific procedures. The inspectors also reviewed a sample of corrective action program items to verify that the licensee-identified adverse weather issues at an appropriate threshold and dispositioned them through the corrective action program in accordance with station corrective action procedures. Specific documents reviewed during this inspection are listed in the attachment.

Because the storm of April 14, 2012, caused the temporary diesel-driven fire water pump to be locally shut down due to wave action on Coffey County lake, and a second storm with similar behavior was predicted to arrive on April 19, the inspectors reviewed corrective action documents and the temporary fire pump operating procedures. The inspectors discussed applicable equipment and staffing requirements with the operations

superintendent. The inspectors reviewed plans to secure the pump during periods of high wave action for the long-term safety and reliability of the pump, and to have the dedicated operator stationed in an adjacent building to restart the pump in the event of an actual fire. The inspectors reviewed station procedures for operation of the temporary diesel-driven fire water pump and walked down the pump, as well as the suction, and discharge system connection. The inspectors also walked down the electric motor-driven fire water pump and service water pumps in the adjacent circulating water screen house building to verify that the area was free from any wind-driven missiles and that the equipment would be available to respond to a valid demand in the event of a fire. Specific documents reviewed are listed in the attachment.

These activities constitute completion of two readiness for impending adverse weather condition samples as defined in Inspection Procedure 71111.01-05.

b. Findings

No findings were identified.

.2 Summer Readiness for Offsite and Alternate-ac Power

a. Inspection Scope

The inspectors performed a review of 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 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's operations personnel 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 procedures used by plant personnel to mitigate or respond to adverse weather conditions. 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. 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 71111.01-05.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

Partial Walkdown

a. Inspection Scope

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

- April 14, 2012, Auxiliary building watertight doors and internal flood barriers with train B emergency core cooling watertight door out of service
- June 19, 2012, Boron injection tank depressurization flowpath through the safety injection test line

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

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

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

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 4, 2012, Train A motor-driven auxiliary feedwater pump and valve rooms
- April 4, 2012, Train B motor-driven auxiliary feedwater pump and valve rooms
- April 5, 2012, Turbine-driven auxiliary feedwater pump and valve rooms

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 in Inspection Procedure 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 susceptibilities involving internal flooding; reviewed the 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; and

verified that operator actions for coping with flooding can reasonably achieve the desired outcomes. The inspectors also inspected the areas 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.

- April 17, 2012, Containment spray train B and residual heat removal train B pump rooms

These activities constitute completion of one flood protection measures inspection sample as defined in Inspection Procedure 71111.06-05.

b. Findings

Introduction. A Green, self-revealing, non-cited violation of 10 CFR 50, Appendix B, Criterion V, "Inspections, Procedures, and Drawings," was identified as a result of a leaking watertight door that was observed on January 13, 2012. Station Procedure MPM XX-002 "Watertight Door Preventive Maintenance Activities," failed to ensure the proper position of the alignment screws, which resulted in leakage through a misalignment between the door and its threshold.

Description. On January 13, 2012, Wolf Creek tripped due to a main generator breaker fault. Many non-safety systems were without power for several days until temporary power could be arranged. One such system was the auxiliary building general area sumps, which were without power for approximately 36 hours. Condensed steam and other effluents slowly accrued in the stairwell area outside the containment spray pump rooms. The containment spray pump rooms lead to the corresponding train residual heat removal pump rooms. Each train of containment spray pump rooms is separated from the stairwell by a watertight door. There is no flood protection between the corresponding containment spray and residual heat removal pump rooms. Over the 36-hour period without power, the general area water level rose to approximately 24 to 30 inches in depth, which was above the bottom of the watertight doors. The train A containment spray pump room door passed minimal leakage with no impact to safety-related equipment in the rooms. The train B containment spray pump room door passed an unacceptable amount of leakage estimated to be approximately 10 gpm and pooled into both the containment spray pump room and the residual heat removal pump room to a depth of three inches.

On April 17, 2012, Wolf Creek identified that a previous condition report screening resulted in a nonconservative operability assessment of door leakage. The licensee discovered that corrective actions had not been taken and at 2:53 p.m., control room operators promptly declared the door and the train B containment spray and train B residual heat removal pumps inoperable and entered the appropriate technical specification action statements. The licensee inspected the material condition of the gasket and determined that it met the requirements of its preventive maintenance activity detailed in station procedure MPM XX-002, "Watertight Doors Preventive Maintenance Activity." At that point, the licensee determined that the procedure must be in some way inadequate. The licensee contacted another facility for information and compared their

respective procedures. The licensee determined that another facility was regularly adjusting the doors' alignment screws ("dog ears") whereas Wolf Creek's procedure directed the mechanic to skip that step if the door passed its chalk test in the previous step.

The chalk test checks engagement between the door frame and the door seal. Operations personnel determined that the chalk test had a high likelihood of producing a false positive because the chalk is transferred around the entire perimeter of the seal when the mechanic closes the door, appearing to demonstrate a proper seal. However, actual sealing occurs when the hand wheel is turned to engage the dog ears. If the dog ears are properly aligned, the door will seal around the entire seating surface. However, if they are loose, the door may rest ajar in the threshold allowing water to pass. A field inspection observed that six of eight dog ears were loose on the containment spray room B watertight door, whereas only two of eight dog ears on the train A door were loose and it performed satisfactorily under the same flood conditions. The licensee completed the adjustments of the to the alignment screws, door jamb welding, and seal replacement and returned the train B containment spray and emergency core cooling systems to service at 2:48 p.m. on April 18, 2011.

Analysis. Failure to properly adjust safety-related watertight door alignment screws during testing activities is a performance deficiency. The performance deficiency is more than minor, and therefore a finding because, if left uncorrected it could lead to a more significant safety concern. Using Inspection Manual Chapter 0609, Appendix A, the finding was characterized under the Exhibit 4, "Seismic, Flooding, and Severe Weather Screening Criteria." The finding was determined to be of very low safety significance (Green) because the degraded flood protection equipment would not have caused a plant trip or other initiating event, would not degrade two or more trains of a multi-train safety system, would not degrade one or more trains of a supporting system, and the finding does not involve the total loss of any safety function. The inspectors determined the cause of this finding was not indicative of current performance.

Enforcement. Title 10 CFR 50, Appendix B, Criterion V, states that: "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings." Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. Procedure MPM XX-002, "Watertight Doors Preventive Maintenance Activity," Revision 4, a safety-related procedure, was intended to implement activities affecting quality for flood doors. Contrary to the above, from original plant construction in 1985 through April 18, 2012, the licensee performed activities affecting the quality of watertight doors using a procedure that was not appropriate to the circumstances. Specifically, Wolf Creek station procedure MPM XX-002, "Watertight Doors Preventive Maintenance Activity," Revision 4, failed to ensure the proper position of the door alignment screws, which resulted in leakage due to misalignment. Because this finding is of very low safety significance and was entered into the licensee corrective action program as condition report 51622, this violation is being treated as a non-cited violation in accordance with Section 2.3.2 of the Enforcement Policy: NCV 05000482/2012003-01, "Unacceptable Leakage Through Safety-Related Watertight Door During Loss of Offsite Power."

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

.1 Quarterly Review of Licensed Operator Requalification Program

a. Inspection Scope

On June 18, 2012, the inspectors observed a crew of licensed operators in the plant's simulator during requalification testing. The inspectors assessed the following areas:

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

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

b. Findings

No findings were identified.

.2 Quarterly Observation of Licensed Operator Performance

a. Inspection Scope

On the evening of April 5, 2012, the inspectors observed the performance of on-shift licensed operators in the plant's main control room. At the time of the observations, the plant was in a period of heightened activity due to Security Force on Force drills being conducted throughout the plant. The inspectors observed the operators' performance of the following activities:

- Shift turnover brief
- Drill communication brief
- Routine reactivity manipulations.

In addition, the inspectors assessed the operators' adherence to plant procedures, including procedure AP 21-001, "Conduct of Operations," and other operations department policies.

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

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

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

- May 15, 2012, Startup main feedwater pump performance monitoring, maintenance rule function AE-04
- June 21, 2012, Reactor protection system card replacements, maintenance rule function SP-02

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

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

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

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

b. Findings

No findings were identified.

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

a. Inspection Scope

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

- April 10 and 15, 2012, NK02 DC bus voltage and current fluctuations

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 one maintenance risk assessments and emergent work control inspection sample as defined in Inspection Procedure 71111.13-05.

b. Findings

No findings were identified.

1R15 Operability Evaluations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:

- April 13, 2012, Chemical and volume control system alternate charging line check valves BBV8379A and BBV8379B potential stud degradation

- April 18, 2012, Flood door operability in Auxiliary Building

- May 2, 2012, Operator Manual Actions for control room ventilation damper GKD-181

- May 23, 2012, Refueling water storage tank valve BNV-11 manual actions during sump recirculation

- June 16, 2012, Vital Switchgear room temperatures after loss of train B air conditioning unit

- January 24 and February 13, 2012, residual heat removal transients following non-vital power loss with normal service water running in Mode 5

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 personnel'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 six operability evaluation inspection samples as defined in Inspection Procedure 71111.15-05.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

Temporary Modifications

a. Inspection Scope

To verify that the safety functions of important safety systems were not degraded, the inspectors reviewed the temporary modification for leak seal repair of steam generator tube sheet drain valve BMV0037.

The inspectors reviewed the temporary modification and the associated safety-evaluation screening against the system design bases documentation, including the USAR and the technical specifications, and verified that the modification did not adversely affect the system operability/availability. The inspectors also verified that the installation and restoration were consistent with the modification documents and that configuration control was adequate. Additionally, the inspectors verified that the

temporary modification was identified on control room drawings, appropriate tags were placed on the affected equipment, and licensee personnel evaluated the combined effects on mitigating systems and the integrity of radiological barriers.

These activities constitute completion of one sample for temporary plant modifications as defined in Inspection Procedure 71111.18-05.

b. Findings

Introduction. The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for a work order that did not accomplish a leak seal repair in accordance with its engineering evaluation.

Description. Valve BMV0037 is a 2-inch safety-related ASME Code Class 2 valve that isolates the steam generator B tube sheet drain. This diaphragm type valve is not required to change position but it is required to be a pressure boundary for the secondary side of the steam generator. This safety-related quality valve is normally closed and cannot be isolated from the steam generator.

On September 9, 2010, Wolf Creek experienced a leak at the body-to-bonnet joint for valve BMV0037. Wolf Creek engineering utilized a previously approved a leak seal repair using configuration change package 9385. Change package 13482 re-approved change package 9385 for use. This change package approved drilling injection ports into the valve body. On September 30, 2010, Wolf Creek and its contractor drilled two injection ports 180 degrees apart on valve BMV0037 and injected leak sealant. From September 30, 2010, to November 30, 2011, valve BMV0037 leaked and was injected four times. On December 5, 2011, BMV0037 began leaking again and a third injection port was installed.

The inspectors selected the inspection because the valve had leaked multiple times and was not replaced. The inspectors made a containment entry on March 27, 2012, and observed the sealant injection. The inspectors observed two injection ports drilled at angles to the valve body in close proximity to one another and a third approximately 180 degrees on the other side of the valve body. Two of the injection ports were visually estimated at three quarters of an inch apart and at a shallow angle to the valve body. Valve BMV0037 was injected again on March 28, 2012, and May 8, 2012.

The inspectors reviewed work order 10-333183-002 that was used on September 30, 2010, to install the injection ports. The inspectors found no instructions in work order 10-333183-002 for the orientation of the drilling for the injection ports, although they were drilled 180 degrees apart. Step 1.7.5 of work order 10-333183-002 stated that the activity was not to exceed three injection ports. The inspectors reviewed work order 11-346576-006, which installed a third injection port on December 10, 2011, adjacent to one of the existing injection ports. The inspectors noted that Step 1.8.4 of work order 11-346576-006 allowed the location of the third injection port to be determined by the vendor technician, and also noted that the third injection port was not installed in accordance with change package 9385.

The inspectors concluded that, despite repeated re-injections, Wolf Creek did not exceed the evaluated limits for the amount of sealant allowed to be injected. However, the inspectors noted that Wolf Creek's leak seal process did not require a valve with a temporary leak seal repair to be replaced at the next outage, and it did not include a caution that cooling down a hot system was likely to cause changes in the sealant properties and result in another leak. The inspectors questioned why the valve was not replaced during the previous refueling outage or the forced outage and were told that Wolf Creek had had difficulty locating a replacement valve.

The inspectors reviewed configuration change packages 13482 and 9385. The inspectors noted that configuration change package 9385 stated that three injection ports shall be installed 120 degrees apart around the circumference of the valve body. The holes for those injection ports were said not to require reinforcement because ASME Code Section III, NC-3332.1 does not require reinforcement since the injection ports are less than 2-inch nominal pipe size. ASME Code Section III, article NC-3300 is for pressure vessels. The inspectors, with assistance from the Office of Nuclear Reactor Regulation, determined that the use of article NC-3300 was reasonable, but the application of article NC-3332.1 was not appropriate for multiple openings in a valve body. The inspectors questioned if the reinforcement requirements of article NC-3330 were met. Wolf Creek subsequently evaluated the article NC-3330 reinforcement criteria using dimensions reasonably estimated from a photo and the manufacturer's valve drawing. The inspectors concluded that the evaluation did not include the angles of the injection ports. Drilling the injection ports at an angle other than 90 degrees (to the valve body) results in a deeper hole to reach the body-to-bonnet threaded joint (the area where the sealant was injected). This required more surrounding re-enforcement material. The inspectors again questioned the loss of material, this time due to the additional material lost to the injection port angles. Wolf Creek subsequently took actual measurements during a containment entry and re-performed the ASME Code evaluation. The evaluation considered the angled injection ports to be oval shaped holes through the wall of the valve body per article NC-3331(a). This increased the amount of material required for reinforcement. The inspectors reviewed the calculation and concluded that the reinforcement requirements were met.

Analysis. The failure to ensure that the configuration of a safety-related steam generator blowdown valve was controlled in accordance with the approved engineering change package during leak seal activities is a performance deficiency. This finding was more than minor because it impacted the procedure quality attribute of the Initiating Events Cornerstone, and it affected the objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," this finding was determined to be of very low safety significance because an evaluation after the modification was able to demonstrate structural integrity. Therefore, the finding does not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment will not be available. The inspectors identified the cause of the finding had a in the human performance crosscutting aspect in the area of resources. Specifically, the licensee did not ensure that the work order instructions were sufficiently complete, accurate and reflected up-to-date design documentation sufficient to control plant configuration in accordance with design [H.2.c.]

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Instructions, procedures, or drawings shall include acceptance criteria for determining that activities have been satisfactorily accomplished. Wolf Creek configuration change package 9385 allowed up to three injection ports 120 degrees apart on the valve body. Contrary to the above, on September 30, 2010, the licensee performed an activity affecting quality using documented instructions that were not appropriate to the circumstances. Work order 10-333183-002 contained no instructions for the modification of the safety-related valve BMV0037 by installing injection ports. Specifically, there were no instructions or acceptance criteria for injection port positioning or orientation, even though the position and orientation to the drilled holes affect the structural integrity of the valve body. 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 report 52992, this violation is being treated as a non-cited violation in accordance with Section VI.A.1 of the NRC Enforcement Policy: NCV 05000482/2012003-02, "Incorrect Leak Seal Injection Port Installation."

1R19 Post Maintenance 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:

- May 31, 2012, Vital switchgear cooler SGK05B after compressor replacement
- June 21, 2012, Containment spray room cooler after inspection
- June 18-25, 2012, Over-temperature delta-temperature circuit card replacements

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

- The effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed

- Acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate

The inspectors evaluated the activities against the technical specifications, the 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 three postmaintenance testing inspection samples as defined in Inspection Procedure 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 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.

- June 10, 2012, Spent fuel pool pump B inservice testing
- March 19, 2012, Main steam isolation valve inservice testing
- June 20, 2012, STS BB-006, reactor coolant system leak rate calculation
- June 21, 2012, Containment spray pump B inservice testing
- June 27, 2012, Residual heat removal pump A inservice testing
- June 28, 2012, TMP 11-013, Reactor coolant system to emergency core cooling system check valve leak test

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

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

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstone: Occupational and Public Radiation Safety

2RS05 Radiation Monitoring Instrumentation (71124.05)

a. Inspection Scope

This area was inspected to verify the licensee is assuring the accuracy and operability of radiation monitoring instruments that are used to: (1) monitor areas, materials, and workers to ensure a radiologically safe work environment and (2) detect and quantify radioactive process streams and effluent releases. The inspectors used the requirements in 10 CFR Part 20, the technical specifications, and the licensee's procedures required by technical specifications as criteria for determining compliance. During the inspection, the inspectors interviewed licensee personnel, performed walkdowns of various portions of the plant, and reviewed the following items:

- Selected plant configurations and alignments of process, post-accident, and effluent monitors with descriptions in the USAR and the offsite dose calculation manual

- Select instrumentation, including effluent monitoring instrument, portable survey instruments, area radiation monitors, continuous air monitors, personnel contamination monitors, portal monitors, and small article monitors to examine their configurations and source checks

- Calibration and testing of process and effluent monitors, laboratory instrumentation, whole body counters, post-accident monitoring instrumentation, portal monitors, personnel contamination monitors, small article monitors, portable survey instruments, area radiation monitors, electronic dosimetry, air samplers, continuous air monitors

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

Specific documents reviewed during this inspection are listed in the attachment. These activities constitute completion of the one required sample as defined in Inspection Procedure 71124.05-05.

b. Findings

No findings were identified.

2RS06 Radioactive Gaseous and Liquid Effluent Treatment (71124.06)

a. Inspection Scope

This area was inspected to: (1) ensure the gaseous and liquid effluent processing systems are maintained so radiological discharges are properly mitigated, monitored, and evaluated with respect to public exposure; (2) ensure abnormal radioactive gaseous or liquid discharges and conditions, when effluent radiation monitors are out-of-service, are controlled in accordance with the applicable regulatory requirements and licensee procedures; (3) verify the licensee's quality control program ensures the radioactive effluent sampling and analysis requirements are satisfied so discharges of radioactive materials are adequately quantified and evaluated; and (4) verify the adequacy of public dose projections resulting from radioactive effluent discharges. The inspectors used the requirements in 10 CFR Part 20; 10 CFR Part 50, Appendices A and I; 40 CFR Part 190; the offsite dose calculation manual, and licensee procedures required by the technical specifications as criteria for determining compliance. The inspectors interviewed licensee personnel and reviewed and/or observed the following items:

- Radiological effluent release reports since the previous inspection and reports related to the effluent program issued since the previous inspection, if any

- Effluent program implementing procedures, including sampling, monitor setpoint determinations and dose calculations

- Equipment configuration and flow paths of selected gaseous and liquid discharge system components, filtered ventilation system material condition, and significant changes to their effluent release points, if any, and associated 10 CFR 50.59 reviews

- Selected portions of the routine processing and discharge of radioactive gaseous and liquid effluents (including sample collection and analysis)

- Controls used to ensure representative sampling and appropriate compensatory sampling

- Results of the inter-laboratory comparison program

- Effluent stack flow rates

- Surveillance test results of technical specification-required ventilation effluent discharge systems since the previous inspection

- Significant changes in reported dose values, if any

- A selection of radioactive liquid and gaseous waste discharge permits

- Part 61 analyses and methods used to determine which isotopes are included in the source term

- Offsite dose calculation manual changes, if any

- Meteorological dispersion and deposition factors

- Latest land use census

- Records of abnormal gaseous or liquid tank discharges, if any

- Groundwater monitoring results

- Changes to the licensee's written program for indentifying and controlling contaminated spills/leaks to groundwater, if any

- Identified leakage or spill events and entries made into 10 CFR 50.75 (g) records, if any, and associated evaluations of the extent of the contamination and the radiological source term

- Offsite notifications~~,~~ and reports of events associated with spills, leaks, or groundwater monitoring results, if any

- Audits, self-assessments, reports, and corrective action documents related to radioactive gaseous and liquid effluent treatment 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 71124.06-05.

b. Findings

No findings were identified.

2RS07 Radiological Environmental Monitoring Program (71124.07)

a. Inspection Scope

This area was inspected to: (1) ensure that the radiological environmental monitoring program verifies the impact of radioactive effluent releases to the environment and sufficiently validates the integrity of the radioactive gaseous and liquid effluent release program; (2) verify that the radiological environmental monitoring program is implemented consistent with the licensee's technical specifications and/or offsite dose calculation manual, and to validate that the radioactive effluent release program meets the design objective contained in Appendix I to 10 CFR Part 50; and (3) ensure that the radiological environmental monitoring program monitors non-effluent exposure pathways, is based on sound principles and assumptions, and validates that doses to members of the public are within the dose limits of 10 CFR Part 20 and 40 CFR Part 190, as applicable. The inspectors reviewed and/or observed the following items:

- Annual environmental monitoring reports and offsite dose calculation manual
- Selected air sampling and thermoluminescence dosimeter monitoring stations
- Collection and preparation of environmental samples
- Operability, calibration, and maintenance of meteorological instruments
- Selected events documented in the annual environmental monitoring report which involved a missed sample, inoperable sampler, lost thermoluminescence dosimeter, or anomalous measurement
- Selected structures, systems, or components that may contain licensed material and has a credible mechanism for licensed material to reach ground water
- Records required by 10 CFR 50.75(g)

- Significant changes made by the licensee to the offsite dose calculation manual as the result of changes to the land census or sampler station modifications since the last inspection

- Calibration and maintenance records for selected air samplers, composite water samplers, and environmental sample radiation measurement instrumentation

- Interlaboratory comparison program results

- Audits, self-assessments, reports, and corrective action documents related to the radiological environmental monitoring program 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 71124.07-05.

b. Findings

No findings were identified.

2RS08 Radioactive Solid Waste Processing, and Radioactive Material Handling, Storage, and Transportation (71124.08)

a. Inspection Scope

This area was inspected to verify the effectiveness of the licensee's programs for processing, handling, storage, and transportation of radioactive material. The inspectors used the requirements of 10 CFR Parts 20, 61, and 71 and Department of Transportation regulations contained in 49 CFR Parts 171-180 for determining compliance. The inspectors interviewed licensee personnel and reviewed the following items:

- The solid radioactive waste system description, process control program, and the scope of the licensee's audit program

- Control of radioactive waste storage areas including container labeling/marking and monitoring containers for deformation or signs of waste decomposition

- Changes to the liquid and solid waste processing system configuration including a review of waste processing equipment that is not operational or abandoned in place

- Radio-chemical sample analysis results for radioactive waste streams and use of scaling factors and calculations to account for difficult-to-measure radionuclides

- Processes for waste classification including use of scaling factors and 10 CFR Part 61 analysis

- Shipment packaging, surveying, labeling, marking, placarding, vehicle checking, driver instructing, and preparation of the disposal manifest

- Audits, self-assessments, reports, and corrective action reports radioactive solid waste processing, and radioactive material handling, storage, and transportation performed since the last inspection

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 71124.08-05.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

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

4OA1 Performance Indicator Verification (71151)

.1 Data Submission Issue

a. Inspection Scope

The inspectors performed a review of the performance indicator data submitted by the licensee for the first Quarter 2012 performance indicators for any obvious inconsistencies prior to its public release in accordance with Inspection Manual Chapter 0608, “Performance Indicator Program.”

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

b. Findings

No findings were identified.

.2 Reactor Coolant System Specific Activity (BI01)

a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system specific activity performance indicator for the period from the second quarter 2012 through the first quarter 2012. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, “Regulatory Assessment Performance Indicator Guideline,” Revision 6.

The inspectors reviewed the licensee's reactor coolant system chemistry samples, technical specification requirements, issue reports, event reports, and NRC integrated inspection reports for the period of April 1, 2011, through March 30, 2012, 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.

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

b. Findings

No findings were identified.

.3 Reactor Coolant System Leakage (BI02)

a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system leakage performance indicator for the period from the second quarter 2011 through the first quarter 2012. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator logs; reactor coolant system leakage tracking data, issue reports, event reports, and NRC integrated inspection reports for the period of April 1, 2011, through March 31, 2012, to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

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

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's corrective action program at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. The inspectors reviewed attributes that included the complete and accurate

identification of the problem; the timely correction, commensurate with the safety significance; the evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent of condition reviews, and previous occurrences reviews; and the classification, prioritization, focus, and timeliness of corrective actions. 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 Selected Issue Follow-up Inspection

a. Inspection Scope

The inspectors reviewed the causes and corrective actions for failure of containment penetration assembly 274 electrical module A. This resulted in the loss of the pressurizer backup group 1 heaters on March 18, 2012. The inspectors reviewed the vendor hardware failure analysis report stating that a high resistance connection developed in the butt splice inside the epoxy seal. The inspectors reviewed Wolf Creek's apparent cause and extent of condition corrective actions and found that Wolf Creek has visually inspected other similar penetrations. Wolf Creek also has corrective actions perform thermography while penetrations are energized in order to detect failure at an earlier stage. The inspectors compared Wolf Creek's evaluation with guidance from the EPRI on containment building electrical penetration modules and did not find any missing maintenance activities that may have prevented the loss of the pressurizer backup group 1 heaters. Most degradation related to aging of the rubber seals in

contact with the inner and outer surfaces of containment and not the electrical conductors.

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

b. Findings

No findings were identified.

4OA3 Followup of Events and Notices of Enforcement Discretion (71153)

(Closed) Licensee Event Report 05000482/2012003-00, Train B ECCS Inoperable Due to Damaged Watertight Containment Spray Pump Door Seal

On April 17, 2012, at 2:53 p.m., the watertight door seal for the train B containment spray pump room was determined to be nonfunctional and the equipment supported by the door was inoperable. The equipment supported by the door is the train B residual heat removal pump and the train B containment spray pump. The door was repaired on April 18, 2012, at 2:48 p.m. The watertight seal was replaced, welding was performed on the knife-edge of the door and the door lugs were tightened. The apparent cause of this condition was a less than adequate preventive maintenance to identify potentially deficient door seals. This event is reportable under 10 CFR 50.73(a)(2)(i)(B) as an operation or condition prohibited by Technical Specifications 3.5.2, 3.5.3, 3.6.6, and Limiting Condition of Operation (LCO) 3.0.4. This condition is also reportable pursuant 10 CFR 50.73(a)(2)(v) as an event or condition that could have prevented the fulfillment of a safety function because the opposite train was out of service several times while the seal was degraded.

At the time of this licensee event report issued on June 18, 2012, the inspectors had already inspected this event under baseline inspection procedure 71111.06. The results of that inspection can be found in section 1R06 of this report.

These activities constitute completion of one event follow-up sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

4OA5 Other Activities

Assessment of Corrective Action to Address Substantive Crosscutting Issues P.1.a, P.1.c, and P.1.d

a. Inspection Scope

Wolf Creek's letter dated May 7, 2012, informed the NRC of its readiness for inspection of substantive crosscutting issues P.1.a (problem identification), P.1.c (evaluation), and

P.1.d (corrective action). From June 18 to 21, 2012, the inspectors gathered information to inform management's decision in the mid-2012 performance assessment. Consideration of possible closure of these substantive crosscutting issues will be an NRC decision using information from this inspection, guidance in Inspection Manual Chapter 0305, and the information discussed at a June 25, 2012, public meeting. The inspectors reviewed whether the substantive crosscutting issues were entered into the corrective action program (CAP), the causes identified, the corrective actions identified to address those causes, the measures of effectiveness used by the licensee to monitor improvement, and actual data for those effectiveness reviews.

This inspection activity constituted one sample of semi-annual trend review under inspection procedure 1152-05.

b. Findings and Assessment

No findings were identified.

P.1.a entry into the CAP

Wolf Creek addressed all P.1 substantive crosscutting issues in two main condition reports. Condition report 23032 was a root cause evaluation completed for a second time in September 2010. Condition report 23032 was written in response to the problem identification and resolution and human performance substantive crosscutting issues that led the site to Column III of the NRC's action matrix. Wolf Creek identified 63 corrective actions that were to correct the problem identification and resolution problems. Condition report 34455 was also a root cause in response to the 2010 end of cycle assessment letter from the NRC. Condition report 34455 identified 27 corrective actions. The inspectors concluded that the licensee appropriately entered this issue into the CAP.

P.1.a Causes

Root and apparent cause evaluations were self-critical and they found a lack of management involvement and oversight in the corrective action program over the last 3 years. These were the same causes identified for White performance indicators that the 95002 team examined under condition report 23032. Condition report 23032 had a second root cause that the station was over-confident in using the work controls process to manage critical equipment problems. Root cause 34455 had a similar root cause of leadership not aligning station behaviors for timely problem identification and resolution. Root cause 34455 had a contributing cause that the station had inadequate training on the design and licensing basis which is inhibiting effective problem evaluation. Further, the root cause found that there was no regular training for certain personnel on the design basis or its controls. The inspectors concluded that the licensee effectively identified the causes for this substantive crosscutting issue.

P.1.a Corrective actions

The inspectors sampled corrective actions. The previous large change in the corrective action program was to create the single point of entry for all issues into the CAP. This

eliminated the previous practice of writing a work order for a problem, and only allowed writing a condition report for each problem. While either method would work, the new method added working level and management level scrutiny to each condition report. The number of condition reports written increased since this change, often with multiple condition reports on the same problem. This was implemented in January 2011, and was responsive to 23032 root cause number two.

The inspectors observed that an important programmatic change to the Wolf Creek corrective action software was implemented on April 26, 2012. Although it does not appear to be directly linked to root cause 23032, a new department was formed which added more oversight to operability determinations and work control, which was responsive the root causes. Changes were made to track and evaluate degraded or nonconforming conditions with a new department named operations work control. The inspectors observed that the more recent immediate operability evaluations more closely tie the equipment requirements to the observed problems to confirm or refute operability or functionality (P.1.c). Also, the new changes track each degraded condition, and prevent equipment from being returned to full service without a review of all corrective actions by a senior reactor operator. The inspectors concluded that the added problem evaluation scrutiny was consistent with the identified causes. Although many methods of finding, evaluating, and fixing problems can work across the power reactor industry, Wolf Creek chose to make CAP changes while instituting new guidance on the accountability of the CAP. Based on a sampling review, the inspectors concluded that the corrective actions were appropriate to address the identified causes.

P.1.a Corrective Action Effectiveness Measures

Wolf Creek internal metrics consisted of monitoring and trending the condition report initiation rate overall by the site and department. Identification of the issues by the NRC or other organizations, rather than by licensee personnel, negatively impact the metric. Condition report initiation rate metrics showed a steady increase with most departments having a high self identification rates in Green with the exception of three in the Red due to NRC and external organization identification. The inspectors concluded that the licensee had developed reasonable effectiveness measures, and that those effectiveness measures demonstrated an improving trend for the station, but that the red indicators reflected a continuation of a long standing trend in those areas.

P.1.a Results

The inspectors observed a low threshold for problems and condition reports. Personnel interviewed indicated no hesitation to initiate condition reports. The inspectors observed several issues had two or more condition reports for the same problem. Some problems were consolidated to one condition report while others were not. More than one person or work group may write a condition report for the same problem. Condition report problem statements for those condition reports were not always reconciled to ensure that all aspects would be corrected. This was consistent with the observations of the biennial problem identification and resolution inspection documented in Inspection Report 2012007.

P.1.c Entry into the CAP

Wolf Creek addressed all P.1 substantive crosscutting issues in two main condition reports and one condition report from 2008. Condition report 23032 was a root cause evaluation completed for a second time in September 2010. Condition report 23032 was in response to the problem identification and resolution and human performance substantive crosscutting issues that led the site to being placed in Column III of the NRC's action matrix. Wolf Creek identified 63 corrective actions that were to correct the problem identification and resolution problems. Condition report 34455 also documented a root cause analysis in response to the 2010 end of cycle assessment letter from the NRC. Condition report 34455 identified 27 corrective actions. In the past, Wolf Creek also took action under condition report 2008-8810 for the P.1.c substantive crosscutting issue. The causes for 2008-8810 were nearly identical to the more recent root causes. The inspectors concluded that the licensee appropriately entered this issue into the CAP.

P.1.c Causes

Root and apparent causes have been self-critical and they found a lack of management involvement and oversight in the corrective action program over the last 3 years. These were the same causes identified for White performance indicators that the 95002 team examined under condition report 23032. Root cause 34455 has a similar root cause of leadership not aligning station behaviors for timely problem identification and resolution. Root Cause 34455 was written in March 2011 in response to the NRC's 2010 Assessment Letter, with the cause evaluation not completed until June 30, 2011. Root cause 34455 had a contributing cause of the station having poor training on the design and licensing basis which is inhibiting effective problem evaluation. A contributing cause was the over-reliance on the work control process to getting problems fixed. Wolf Creek has repeatedly found that less than timely evaluations have contributed to delays in corrective actions for substantive cross cutting issues. The inspectors concluded that the licensee effectively identified the causes for this substantive crosscutting issue.

P.1.c Corrective Actions

The inspectors sampled corrective actions. The previous large change in the corrective action program was to create the single point of entry for all issues into the CAP. This eliminated the previous practice of writing a work order for a problem, and only allowed writing a condition report for each problem. While either method would work, the new method added working level and management level scrutiny to each condition report. The licensee recently implemented an important programmatic change involving changes to the corrective action program software. Although it does not appear to be directly linked to root cause 23032, a new department was formed which adds more oversight to operability determinations and work control, which is responsive the root causes. Changes were made to track and evaluate degraded or non-conforming conditions with a new department named operations work control. The inspectors observed that the more recent immediate operability evaluations more closely tie the equipment requirements to the observed problems to confirm or refute operability or functionality (P.1.c). Also, the new changes track each degraded condition and equipment cannot be returned to full service without review of all corrective actions by a senior reactor operator (P.1.d). The inspectors found the added problem evaluation

scrutiny is consistent with the causes. Although many methods of finding, evaluating, and fixing problems can work across the power reactor industry, Wolf Creek chose to make CAP changes while instituting new guidance on the accountability of the CAP. Most other corrective actions centered on recurring training for cause evaluators and procedure changes to corrective action procedures, both directed at increasing the quality of condition report causal evaluations.

P.1.c Corrective Action Effectiveness Measures.

The licensee developed evaluation quality internal performance indications, including the results from corrective action review board and other challenge boards. The results of these metrics were trending in a positive direction. These quality metrics and oversight boards have undergone many changes in the last two years. The inspectors observed that the trends reflect the refueling and forced outages, which typically cause an increase in the number of evaluations needed. The operability evaluation metric up to May showed a declining trend in quality over the last 6 months, though inspectors noted that Wolf Creek did not find any evaluations that failed to demonstrate operability. Root and apparent cause evaluation completion timeliness goals showed an improving trend since October 2011, but are still Red and do not show average completion times that are close to procedural limits. The inspectors concluded that the licensee had developed reasonable effectiveness measures, although those effectiveness measures failed to demonstrate sustained improvement.

P.1.c Results

Creating a single point of entry into the CAP was a significant change. The changes to improve tracking of degraded or non-conforming conditions added some priority to fixing problems, but giving priority to these types of items is still not a formal process requirement. Corrective actions are still largely prioritized in the work control process. Most corrective actions have focused on improving condition report evaluation timeliness, providing evaluation methodology training (why tree, hazard-barrier-target, etc.), and improving coding and trending of causes.

The inspectors interviewed department corrective action coordinators and found that they had an active role in trending recurring problems in each department. The inspectors saw this as a positive change but not directly related to evaluation quality. Training on the plant design bases was positive and provided information on the overall regulatory framework, but did not include specific requirements for the trainees' systems or engineering discipline. The inspectors saw improvement in the rejection of the root cause by the corrective action review board for the January 13, 2012, loss of offsite power, although not all rejections were captured by the station's metric.

The inspectors reviewed Wolf Creek's comprehensive event safety-significance evaluation which examined all the problems revealed during the January 13, 2012, loss of offsite power. Problem evaluation was stated as a contributing cause in that self-assessment. Corrective actions were deferred to an apparent cause evaluation stemming from a quality assurance audit that found the corrective action program marginally effective. Corrective actions to that quality assurance assessment continued the trend of changes to cause method training and CAP procedure changes. With

design basis training being a self-identified weakness, inspectors observed that the number and high-level content of those training courses will challenge the adequacy of equipment specific problems, such as the leak seal repair in this report. The inspectors concluded that progress was being made toward implementing the corrective actions for this substantive cross-cutting issue, but that sustained improvement in the quality and timeliness of evaluations had not been demonstrated.

P.1.d Entry into the CAP

Wolf Creek addressed all P.1 substantive crosscutting issues in two main condition reports. Condition report 23032 was a root cause evaluation completed for a second time in September 2010. Condition report 23032 was in response to the problem identification and resolution and human performance substantive crosscutting issues that led the site to Column III of the NRC's action matrix. Wolf Creek identified 63 corrective actions that were to correct the problem identification and resolution problems. Condition report 34455 was also a root cause in response to the 2010 end of cycle assessment letter from the NRC. Condition report 34455 identified 27 corrective actions. The inspectors concluded that the licensee appropriately entered this issue into the CAP.

P.1.d Causes

Root and apparent cause evaluations for this substantive cross-cutting issue were self-critical, and they documented a lack of management involvement and oversight in the corrective action program over the last 3 years. These are the same causes the 95002 team examined under condition report 23032. Root cause 34455 had a similar root cause of leadership not aligning station behaviors for timely problem identification and resolution. Root cause 34455 had a contributing cause of the station having inadequate training on the design and licensing basis which was inhibiting effective problem evaluation. These causes are the same as those for the P.1.a and P.1.c substantive cross-cutting issues. The previous large change in the corrective action program was to create the single point of entry for all issues into the CAP. This eliminated the previous practice of writing a work order for a problem, and only allowed writing a condition report for each problem. While either method would work, the new method added working level and management level scrutiny to each condition report. The licensee recently implemented an important programmatic change involving changes to the corrective action program software. Although it does not appear to be directly linked to root cause 23032, a new department was formed which adds more oversight to operability determinations and work control, which is responsive the root causes Changes were made to track and evaluate degraded or non-conforming conditions with a new department named operations work control. The inspectors observed that the more recent immediate operability evaluations were more closely tied the equipment requirements to the observed problems in order to be able to confirm or refute operability or functionality. Also, the new changes track each degraded condition, and required that equipment cannot be returned to full qualification without review of all corrective actions by a senior reactor operator. The inspectors concluded that the increased problem evaluation scrutiny was consistent with the causes. Although many methods of finding, evaluating, and fixing problems can work across the power reactor industry, Wolf Creek chose to make CAP changes while instituting new guidance on the accountability of the

CAP. The inspectors concluded that the licensee effectively identified the causes for this substantive crosscutting issue.

P.1.d Corrective Actions

The inspectors reviewed selected corrective actions that were most responsive to the root causes. Condition report 23032, action 2-9, instituted on August 31, 2011, required the corrective actions review board review each issue coded as being a corrective action to prevent recurrence within 30 days of its closure. Separate from the root causes, the inspectors found other condition reports responding to NRC violations on annunciator power supplies, emergency diesel loading, operability evaluations, and maintenance rule stating that there was a need for continuing engineering training on standards for each of those issues. The inspectors reviewed training lesson plans for change package continuing training [modifications], "Regulatory, Current Licensing Basis, And Design Basis," and operability evaluation training for engineers and licensed operators. The inspectors observed that the training was conducted every 60 days. Wolf Creek has instituted corrective action backlog measurement indicators as a corrective action. The inspectors noted that the act of trending is not a corrective action. Those backlogs remain high, but have made some progress since the forced outage earlier this year. Engineering also had a significant backlog of over 5500 work orders in May 2012. The corrective action backlog initiative plan required regular meetings for departments to drive a reduction in their backlog, but no other specific actions were developed, such as addressing actions by priorities. The inspectors also noted that there were a significant number of open actions to correct NRC violations, especially for scoping of maintenance rule functions. Based on a sampling review, the inspectors concluded that the corrective actions to address this substantive cross-cutting aspect were partially appropriate to address the identified causes, but specific actions to ensure that CAP corrective actions were timely and effective were lacking.

P.1.d Corrective Action Effectiveness Measures

Wolf Creek's effectiveness review for root cause condition report 23032 concluded that there was not sustained improvement in ensuring that corrective actions were timely and effective due to not meeting internal station metrics set for maintenance backlogs, repetitive maintenance rule functional failures, and two other failed effectiveness follow-ups. The interim effectiveness follow-up for root cause condition report 34455 was met with the exception of one internal performance indicator for too great a ratio of NRC identified to licensee identified findings. The inspectors observed that the identification credit is an NRC function and affects the indicator, which may not be insightful. The conclusion of condition report 34455 interim effectiveness review stated that additional time was needed to increase the internal self-identification metrics and that more time was needed. This effectiveness review also gave credit for future expected improvement in the equipment performance index, a licensee metric, and which was Yellow at the time of the inspection. The final effectiveness follow-up was scheduled to be completed by December 20, 2012. The non-cited violation closure effectiveness performance indicator was Red in January, February, and March 2012. Wolf Creek has written two condition reports on the non-cited violation effectiveness performance indicator and the need to return it to Green and are due to have formulated corrective actions by August 9, 2012. The inspectors concluded that the licensee had developed

reasonable effectiveness measures, although those effectiveness measures failed to demonstrate sustained improvement.

P.1.d Results

The inspectors sampled input data and observed that Wolf Creek had self-critical internal performance measures because those measurement methods and inputs were found to reflect NRC identified and licensee-identified issues. The internal metrics for trends in closure of condition reports, corrective action age, and the maintenance backlog show recent positive improvement. The condition report 23032 measures of effectiveness stated that the root cause actions will be effective when the equipment reliability index and performance index reflect sustained improvement. The inspectors reviewed the equipment reliability index and found that it is a culmination of several sub indicators, which was Red until April 2012 when it became Yellow. One important indicator the inspectors reviewed was the critical equipment failure indicator. The inspectors noted that this indicator went from White to Red to White over the last year. The inspectors observed that there was not sustained improvement in these internal metrics.

The inspectors found a significant challenge in the number of open corrective actions in response to NRC violations and findings. The inspectors reviewed effectiveness followup evaluations for findings and violations in NRC inspection reports, and found these effectiveness follow-ups to be sufficiently untimely that they may not provide an independent check prior to recurrence or prevent unnecessary corrective action delay. With a large backlog and many long term actions, effectiveness follow-ups continue to wait for final corrective action completion because the licensee had no process to perform interim effectiveness reviews when long-term actions were assigned. For example, the inspectors reviewed an open corrective action to install heat tracing for boric acid piping. The modification was complete, but relief valves have not been installed and Wolf Creek was having to rely on a control room annunciator to have operators respond prior to over-pressurization of piping. No time limit was given to the annunciator response. The inspectors calculated the operator's time limit to respond by using the heat trace kilowatt rating and the heat capacity of the piping and water. The inspectors found that operators had a reasonable amount of time, but Wolf Creek initiated condition report 54278 to add a time constraint. Despite this corrective action being over 3 years old and having three effectiveness follow-up extensions, corrective action was not complete at the time of the inspection because the relief valves had not been procured.

The inspectors also reviewed two issues related to NRC-identified problems with emergency diesel generator testing. The inspectors found that the issue occurred a second time due to inadequate corrective actions from a previous finding. The issue was work in progress and thus was considered to be a minor issue within the inspection program. Also, open corrective actions were inappropriately categorized as 'enhancements' to fix the post-maintenance testing deficiency. Wolf Creek subsequently wrote action 49551-02-01 to make the necessary changes. The inspectors concluded that progress was being made toward implementing the corrective actions for this substantive cross-cutting issue, but that sustained improvement in the quality and timeliness of evaluations had not been demonstrated.

Overall Observations and Conclusions

Wolf Creek showed improvement in all three substantive cross-cutting areas by its internal effectiveness measures and by a reduced number of NRC findings with those crosscutting attributes. Wolf Creek has instituted many internal performance measures as corrective actions. Every station has a policy or overarching safety guidance document. Wolf Creek has made changes to that policy and instituted new ones for a healthy safety culture. In addition to the station's policy, each department has developed its own policy. Wolf Creek made changes to its accountability of personnel for problem identification and resolution and other aspects of safety culture. This includes changes to Wolf Creek's enforcement of these policies. The inspectors observed that previous efforts to reinforce theses practices and organizational values have not been successful. The inspectors interviewed selected personnel about the safety culture changes. All staff interviewed welcomed changes to fix problems promptly, but their feedback was mixed as to the effectiveness of changes such as procedures and training. Nearly all interviewees expressed concern about their work load and station's ability to correct problems.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On April 26, 2012, the inspectors presented the results of the radiation safety inspection to Mr. M. Sunseri, President and Chief Executive Officer, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On July 18, 2012, the inspectors presented the inspection results to Mr. Richard Clemens, Vice President of Strategic Projects, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. All proprietary information was returned or destroyed.

4OA7 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 meets the criteria of the NRC Enforcement Policy for being dispositioned as a non-cited violation.

.1 On January 31, 2012, Wolf Creek identified that inservice inspection for the second 10-year period were missed for two valves. Valves BB8379A and BB8379B are chemical and volume control system alternate charging check valves to reactor coolant system loop four. Both are ASME Code Class 1 valves. In 1987, valve BB8379B had a leak at the body-to-bonnet joint and its studs were re-torqued. The valve continued to leak a small amount. Subsequently, valves BB8379A and BB8379B each had a seal cap, or leakage control device, installed on December 9, and 28, 1987, respectively.

Title 10 CFR 50.55a(g)(4) requires licensees to follow the pressure test requirements of the ASME Code Section XI. ASME Code, Section XI, IWA-5240, requires visual examinations as part of system pressure tests. ASME Code Section XI, IWA-5242, 1998 Edition through 2000 addenda, requires pressure retaining bolted connections for VT-2 visual examinations in borated water systems. Contrary to the above, from September 3, 1995, to the present, Wolf Creek did not perform a visual inspection of the valve body-to-bonnet studs. This finding was more than minor because it impacted the Initiating Events Cornerstone and its attribute of equipment performance. Specifically, it affected the objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Using Inspection Manual Chapter 0609, Appendix A ,"The Significance Determination Process (SDP) for Findings At-Power," this finding was determined to be of very low safety significance because an evaluation was able to demonstrate structural integrity. Specifically, stud stress was not sufficiently close to the yield stress to cause a loss of integrity. Therefore, the finding does not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment will not be available. The licensee has entered this issue into their corrective action program as condition reports 48493 and 48494. Wolf Creek planned to remove the seal caps and perform the inspection in the next refueling outage.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

T. Baban, Manager, Systems Engineering
P. Bedgood, Manager, Radiation Protection
J. Broschak, Vice President, Engineering
S. Carpenter, Technician, Instruments and Controls
R. Clemons, Vice President, Strategic Projects
D. Dees, Superintendant, Operations
T. East, Superintendent, Emergency Planning
R. Evenson, Requalification Program Supervisor
R. Flannigan, Manager, Nuclear Engineering
K. Fredrickson, Engineer, Licensing
D. Gibson, Technician, Radiation Protection
R. Hammond, Supervisor, Regulatory Support
J. Harris, System Engineer
S. Henry, Operations Manager
R. Hobby, Licensing Engineer
S. Hossain, Engineer, System Engineering
T. Jensen, Manager, Chemistry
T. Just, Senior Technician, Chemistry
J. Keim, Support Engineering Supervisor
S. Koenig, Manager, Corrective Actions
M. McMullen, Technician, Engineering
C. Medenciy, Supervisor, Radiation Protection
W. Muilenburg, Licensing Engineer
M. McMullen, Design Engineer, Engineering
K. Miller, Technician Level III, Instruments and Controls
R. Murray, Simulator Supervisor
E. Ray, Manager, Training
L. Ratzlaff, Manager, Maintenance
T. Rice, Manager, Environmental Management
L. Rockers, Licensing Engineer
R. Ruman, Manager, Quality
G. Sen, Regulatory Affairs Manager
D. Scrogum, Systems Engineer, Engineering
R. Smith, Plant Manager
L. Solorio, Senior Engineer
M. Sunseri, President and Chief Executive Officer
J. Truelove, Supervisor, Chemistry
J. Weeks, System Engineer
M. Westman, Assistant to Site Vice President

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000482/2012003-01	NCV	Unacceptable Leakage Through Safety Related Watertight Door During Loss of Offsite Power (Section 1R06)
05000482/2012003-02	NCV	Incorrect Leak Seal Injection Port Installation." (Section 1R18)

Closed

05000482/2012-03-00	LER	Train B ECCS Inoperable Due to Damaged Watertight Containment Spray Pump Door Seal (Section 4OA3)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

PROCEDURES

NUMBER	TITLE	REVISION
OFN SG-003	Natural Events	22
AI 14-006	Severe Weather	12
OFN AF-025	Unit Limitations	36

DRAWINGS

A-1320	Fuel Building Floor Plan 2047'-6" and Roof	0

MISCELLANEOUS

OpESS 2012/01	Operating Experience Smart Sample "High Wind Generated Missile hazards"	0

CONDITION REPORTS

51552	51562	46940

Section 1R04: Equipment Alignment

PROCEDURES

NUMBER	TITLE	REVISION
SYS GK-200	Inoperable Class IE A/C Unit	24
SYS EM-120	BIT Depressurization	2

DRAWINGS

NUMBER	TITLE	REVISION
M-12EM01	Piping & Instrumentation Diagram High Pressure Coolant Injection System	38
M-12EM02	Piping & Instrumentation Diagram High Pressure Coolant Injection System	19

CONDITION REPORTS

00053393	00053472	00053452	00053549	00053625
00053671	00053672	00053685	00053696	00053703
00053709	00053710	00053791	00053785	00053793
00053796	00053798	00048882		

Section 1R05: Fire Protection

PROCEDURES

NUMBER	TITLE	REVISION
AP 10-106	Fire Preplans	12
AP 10-104	Breach Authorization	26

DRAWINGS

NUMBER	TITLE	REVISION
E-1F9905	Fire Hazard Analysis, Fire Area A-13 (Reference A-1803)	4
E-1F9905	Fire Hazard Analysis, Fire Area A-14 (Reference A-1804)	4
E-1F9905	Fire Hazard Analysis, Fire Area A-15 (Reference A-1804)	4
M-663-00017A	Fire Protection Evaluations for Unique or Unbounded Fire Barrier Configurations	3

Section 1R06: Flood Protection Measures

PROCEDURE

NUMBER	TITLE	REVISION
MPM XX-002	Water Tight Door Preventive Maintenance Activity	4

CONDITION REPORTS

51570	51622	52975	52794	

Section 1R11: Licensed Operator Requalification Program

MISCELLANEOUS

NUMBER	TITLE	REVISION
LR4607005	Requal Simulator Exam Scenario	2
AP 21-001	Conduct of Operations	57

Section 1R12: Maintenance Effectiveness

PROCEDURES

NUMBER	TITLE	REVISION
WCOP-24	Operations EMG/OFN Setpoints	8
STN AE-007	Startup Main Feedwater Pump Operational Test	2 and 3
AP 16E-002	Post Maintenance Testing Development	10 and 11
MDI 06-01	Guidelines for Work Order Peer Review	6
EDI 23M-050	Engineering Desktop Instruction Monitoring Performance to Criteria and Goals	8
STS ML-001	Monthly Surveillance Log	45
SB-01	Reactor Protection systems	

CONDITION REPORTS

51655	51706	41997	53417	35413
35426	35532	35533	35535	35537
35539	35540	35541	35542	35544
35545	35546	35547	35548	35549
35550	35551	35552	35553	35554
35555	35558	35560	35614	35615
35617	35619	35620	35621	35622
35623	35624	35625	35626	35627
35628	35629	35882	36012	35013
36014	36038	36039	36040	36041
36042	36043	36044	36045	36057

36058	36060	36061	36062	36064
36065	36078	36079	36080	36081
36082	3608336084	36117	36118	36119
36134	36135	38108	40687	40753
46341	48955	49672	49738	

WORK ORDER

11-346146-003

PERFORMANCE IMPROVEMENT REQUESTS

36518	36777	37048	37107	37439
37482	37615	38003	38023	38106
38162	38108	38369	38487	38488
38873	39349	39350	39351	39365
43639	49672	54110	54163	54164
45414				

CALCULATIONS

NUMBER	TITLE	REVISION
AN-11-007	Startup Feedwater Pump (PAE02) Flow Rate Required to Remove Decay Heat Following Reactor Shutdown	0

DRAWINGS

NUMBER	TITLE	REVISION
M-12AE01	Piping & Instrumentation Diagram Feedwater System	38

Section 1R13: Maintenance Risk Assessment and Emergent Work Controls

PROCEDURES

NUMBER	TITLE	REVISION
NK-022	Load Test	2
STS-MT-020	125 Volt DC Battery Inspection/Charger Operational Test	25B

CONDITION REPORTS

51421 51565

WORK ORDERS

06-281938-000 04-259540-000 04-259542-000 12-353322-000 12-353322-001

DRAWINGS

NUMBER	TITLE	REVISION
E-051-00058	Three phase SCR Controller Battery Charger Schematic	WO7
WIP-M-761-00075-W08-A-1	SNUPPS Process Control Block Diagram+	00

MISCELLANEOUS

NUMBER	TITLE	DATE
N/A	On-Line Nuclear safety and Generation Risk Assessment	May 30, 2012

Section 1R15: Operability Evaluations

DRAWINGS

NUMBER	TITLE	REVISION
M-724-00276	Swing Check Valve	W04
OE BB12-004	BB8397A/B CVCS Alternate Charging to Loop 4 Check Valve	1
MGM MOOP-08	Torquing Guidelines for Bolted Connections	13
RR-87-060	ASME Section XI Repair/Replacement Plan	0
RR-87-060	ASME Section XI Repair/Replacement Plan	1

PROCEDURES

NUMBER	TITLE	REVISION
EPP 06-002	Technical Support Center Operations	30A
EPP 06-013	Exposure Control and Personnel Protection	6
EMG E-0	Reactor Trip or Safety Injection	27

CALCULATIONS

NUMBER	TITLE	REVISION
AN 99-020	Control Room Habitability of a Postulated LOCA, based on a Control Room Unfiltered Inleakage of 20.0 cfm	2

CALCULATIONS

NUMBER	TITLE	REVISION
GK-M-001	Safety Related Control Room Building HVAC Capabilities During Accident Conditions (SGK04A/B and SGK05A/B)	2
GK-E-001	Electrical Equipment Heat Loads in ESF SWGR, DC SWBD, & Battery Rooms	2

MISCELLANEOUS DOCUMENTS

NUMBER	TITLE	REVISION / DATE
ITLS Report 24045	Liquid Penetrant Inspection of Submitted Machined Parts	August 7, 1978
	Jessop Steel Company – Ultrasonic Inspection Report	June 28, 1978
	Operability Evaluation OE BB-12-004	00
Case N-616	Cases of ASME Boiler and Pressure Vessel Code	May 7, 1999
SAP-12-58	Westinghouse LTR-SEE-III-12-81	April 14, 2012
128136	Westinghouse Drawing Revision – Material Changes	September 28, 1993
CA2412	1st & 2nd Off Check Valve PMs	December 26, 2008
OE BB12-004	BB8397A/B CVCS Alternate Charging to Loop 4 Check Valve	00
CA4790	Write PMC Work Request	December 26, 2008
CA4791	Revise AP 23F-001	December 26, 2008
CA4792	Update BID-CV-1	December 26, 2008
M-622.1 (Q)	Design Specifcation for Packaged Air Conditioning Units	9

WORK REQUESTS

03611-87 00122-87

CONDITION REPORTS

00048493 00048494 00051530 003419 0052822

WORK ORERS

07-295490-000	08-309436-000	10-324925-000	10-327516-000	10-327516-001
10-324925-000	10-331280-000	10-327516-000	11-339107-001	11-339107-002
11-339107-000	12-351057-000	00-223094-011		

Section 1R18: Plant Modifications

NUMBER	TITLE	REVISION / DATE
BMV0037	Furmanite Adapter Installation Evaluation	00
MPM LR-001	Leak Sealant Injection	7
WCN-00-001	Reedy Engineering, Inc. No 00-216961-000	0
ECW-119	Furmanite The Solutions Group	0

DRAWINGS

NUMBER	TITLE	REVISION / DATE
M-240-00072	Valve Assembly – 2 IN Diaphragm Y Type, Globe 1522 LB.C.S	3
	1974 ASME Code, Article NC-3000	
	1986 ASME Code, NC-3229	
	1983 ASME Code, NC3232.2	
Fig NC3329(g)-1	1986 Edition ASME Code	
MPM LR-001	Leak Sealant Injection	7
Change Package 013482	Furnmanite Adapter Fitting and BMV0037 Furmanite Repair	00
ECW-119	Pressure Seal Calculation Sheet	0

CONDITION REPORT

52992

WORK ORDERS

10-333183-002	10-333183-009	11-346576-002	11-346576-003	11-346576-006
11-346576-009	11-346576-010	11-346576-015	11-346576-017	

Section 1R19: Postmaintenance Testing

PROCEDURES

NUMBER	TITLE	REVISION
MPE GK-003	Control Room and Class 1E A/C Units Preventive Maintenance Activity	3A
MPE GK-004	GK Unit Preparation for Work	4
STS IC-500G	Channel Calibration DT/TAVG Instrumentation Loop 4	22A
STS IC-204A	Channel Operational Test of TAVG, dT and Pressurizer Pressure Protection Set Four	17B
INC C-0026	7300 Lead/Lag Card (NLL0G01 Artwork Revisions 12)	2A
INC C-0016	7300 Summing AMP Card (NSA1 and NSA2)	10A
STS IC-502B	Channel Calibration of 7300 Process Pressurizer Pressure Instrumentation	16
STS IC-444	Channel Calibration NIS Power Range N-44	11B

WORK ORDERS

12-354805-003	11-348929-000	11-348929-002	11-348929-003	11-348929-004
11-348929-005	12-355385-001	12-355293-001	12-355293-004	12-355293-005

DRAWINGS

NUMBER	TITLE	REVISION
E-13GK13A	Schematic Diagram Class IE Electrical Equipment A/C Unit	6
QCP-20-514	Eddy Current Examination Technique Sheet	5C
	Eddy Current Calibration Summaries	
WIP-M-761-02102-004-A-1	Interconnecting wiring diagram cabinet 04 SNUPPS Nuclear Power Plant Controls	00
WIP-M-761-02088-W08-A-1	Interconnecting wiring diagram cabinet 04 SNUPPS Nuclear Power Plant Controls	00
M-761-02084	Interconnecting wiring diagram cabinet 04 SNUPPS Nuclear Power Plant Controls	W20

Section 1R22: Surveillance Testing

PROCEDURES

NUMBER	TITLE	REVISION
ABHV0011	Solenoid Block Replacement	
STS AB-205	Main Steam System Inservice Valve Test	29
6101-00007	CS Innovations LLC 2008 Confidential and Proprietary	2
J-105A-00013	MSFIS Information, Operation & Maintenance Manual	W02
SY1503900	Standard Functional Description of System Medium Operated Isolation Valves	W01
	Main and Reheat Steam System	18
STS EJ-100A	RHR System Inservice Pump A Test	45
STS EN-100B	Containment Spray Pump B Inservice Pump Test	26
TMP 11-013	ECCS Check Valve Leak Check	2
WCOP-02	Inservice Testing Program Third Ten-Year Interval	14

CALCULATIONS

NUMBER	TITLE	REVISION
AN 06-017	Steamline Break Core Response Analysis to Support MSIV/MFIV Replacement Project (DCP #09952)	0
AN 06-018	Feedwater Line Break Analysis to Support the MSIV/MFIV Replacement Project (DCP #09952)	0
AN-06-019	SGTR Stuck Open ARV Analysis to Support the MSIV/MFIV Replacement Project (DCP #09952)	0
AN-06-020	Steam Generator Tube Rupture Overfill Analysis to Support the MSIV/MFIV Replacement Project (DCP #09952)	0
EJ-100A	Pump: PEJ01A: Group A	

DRAWINGS

NUMBER	TITLE	REVISION
M-628-00140	MSIV System Medium Actuator Schematic	W01
M630-00124	Standard Functional Description of System Medium Operated Isolation Valves	W01

CONDITION REPORTS

51396 51995

Section 4OA1: Performance Indicator Verification

PROCEDURES

NUMBER	TITLE	REVISION
STS BB-006	Reactor Coolant System Inventory Balance Using NPIS Computer	9
AP 26A-007	NRC Performance Indicators	8
STS CH-025	Reactor Coolant Dose Equivalent Iodine Determination	5

MISCELLANEOUS DOCUMENTS

NUMBER	TITLE	REVISION
NEI 99-02	Regulatory Assessment Performance Indicator Guidelines	6

Section 4OA2: Identification and Resolution of Problems

MISCELLANEOUS DOCUMENTS

NUMBER	TITLE	REVISION / DATE
12-1119-L-01 50754	Final Report on Laboratory Evaluation of Failed Containment Electrical Penetration Assembly ZNE274 Module A; Purchase Order No. 758996/0Pressurizer Heater Cables Found Burnt	May 8, 2012
WM 12-0013	Notification of Readiness for Inspection of Human Performance and Problem Identification and Resolution Safety Culture Themes for the Wolf Creek Generating Station	May 7, 2012
	Wolf Creek Station-Wide Fundamental Behaviors	Mar 19, 2012
	Corrective Action Recovering Monitoring Metrics	May 2012
	Corrective Action Recovering Monitoring Metrics	September 2011
Letter No. SL-WC-2012-003	Transmittal of Summary of Results for RELAP ESW Waterhammer Analysis	June 19, 2012
IIT 12-001	Comprehensive Event Safety Significance Assessment	
P.1(c)	WCNOC Activities Associated with Resolutions of NRC Cross-Cutting Aspect P.1(c)	June 6, 2012
P.1(a)	WCNOC Activities Associated with Resolution of NRC Cross-Cutting Aspect P.1(a)	June 6, 2012

MISCELLANEOUS DOCUMENTS

NUMBER	TITLE	REVISION / DATE
P.1(d)	WCNOC Activities Associated with Resolution of NRC Cross-Cutting Aspect P.1(d)	June 6, 2012
	Corrective Action Backlog Reduction Initiative	May 2012
AI 28A-006	Apparent Cause Evaluation	2

CONDITION REPORTS

15367	23032	26691	34455	51952
48182	48642	50807	50754	50809
51207	51290	51303	51408	51464
51429	51698	51952	53137	54278

Section 4OA5: Other Activities

PROCEDURES

NUMBER	TITLE	REVISION
AP 28A-100	Condition Reports	16
ALR 00-037E	CVCS HT Trace	8
SYS BG-206	Boric Acid System Operation	40
AI-22A-001	Operator Work Arounds/Operator Burdens/Control Room Deficiencies	10A
AE-04-51	Provide feedwater and controls to the steam generator (startup feedpump)	

DRAWINGS

NUMBER	TITLE	REVISION
M-12BG05	Piping & Instrumentation Diagram Checmical & Volume Control System	17

CALCULATION

NUMBER	TITLE	REVISION
BG-M-051		0

QUICK HIT DETAIL REPORT

1953

CONDITION REPORTS

20709	20717	21039	27909	29602
30995	31129	31746	32129	34730
34065	34455	36600	39846	39847
39848	39849	39850	39851	39852
40714	43454	45218	48234	49551
50052	52151-01	5222-01	52447-01	52613-01
52580	52851	53024	53793-01	53791-01
54238	54239	54240		

MISCELLANEOUS DOCUMENTS

NUMBER	TITLE	REVISION / DATE
Page 15 0f 31	Apparent Cause Evaluation Time	SCCI P.1/c
AL 28A-100	Cause Evaluations	April 24, 2012
SEL 2010-189	RIS 2005-20 Alignment Benchmark	November 8 and 22, 2010
	Change Package 013130	15
	WC-NRC Component Design Bases Inspection NRC Inspection Report 05000482/2010007	January 11, 2011
BLSE 578 File 7854	SNUPPS Project Diesel Generator Building Ventilation System Description	March 27, 1974
BLSE-435 File 7850	SNUPPS Project Heating, Ventilation, and Air Conditioning Design Criteria	
	Maintenance Rule Expert Panel Meeting Minutes	April 19, 2012
EDI 23M-250	Engineering Desktop Instruction Monitoring Performance to Criteria and Goals	3
K15-002	Audit 12-04-CAP Corrective Action Program	May 21, 2012

WORK ORDERS

10-332371-009	10-332371-022	10-332371-038

PERFORMANCE IMPROVEMENT REQUESTS

49220 42496