



UNITED STATES
NUCLEAR REGULATORY COMMISSION

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

February 11, 2009

Rick A. Muench, President and
Chief Executive Officer
Wolf Creek Nuclear Operating Corporation
P.O. Box 411
Burlington, KS 66839

SUBJECT: WOLF CREEK GENERATING STATION - NRC INTEGRATED INSPECTION
REPORT 05000482/2008005

Dear Mr. Muench:

On December 31, 2008, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Wolf Creek Generating Station. The enclosed integrated inspection report documents the inspection findings, which were discussed on January 15 and 21, 2009 with you and other members of your staff.

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

This report documents two NRC identified findings of very low safety significance (Green). Both findings were determined to involve violations of NRC requirements. Additionally, two licensee-identified violations, which were determined to be of very low safety significance, are listed in this report. However, because of the very low safety significance and because they are entered into your corrective action program, the NRC is treating these findings as noncited violations, consistent with Section VI.A.1 of the NRC Enforcement Policy.

If you contest the violations or the significance of the noncited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001, with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 612 E. Lamar Blvd, Suite 400, Arlington, Texas, 76011-4125; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the Wolf Creek Generating Station.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, and its enclosure, will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's document system (ADAMS).

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

Sincerely,

/RA/

Vincent G. Gaddy, Chief
Project Branch B
Division of Reactor Projects

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

Enclosure:

Enclosure: Inspection Report 05000482/2008005
w/Attachment: Supplemental Information

cc w/Enclosure:

Vice President Operations/Plant Manager
Wolf Creek Nuclear Operating Corporation
P.O. Box 411
Burlington, KS 66839

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

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

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

Office of the Governor
State of Kansas
Topeka, KS 66612

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

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

Chief, Radiation and Asbestos
Control Section
Kansas Department of Health and
Environment
Bureau of Air and Radiation
1000 SW Jackson, Suite 310
Topeka, KS 66612-136

Electronic distribution by RIV:

Regional Administrator (Elmo.Collins@nrc.gov)
 Deputy Regional Administrator (Chuck.Casto@nrc.gov)
 DRP Director (Dwight.Chamberlain@nrc.gov)
 DRP Deputy Director (Anton.Vegel@nrc.gov)
 DRS Director (Roy.Caniano@nrc.gov)
 DRS Deputy Director (Troy.Pruett@nrc.gov)
 Senior Resident Inspector (Chris.Long@nrc.gov)
 Site Secretary (Shirley.Allen@nrc.gov)
 Branch Chief, DRP/B (Vincent.Gaddy@nrc.gov)
 Senior Project Engineer, DRP/B (Rick.Deese@nrc.gov)
 Public Affairs Officer (Victor.Dricks@nrc.gov)
 Team Leader, DRP/TSS (Chuck.Paulk@nrc.gov)
 RITS Coordinator (Marisa.Herrera@nrc.gov)

Only inspection reports to the following:

DRS STA (Dale.Powers@nrc.gov)
 OEDO RIV Coordinator, Primary (Shawn.Williams@nrc.gov)
 OEDO RIV Coordinator, Backup (Eugene.Guthrie@nrc.gov)
 ROPreports

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**U.S. NUCLEAR REGULATORY COMMISSION
REGION IV**

Docket: 05000482

License: NPF-42

Report: 05000482/2008005

Licensee: Wolf Creek Operating Corporation

Facility: Wolf Creek Generating Station

Location: 1550 Oxen Lane SE
Burlington, Kansas

Dates: September 28 through December 31, 2008

Inspectors: C. Long, Senior Resident Inspector
M. Peck, Diablo Canyon Senior Resident Inspector
W. Schaup, Reactor Engineer
P. Jayroe, Project Engineer
B. Baca, Health Physicist
P. Elkmann, Senior Emergency Preparedness Specialist
S. Garchow, Senior Operations Engineer
G. Apger, Operations Engineer
S. Hedger, Operations Engineer

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

SUMMARY OF FINDINGS

IR 05000482/2008005, 9/28/2008 - 12/31/2008; Wolf Creek Generating Station, Integrated Resident and Regional Report; Maintenance Risk Assessments and Emergent Work Control and Identification and Resolution of Problems.

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

A. NRC-Identified Findings and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a noncited violation of Technical Specification 5.4.1.a, procedures, for changing the equipment out-of-service log outside of the procedure change process. On November 25, 2008, the inspectors questioned the status of excess letdown Valve 8153B because its equipment out-of-service log entry changed from available to unavailable. The inspectors were informed that the meaning of unavailable was verbally changed to mean that the valve was inoperable but considered available. This contradicted the words of the electronic log and Procedure AP 21F-001, "Equipment Out of Service Control." Operations management was aware of the change to the terminology. Inspectors reviewed Procedures AP 21F-001 and found it required a senior operator to make and maintain the equipment out-of-service log. Procedure AP 15C-004, "Preparation, Review and Approval of Procedures, Instructions and Forms," defines 'AP' class procedures as those that, in part, implement activities that can significantly affect nuclear safety. Inspectors did not identify any other formal change processes that led to the log changes. Inspectors found no formal training or communication to all licensed and nonlicensed operations staff on this change.

The failure to implement AP 21F-001 was considered a performance deficiency. The finding was determined to be more than minor because it could become a more significant safety concern if procedures and configuration controls are changed outside the required process. The inspectors evaluated the significance of this finding under the mitigating systems cornerstone using Phase 1 of Inspection Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," and determined that the finding was of very low safety significance (Green) because no systems, structures, or components were inappropriately out of service for greater than 24 hours due to errors in the log. Specifically, no equipment status was lost such that it was returned to service inappropriately. Further, none of the affected equipment was risk significant for the mitigation of external events such as flooding. The inspectors determined that this finding has a crosscutting aspect in the area of Human Performance associated with the Decision Making component because Wolf Creek did not use

its procedure change process to demonstrate that changing the equipment out service log the change was a safe course of action. Although roles and authority are defined in Procedure AP 15C-004, these roles and authorities were not implemented for a safety significant decision [H.1.a] (Section 4OA2).

Cornerstone: Barrier Integrity

- Green. On September 24, 2008, inspectors identified a noncited violation of 10 CFR 50.54(j) in which the fix it now team manipulated limit switches for Valve ACPV186C that caused the reactor to exceed the licensed thermal power limit of 3565 MWt for 27 minutes until reactor operators reduced power. The fix it now superintendent designated this work as tool pouch maintenance which required no prior planning. When the instrumentation and controls technician recoupled the limit switch to the stem linkage, position indication of Valve ACPV186C changed from open to closed. Unknown to the control room or the fix it now team, Valve ACPV186C is interlocked with Valve ACHV256D which is a dump valve from Moisture Separator Reheater C to the condenser. When Valve ACHV256D opened, it caused a positive reactivity addition which exceeded the licensed thermal power limit.

The failure to adequately plan a work activity that resulted in an unexpected positive reactivity addition is a performance deficiency. The inspectors determined that the finding was more than minor because it is associated with the configuration control attribute for the Barrier Integrity Cornerstone; and it affected the cornerstone objective of providing reasonable assurance that physical design barriers, such as fuel cladding, protect the public from radionuclide releases caused by accidents or events. Specifically, this issue relates to the reactor manipulation example of the configuration control attribute. The inspectors evaluated the significance of this finding using Phase 1 of Inspection Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," and determined that the finding was of very low safety significance or Green because the fuel cladding barrier was affected but did not affect the reactor coolant system or containment barriers. The inspectors determined that this finding has a crosscutting aspect in the area of Human Performance associated with the Decision Making component because Wolf Creek used flawed assumptions in the work planning process for Valve ACPV186C to demonstrate that the 'Tool Pouch' course of action was safe [H.1.b] (Section 1R13).

REPORT DETAILS

Summary of Plant Status

The plant started the inspection period at 100 percent rated thermal power and remained there for the rest of the quarter.

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection (71111.01)

.1 Readiness to Cope with External Flooding

a. Inspection Scope

The inspectors evaluated the design, material condition, and procedures for coping with the design basis probable maximum flood. The evaluation included a review to check for deviations from the descriptions provided in the Updated Safety Analysis Report for features intended to mitigate the potential for flooding from external factors. As part of this evaluation, the inspectors checked for obstructions that could prevent draining, checked that the roofs did not contain obvious loose items that could clog drains in the event of heavy precipitation, and determined that barriers required to mitigate the flood were in place and operable. Additionally, the inspectors performed a walkdown of the protected area to identify any modification to the site that would inhibit site drainage during a probable maximum precipitation event or allow water ingress past a barrier. The inspectors also reviewed the abnormal operating procedure for mitigating the design basis flood to ensure it could be implemented as written. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one external flooding sample as defined in Inspection Procedure 71111.01-05.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignments (71111.04)

.1 Partial Walkdown

a. Inspection Scope

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

- November 8, 2008, Boric Acid System
- October 7, 2008, Safety Injection Pump A
- October 7, 2008, Centrifugal Charging Pump A
- December 10, 2008, 125 Volt Vital DC (NK)

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

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

b. Findings

No findings of significance were identified.

.2 Complete Walkdown

a. Inspection Scope

On December 4, 2008, the inspectors performed a complete system alignment inspection of the fire protection water system to verify the functional capability of the system. The inspectors selected this system because it was either safety significant or risk significant in the licensee's probabilistic risk assessment. The inspectors walked down the system to review mechanical and electrical equipment line ups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. The inspectors reviewed a sample of past and outstanding work orders to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the corrective action program database to ensure that system equipment-alignment problems were being identified and appropriately resolved. Specific documents reviewed during this inspection are listed in the attachment.

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

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Fire Inspection Tours

a. Inspection Scope

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

- October 7, 2008, Fire Area A-8, 2000' Auxiliary Building Rooms 1311, 1312, 1312, and 1314
- October 7, 2008, Fire Area A-8, 2000' Auxiliary Building Rooms 1315, 1316, 1317, and 1320
- October 1, 2008, Piping Penetration Room B
- October 2, 2008, 1974' Control Building and Communications Corridor

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 four quarterly fire-protection inspection samples as defined in Inspection Procedure 71111.05-05.

b. Findings

No findings of significance were identified.

.2 Annual Fire Protection Drill Observation (71111.05A)

a. Inspection Scope

On October 17, 2008, the inspectors observed fire brigade activation for the actual fire in the 'burn box' fire training facility. Inspectors also observed the October 13 and 27, 2008, fire brigade drills in the 2016' level of the control building. The observation

evaluated the readiness of the plant fire brigade to fight fires. The inspectors verified that the licensee staff identified deficiencies, openly discussed them in a self-critical manner at the drill debrief, and took appropriate corrective actions. Specific attributes evaluated were: (1) proper wearing of turnout gear and self-contained breathing apparatus; (2) proper use and layout of fire hoses; (3) employment of appropriate fire fighting techniques; (4) sufficient firefighting equipment brought to the scene; (5) effectiveness of fire brigade leader communications, command, and control; (6) search for victims and propagation of the fire into other plant areas; (7) smoke removal operations; (8) utilization of preplanned strategies; (9) adherence to the preplanned drill scenario; and (10) drill objectives.

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

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors reviewed the Updated Safety Analysis Report, the flooding analysis, and plant procedures to assess seasonal susceptibilities involving internal flooding; reviewed the Updated Safety Analysis Report and corrective action program to determine if licensee personnel identified and corrected flooding problems; inspected underground bunkers/manholes to verify the adequacy of sump pumps, level alarm circuits, cable splices subject to submergence, and drainage for bunkers/manholes; verified that operator actions for coping with flooding can reasonably achieve the desired outcomes; and walked down the two 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.

- December 23, 2008, Control Building 1974', 2000', and 2033' elevations
- December 12, 2008, Residual heat removal pump rooms

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

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

a. Inspection Scope

The licensed operator requalification program involves two training cycles that are conducted over a 2-year period. In the first cycle, the annual cycle, the operators are administered an operating test consisting of job performance measures and simulator scenarios. In the second part of the training cycle, the biennial cycle, operators are administered an operating test and a comprehensive written examination.

This inspection was held during the next to last week of the biennial licensed operator requalification examination testing cycle, which began the week of September 15, 2008, and ended the week of October 31, 2008.

.1 Biennial Inspection

a. Inspection Scope

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

The inspectors interviewed licensee personnel to determine their understanding of the policies and practices for administering requalification examinations. The inspectors also reviewed operator performance on the written exams and operating tests. These reviews included observations of portions of the operating tests by the inspectors. The operating tests observed included 15 job performance measures and 2 scenarios that were used in the current biennial requalification cycle. These observations allowed the inspectors to assess the licensee's effectiveness in conducting the operating test to ensure operator mastery of the training program content.

The results of these examinations were reviewed to determine the effectiveness of the licensee's appraisal of operator performance and to determine if feedback of performance analyses into the requalification training program was being accomplished. The inspectors interviewed members of the training department and reviewed minutes of the Training Review Group and Training Review Board meetings to assess the responsiveness of the licensed operator requalification program to incorporate the lessons learned from both plant and industry events. The inspectors also reviewed a sample of licensed operator annual medical forms and procedures governing the medical examination process for conformance to 10 CFR 55.53, and a sampling of the licensed requalification program feedback system, and the remediation process records.

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

At the conclusion of the testing cycle, the inspectors reviewed the overall pass/fail results of the individual job performance measure operating tests, simulator operating tests, and written examinations administered by the licensee during the operator licensing requalification cycles and biennial examination. Final examination results were assessed to determine if they were consistent with the guidance contained in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors,"

Revision 9, Supplement 1, and NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process." Nine separate crews participated in simulator operating tests, written examinations, and job performance measure operating tests, totaling 53 licensed operators (23 reactor operators and 30 senior reactor operators). There were three failures on the written examination and all the operators passed the operating test.

The inspectors completed one inspection sample of the biennial licensed operator requalification program.

b. Findings

No findings of significance were identified.

.2 Resident Inspector Quarterly Review (71111.11Q)

a. Inspection Scope

The inspectors observed testing and training of senior reactor operators and reactor operators to identify deficiencies and discrepancies in the training, to assess operator performance, and to assess the evaluator's critique. The training scenario involved:

- October 24, 2008, Reactor operator offsite power re-alignment job performance measures and November 7, 2008, simulator large break loss of coolant accident and containment sump alignment

Documents reviewed by the inspectors are listed in the attachment.

These activities constitute completion of one licensed operation requalification sample as defined in Inspection Procedure 71111.11-05.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

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

- Containment liner degradation under Function ZZ-01
- Residual Heat Removal Relief Valve EJ-8842 failure
- 186 lockout relay type General Electric HEA test failures

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
- Charging unavailability for performance
- 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 three quarterly maintenance effectiveness samples as defined in Inspection Procedure 71111.12-05.

b. Findings

No findings of significance 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:

- September 24, 2008, Valve ACHV186C 'Tool pouch' maintenance on limit switch linkage

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.

This activity constitutes completion of one maintenance risk assessment and emergent work control inspection sample as defined in Inspection Procedure 71111.13-05.

b. Findings

Introduction. On September 24, 2008, inspectors identified a Green noncited violation of 10 CFR 50.54(j) in which the fix it now team manipulated a limit switch that caused the reactor to exceed the licensed thermal power limit of 3565 MWt until reactor operators reduced power.

Description. On September 20, 2008, Work Request 08-070231 was written for Valve ACPV0186C and stated that its position limit switch was not coupled to the stem linkage. Valve ACPV0186C is the Moisture Separator Reheater C low load valve. The fix it now superintendent, who also holds a senior reactor operator license, designated the work as 'Tool Pouch' maintenance which requires no prior planning. During an interview, the fix it now superintendent stated that he simply did not think that Valve ACPV186C would cause any reactivity change. When the instrumentation and controls technician recoupled the limit switch to the stem linkage, position indication of Valve ACPV186C changed from open to closed. Unknown to the control room or the fix it now team, Valve ACPV186C is interlocked with Valve ACHV256D which is a dump valve from Moisture Separator Reheater C to the condenser. This interlock caused Valve ACHV256D to open and created a 2-inch opening between Moisture Separator Reheater C and the condenser which resulted in a positive reactivity addition. In the control room, operators spent 27 minutes attempting to diagnose the condition and calling various personnel before inserting control rods and injecting boron into the reactor coolant system. According to the 10-minute moving average, reactor power began to increase at 8:08 a.m. and exceeded the licensed thermal power limit of 3565 MWt at 8:16 a.m. At 8:43 a.m., boron was added to the reactor coolant system and control rods were inserted such that power decreased below 3565 MWt at 8:53 a.m. After the control room reviewed plant computer digital alarms and sent the shift technical advisor to tour the turbine building, Valve ACHV256 was identified as open. It was subsequently closed and de-energized. Wolf Creek's condition report only identified that the power level had increased above the 1-hour moving average limit and did not examine the maintenance aspects until questioned by the NRC.

Inspectors reviewed Procedure GEN 00-004, "Power Operation," Attachment A, "Operating Philosophy Regarding Licensed Thermal Power Level," Revision 59. It states, in part, that, if the 10-minute moving average continuously exceeds 3565 MWt, to take action to reduce reactor power. It also states, in part, that if the 1-hour moving average continuously exceeds 3565 MWt, a condition report shall be written to document the occurrence. During an interview, the control room supervisor stated that the reason the licensed thermal power limit was not exceeded was because the 1-hour moving average had not been exceeded. The inspectors read no logical connector in the procedure that the trend of the 10-minute and 1-hour averages were both required to

conclude the reactor was overpower. Inspectors also reviewed Procedure AP 16C-006, "MPAC Work Request/Work Order Process Controls," Revision 12, and found that step 2 would have required work planning as a Risk Level 2 because it had the potential to cause a reactivity addition. Additionally, step 6.3.4, Criterion 3, for 'Tool Pouch' maintenance was not met because the work had the potential to interrupt the flow of process fluid important to plant operation or safety. Under this process, Risk Level 4 required the least amount of planning, and Risk Level 1 requires the most work order planning because it could have a significant impact. Work designated as 'Tool Pouch' requires essentially no planning.

Analysis. The failure to adequately plan a work activity that resulted in an unexpected positive reactivity addition is a performance deficiency. Traditional enforcement does not apply since there were no actual safety consequences or potential for impacting the NRC's regulatory function, and the finding was not the result of any willful violation of NRC requirements or Wolf Creek procedures. The inspectors determined that this finding was more than minor because it is associated with the configuration control attribute for the Barrier Integrity Cornerstone; and, it affected the cornerstone objective of providing reasonable assurance that physical design barriers, such as fuel cladding, to protect the public from radio nuclide releases caused by accidents or events. Specifically, this issue relates to the reactor manipulation example of the configuration control attribute because operating the reactor above licensed power for an extended period can challenge fuel cladding integrity during events by reducing calculated margins to unacceptable fuel cladding temperatures. The inspectors evaluated the significance of this finding using Phase 1 of Inspection Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," and determined that the finding was of very low safety significance because the fuel cladding barrier was affected but the finding did not impact the reactor coolant system or containment barriers. Further, the actual increase in reactor power of less than 2 percent did not result in a challenge to design limits or other overpower protection features. As such, the assumptions contained in the safety analysis remained valid for this event. The inspectors determined that this finding has a crosscutting aspect in the area of Human Performance associated with the Decision Making component because Wolf Creek used flawed assumptions in the work planning process for Valve ACPV186C to demonstrate that the 'Tool Pouch' course of action was safe [H.1.b].

Enforcement. 10 CFR 50.54(j) requires that the apparatus and mechanisms other than controls, the operation of which may affect the reactivity or power level of a reactor, shall be manipulated only with the knowledge and consent of an operator or senior operator licensed pursuant to 10 CFR Part 55 of this chapter present at the controls. Contrary to the above, on September 24, 2008, an instrumentation and control technician manipulated the limit switch for Valve ACPV186C without the knowledge or consent of an on duty licensed control room operator or senior operator which resulted in a positive reactivity addition. This issue and the corrective actions are being tracked by the licensee in Condition Report 2008-004695. Because the violation was of very low safety significance and the issue was captured in the licensee's corrective action program, this violation is being treated as a noncited violation consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000482/2008005-01, Maintenance Causes Unplanned Increase in Reactor Power.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:

- November 24, 2008, Analysis of emergency diesel generator overfrequency and overvoltage after full load rejection
- October 3, 2008, Residual heat removal Modes 3 and 4 inoperability

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 Updated Safety Analysis Report to the licensee's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors also reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Specific documents reviewed during this inspection are listed in the attachment.

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

b. Findings

An unresolved item was identified on October 3, 2008, when Wolf Creek issued Licensee Event Report 2008-008-00 which stated that, during reviews for its response to Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems," it was discovered that both trains of residual heat removal were inoperable in Modes 3 and 4. Wolf Creek places residual heat removal in service during outages while the temperature of the reactor coolant system and the residual heat removal system could be up to 350°F. The temperature of the residual heat removal suction piping could remain sufficiently high to cause the saturation pressure to be greater than the static head from the refueling water storage tank. This may cause the residual heat removal to refueling water storage tank suction check valve to be unable to open against such a pressure differential and cause a steam void to form. This condition could exist on one or both trains of residual heat removal and prevent them from injecting to the reactor upon demand. Wolf Creek stated that residual heat removal was not operable per Technical Specifications 3.5.2 and 3.5.3. This issue is considered unresolved pending additional NRC review of Wolf Creek's root cause evaluation, fluid flow analyses, any past evaluations, compensatory measures, licensee procedures, and corrective actions: Unresolved Item 05000482/2008005-02, Residual Heat Removal Suction Piping Saturation Temperature and Pressure.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

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

- September 31, 2008, Replacement of residual heat removal pressure transmitter instrument tubing
- October 1, 2008, Centrifugal Charging Pump A after breaker maintenance
- May 7, 2008, Nondestructive evaluation of reactor cavity containment liner repairs
- November 4, 2008, Annunciator testing after un-daisy-chaining of power supplies
- November 12, 2008, Containment Spray Transmitter PT-10 installation
- November 24, 2008, Valve AB HV-49 testing after limit switch replacement

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

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

The inspectors evaluated the activities against the technical specifications, the Updated Safety Analysis Report, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with 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 six postmaintenance testing inspection samples as defined in Inspection Procedure 71111.19-05.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the Updated Safety Analysis Report, procedure requirements, and Technical Specifications to ensure that the two 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.

- November 13, 2008, Excess Letdown Valve 8153B inservice testing
- November 6, 2008, Local leak rate testing of containment purge and supply valves

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

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

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP2 Alert Notification System Testing (71114.02)

a. Inspection Scope

The inspectors discussed with licensee staff the operability of offsite siren and tone alert radio systems, and changes to the licensee's alert and notification system implemented between December 2006 and December 2008, to determine the adequacy of licensee methods for testing the alert and notification system in accordance with 10 CFR Part 50 Appendix E. The licensee's alert and notification system testing program was compared with criteria in NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, Federal Emergency Management Agency (FEMA) Report REP-10, "Guide for the Evaluation of Alert and Notification Systems for Nuclear Power Plants," and the licensee's current FEMA-approved alert and notification system design report. The specific documents reviewed during this inspection are listed in the attachment.

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

b. Findings

No findings of significance were identified.

1EP3 Emergency Response Organization Augmentation Testing (71114.03)

a. Inspection Scope

The inspectors discussed with licensee staff the operability of primary and backup systems for augmenting the onshift emergency response staff, and changes to the emergency response organization notification system implemented between December 2006 and December 2008, to determine the adequacy of the licensee's methods for staffing emergency response facilities. The inspectors evaluated the licensee's ability to staff the emergency response facilities in accordance with the licensee's emergency plan and the requirements of 10 CFR Part 50, Appendix E. The specific documents reviewed during this inspection are listed in the attachment.

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

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed the licensee's corrective action program requirements in Procedure AP 28A-100, "Condition Reports," Revision 6. The inspectors reviewed summaries of 389 corrective action program entries (condition reports) assigned to the emergency preparedness department or associated with emergency response organization performance for the period December 2006 through November 2008 and selected 23 for detailed review against the program requirements. The inspectors evaluated the response to the corrective action requests to determine the licensee's ability to identify, evaluate, and correct problems in accordance with the licensee program requirements and 10 CFR 50.47(b)(14) and 10 CFR Part 50, Appendix E. The specific documents reviewed during this inspection are listed in the attachment.

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

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

.1 Training Observations

a. Inspection Scope

The inspectors observed a simulator training evolution for licensed operators on October 2, 2008, which required emergency plan implementation by a licensee operations crew. This evolution was planned to be evaluated and included in the performance indicator data regarding drill and exercise performance. The inspectors observed event classification and notification activities performed by the crew. The inspectors also attended the postevolution critique for the scenario. The focus of the inspectors' activities was to note any weaknesses and deficiencies in the crew's performance and ensure that the licensee evaluators noted the same issues and entered them into the corrective action program. As part of the inspection, the inspectors reviewed the scenario package and other documents listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.06-05.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational and Public Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01)

a. Inspection Scope

This area was inspected to assess licensee personnel's performance in implementing physical and administrative controls for airborne radioactivity areas, radiation areas, high radiation areas, and worker adherence to these controls. The inspectors used the requirements in 10 CFR Part 20, the technical specifications, and the licensee's procedures required by technical specifications as criteria for determining compliance. During the inspection, the inspectors interviewed the radiation protection manager, radiation protection supervisors, and radiation workers. The inspectors performed independent radiation dose rate measurements and reviewed the following items:

- Performance indicator events and associated documentation packages reported by the licensee in the Occupational Radiation Safety Cornerstone
- Radiation work permits, procedures, engineering controls, and air sampler locations
- Conformity of electronic personal dosimeter alarm set points with survey indications and plant policy; workers' knowledge of required actions when their electronic personnel dosimeter noticeably malfunctions or alarms
- Adequacy of the licensee's internal dose assessment for any actual internal exposure greater than 50 millirem committed effective dose equivalent
- Self-assessments, audits, licensee event reports, and special reports related to the access control program since the last inspection
- Corrective action documents related to access controls
- Licensee actions in cases of repetitive deficiencies or significant individual deficiencies
- Radiation work permit briefings and worker instructions

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

These activities constitute completion of 8 of the required 21 samples as defined in Inspection Procedure 71121.01-05.

b. Findings

No findings of significance were identified.

2OS2 As Low As is Reasonably Achievable (ALARA) Planning and Controls (71121.02)

a. Inspection Scope

The inspectors assessed licensee personnel's performance with respect to maintaining individual and collective radiation exposures as low as is reasonably achievable. The inspectors used the requirements in 10 CFR Part 20 and the licensee's procedures required by technical specifications as criteria for determining compliance. The inspectors interviewed licensee personnel and reviewed the following:

- Current 3-year rolling average collective exposure
- Ten work activities from previous work history data which resulted in the highest personnel collective exposures
- Site-specific trends in collective exposures, plant historical data, and source-term measurements
- Site-specific ALARA procedures
- Five work activities of highest exposure significance completed during the last outage
- ALARA work activity evaluations, exposure estimates, and exposure mitigation requirements
- Intended versus actual work activity doses and the reasons for any inconsistencies
- Interfaces between operations, radiation protection, maintenance, maintenance planning, scheduling and engineering groups
- Integration of ALARA requirements into work procedure and radiation work permit documents
- Person-hour estimates provided by maintenance planning and other groups to the radiation protection group with the actual work activity time requirements
- Shielding requests and dose/benefit analyses
- Postjob (work activity) reviews
- Assumptions and basis for the current annual collective exposure estimate, the methodology for estimating work activity exposures, the intended dose outcome, and the accuracy of dose rate and man-hour estimates
- Method for adjusting exposure estimates, or re-planning work, when unexpected changes in scope or emergent work were encountered
- Exposure tracking system

- Use of engineering controls to achieve dose reductions and dose reduction benefits afforded by shielding
- Exposures of individuals from selected work groups
- Records detailing the historical trends and current status of tracked plant source terms and contingency plans for expected changes in the source term due to changes in plant fuel performance issues or changes in plant primary chemistry
- Declared pregnant workers during the current assessment period, monitoring controls, and the exposure results
- Self-assessments, audits, and special reports related to the ALARA program since the last inspection
- Resolution through the corrective action process of problems identified through postjob reviews and postoutage ALARA report critiques
- Corrective action documents related to the ALARA program and follow-up activities, such as initial problem identification, characterization, and tracking
- Effectiveness of self-assessment activities with respect to identifying and addressing repetitive deficiencies or significant individual deficiencies

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

These activities constitute completion of 14 of the required 15 samples and 9 of the optional samples as defined in Inspection Procedure 71121.02-05.

b. Findings

No findings of significance were identified.

Cornerstone: Public Radiation Exposure

4. OTHER ACTIVITIES

40A1 Performance Indicator Verification (71151)

.1 Data Submission Issue

a. Inspection Scope

The inspectors performed a review of the data submitted by the licensee for the third quarter 2008 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 of significance were identified.

.2 Safety System Functional Failures

a. Inspection Scope

The inspectors sampled licensee submittals for the safety system functional failures performance indicator data for the period from the second quarter 2007 through the third quarter 2008, interval should reflect the period from the last inspection of the performance indicator to the latest licensee submittal. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Revision 5 of the Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," and NUREG 1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73" definitions and guidance were used. The inspectors reviewed the licensee's operator narrative logs, operability assessments, maintenance rule records, maintenance work orders, issue reports, event reports and NRC integrated inspection reports for the period of June 1, 2007, to September 30, 2008, 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.

This inspection constitutes one safety system functional failures sample as defined by Inspection Procedure 71151.

b. Findings

No findings of significance were identified.

.3 Mitigating Systems Performance Index - Emergency AC Power System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index - Emergency AC Power System performance indicator data for the period from the 2nd quarter 2007 through the 3rd quarter 2008. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Revision 5 of the Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," were used. The inspectors reviewed the licensee's operator narrative logs, mitigating systems performance index derivation reports, issue reports, event reports, and NRC integrated inspection reports for the period of March 31, 2007 through September 30, 2008, to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable Nuclear Energy Institute guidance. 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.

This inspection constitutes one mitigating systems performance index - emergency AC power system sample as defined by Inspection Procedure 71151.

b. Findings

No findings of significance were identified.

.4 Mitigating Systems Performance Index - High Pressure Injection Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index - High Pressure Injection Systems performance indicator data for the period from the 2nd quarter 2007 through the 3rd quarter 2008. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Revision 5 of the Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, mitigating systems performance index derivation reports, event reports, and NRC integrated inspection reports for the period of March 31, 2007, through September 30, 2008, to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable Nuclear Energy Institute guidance. 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.

This inspection constitutes one mitigating systems performance index - high pressure injection system sample as defined by Inspection Procedure 71151.

b. Findings

No findings of significance were identified.

.5 Mitigating Systems Performance Index - Heat Removal System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index - Heat Removal System performance indicator data for the period from the 3rd quarter 2007 through the 3rd quarter 2008. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Revision 5 of the Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, mitigating systems performance index derivation reports, and NRC integrated inspection reports for the period of August 1, 2007, through September 30, 2008, to

validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable Nuclear Energy Institute guidance. 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.

This inspection constitutes one mitigating systems performance index - heat removal system sample as defined by Inspection Procedure 71151.

b. Findings

No findings of significance were identified.

.6 Mitigating Systems Performance Index - Residual Heat Removal System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index - Residual Heat Removal System performance indicator data for the period from the 3rd quarter 2007 through the 3rd quarter 2008. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Revision 5 of the Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, mitigating systems performance index derivation reports, event reports, and NRC integrated inspection reports for the period of August 1, 2007, through September 30, 2008 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable Nuclear Energy Institute guidance. 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.

This inspection constitutes one mitigating systems performance index - residual heat removal system sample as defined by Inspection Procedure 71151.

b. Findings

No findings of significance were identified.

.7 Mitigating Systems Performance Index - Cooling Water Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index - Cooling Water Systems performance indicator data for the period from the second quarter 2007 through the third quarter 2008. To determine the accuracy of the

performance indicator data reported during those periods, performance indicator definitions and guidance contained in Revision 5 of the Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, mitigating systems performance index derivation reports, event reports, and NRC integrated inspection reports for the period of June 1, 2007, to September 30, 2008, to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable Nuclear Energy Institute guidance. 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.

This inspection constitutes one mitigating systems performance index - cooling water system sample as defined by Inspection Procedure 71151.

b. Findings

No findings of significance were identified.

.8 Drill and Exercise Performance

a. Inspection Scope

The inspectors sampled licensee submittals for the Drill and Exercise Performance indicator for the period October 2007 through September 2008. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revisions 4 and 5, and licensee Procedure AI 26A-004, "Emergency Planning Performance Indicators," Revisions 2 through 4, were used. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the Nuclear Energy Institute guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator, licensee assessments of performance indicator opportunities during the 2008 biennial exercise and predesignated control room simulator training sessions, and performance during other licensee drills. The specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one drill and exercise performance sample as defined by Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

.9 Emergency Response Organization Drill Participation

a. Inspection Scope

The inspectors sampled licensee submittals for the Emergency Response Organization Drill Participation performance indicator for the period October 2007 through September 2008. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revisions 4 and 5, and licensee Procedure AI 26A-004, "Emergency Planning Performance Indicators," Revisions 2 through 4, were used. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the Nuclear Energy Institute guidance. Specifically, the inspectors reviewed licensee emergency response organization training records, six individual drill participation records, and revisions of the licensee's roster of personnel assigned to key emergency response organization positions. The specific documents reviewed are described in the attachment to this report.

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

b. Findings

No findings of significance were identified.

.10 Alert and Notification System

a. Inspection Scope

The inspectors sampled licensee submittals for the Alert and Notification System performance indicator for the period October 2007 through September 2008. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revisions 4 and 5, and licensee Procedure AI 26A-004, "Emergency Planning Performance Indicators," Revisions 2 through 4, were used. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the Nuclear Energy Institute guidance. Specifically, the inspector reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator and the results of periodic silent and limited-cycle alert notification system operability tests. The inspectors observed a siren growl test conducted December 16, 2008. The specific documents reviewed are described in the attachment to this report.

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

b. Findings

No findings of significance were identified.

.11 Occupational Radiological Occurrences

a. Inspection Scope

The inspectors sampled licensee submittals for the Occupational Radiological Occurrences performance indicator for the period from the first quarter 2008 through third quarter 2008. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors reviewed the licensee's assessment of the performance indicator for occupational radiation safety to determine if indicator related data was adequately assessed and reported. To assess the adequacy of the licensee's performance indicator data collection and analyses, the inspectors discussed with radiation protection staff, the scope and breadth of its data review, and the results of those reviews. The inspectors independently reviewed electronic dosimetry dose rate and accumulated dose alarm and dose reports and the dose assignments for any intakes that occurred during the time period reviewed to determine if there were potentially unrecognized occurrences.

These activities constitute completion of the occupational radiological occurrences sample as defined by Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

.12 Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual Radiological Effluent Occurrences

a. Inspection Scope

The inspectors sampled licensee submittals for the Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual Radiological Effluent Occurrences performance indicator for the period from the first quarter 2008 through third quarter 2008. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Nuclear Energy Institute Document 99 02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors reviewed the licensee's issue report database since this indicator was last reviewed to identify any potential occurrences such as unmonitored, uncontrolled, or improperly calculated effluent releases that may have impacted offsite dose. Additionally, the inspectors reviewed the licensee's historical 10 CFR 50.75(g) file and selectively reviewed the licensee's analysis for discharge pathways resulting from a spill, leak, or unexpected liquid discharge focusing on those incidents which occurred over the last few years.

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

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

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

.1 Annual Sample Review

a. Inspection Scope

The inspectors reviewed a list of 389 licensee condition reports associated with emergency preparedness and emergency response organization performance generated between December 2006 and November 2008 and selected 23 condition reports for detailed review. The reports were reviewed to ensure that the full extent of issues was identified, an appropriate evaluation was performed, and appropriate corrective actions were specified and prioritized. The inspectors evaluated the condition reports against the requirements of licensee Procedure AP28-A100, "Condition Reports," Revision 6. 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 of significance 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 of significance were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors focused their review on repetitive equipment issues, but also considered the results of daily corrective action item screening discussed in Section 4OA2.2, above, licensee trending efforts, and licensee human performance results. The inspectors nominally considered the 6-month period of

July 2008 through December 2008, although some examples expanded beyond those dates where the scope of the trend warranted.

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

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

b. Findings

No findings of significance were identified.

.4 Selected Issue Follow-up Inspection

a. Inspection Scope

Inspectors reviewed Wolf Creek's tracking of operator burdens and operator work arounds and reviewed plant conditions for others. Inspectors identified that the failure of excess letdown Valve 8153B to stroke at 2 minutes vice 3 seconds was not identified as an operator work around. Wolf Creek's program requires deficiencies that affects equipment used in off-normal and emergency operating procedures to be evaluated and communicated to the operator crews. The valve was declared inoperable. The inspector determined that the work around would not have substantially misguided the control room supervisor to the 'response not obtained' column of the procedures; however, it would have complicated event response due to the valve's excessive stroke time.

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

b. Findings

Introduction. Inspectors identified a noncited violation of Technical Specification 5.4.1.a, procedures, for changing the equipment out-of-service log outside of the procedure change process.

Description. On November 25, 2008, the inspectors questioned the status of excess letdown Valve 8153B because its equipment out of service log entry changed from available to unavailable. Specifically, the valve's "Unavailable" box was checked and this was a change in status. The inspectors were informed that the 'Unavailable' check box meant that the valve was inoperable. After further questioning, the shift manager stated that the valve was still considered available. This contradicted the words of the electronic log. The inspectors were informed that a check in the "Unavailable" column of the electronic database was changed to mean that equipment was "Inoperable but available." The shift manager stated that this might be outside the normal process for

procedure changes. The equipment log entry for Valve 8153B was subsequently changed back to its original state of “available” after the inspector questioned operations management. Operations management was aware of the change to the terminology. Inspectors did not identify any other clarifying information in the log regarding the availability or operability of Valve 8153B. Valve 8153B is safety related and is used to meet General Design Criterion 26.

Inspectors reviewed Procedure AP 21F-001 “Equipment Out of Service Control” which governs the equipment out-of-service log. Procedure AP 21F-001, step 5.3, requires the shift manager, control room supervisor, or shift engineer to maintain the equipment out-of-service log in accordance with the procedure. Inspectors also found that Procedure AP 21F-001, step 6.3.1, requires the shift manager, control room supervisor, or shift engineer to make the entries in the log for availability. AP 21F-001 describes and defines availability in terms of maintenance rule procedures. Procedure AP 22C-003, “Operational Risk Assessment Program,” Attachment A, defines boration and inventory controls such as Valve 8153B as risk significant. Inspectors reviewed Procedure AP 15C-004, “Preparation, Review and Approval of Procedures, Instructions and Forms,” Revision 32A, which provides for the administrative process for changing procedures, forms, and instructions. Procedure AP 15C-004 defines AP class procedures as those that, in part, implement activities that can significantly affect nuclear safety. Inspectors did not identify an on the spot change form or other formal change processes that led to the log change. Inspectors found no formal training or communication to all licensed and nonlicensed operations staff on this change in equipment status tracking. Inspectors found that verbal communications between operations staff was the only tool that implemented this change.

Analysis. The failure to implement Procedure AP 21F-001 as written for a risk significant valve was considered a performance deficiency. The finding was determined to be more than minor because it could become a more significant safety concern if Wolf Creek changes procedures outside the required process. Traditional enforcement does not apply since there were no actual safety consequences or potential for impacting the NRC’s regulatory function, and the finding was not the result of any willful violation of NRC requirements or Wolf Creek procedures. The inspectors evaluated the significance of this finding using Phase 1 of Inspection Manual Chapter 0609.04, “Phase 1 – Initial Screening and Characterization of Findings,” and determined that the finding was of very low safety significance (Green) because no systems, structures or components were inappropriately out of service for greater than 24 hours due to errors in the log. Specifically, no equipment status was lost such that it was returned to service inappropriately. Further, none of the affected equipment was risk significant for the mitigation of external events such as flooding. The inspectors determined that this finding has a crosscutting aspect in the area of Human Performance associated with the Decision Making component because Wolf Creek did not use its procedure change process to demonstrate that changing the equipment out-of-service log was a safe course of action. Although roles and authority are defined in Procedure AP 15C-004, these roles and authorities were not implemented for a safety-significant decision [H.1.a].

Enforcement. Technical Specification 5.4.1, “Procedures,” requires procedures be established, implemented, and maintained in accordance with Regulatory Guide 1.33, Appendix A, February 1978. Regulatory Guide 1.33, Appendix A, requires procedures for equipment control under Section 1.c, and procedure review and approval under

Section 1.e. Wolf Creek Procedures AP 21F-001, "Equipment Out of Service Control," Revision 15, and AP 15C-004, "Preparation, Review and Approval of Procedures, Instructions and Forms," Revision 32A, implement these sections, respectively. Procedure AP 21F-001, steps 5.3 and 6.3.1, require a senior reactor operator to maintain the log according to its availability. Procedure AP 15C-004 controls the change process for all AP class procedures. Contrary to the above, on November 25, 2008, the status of Valve 8153B was inappropriately changed by a senior reactor operator to 'Inoperable but available' without any accompanying documentation. This issue and the corrective actions are being tracked by the licensee in Condition Reports 2008-005748 and 2009-000277. Because the violation was of very low safety significance and the issue was captured in the licensee's corrective action program, this violation is being treated as a noncited violation consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000482/2008005-03, Equipment Out-of-Service Log Definitions Redefined Outside of Procedure Change Process.

40A3 Event Follow-up (71153)

.1 (Closed) Licensee Event Report 2008-007-00, Two Residual Heat Removal Trains Inoperable in Mode 3 due to Check Valve Leakage

On May 11, 2008, plant operators identified decreasing level in Safety Injection Accumulator D. The decreasing level was the result of leakage through the seat of the check valve separating the residual heat removal train from the reactor cold leg accumulator. Plant operators subsequently identified approximately 200 drops/minute leaking from the bellows of Residual Heat Removal Relief Valve EJ8842. The licensee took action to minimize the leakage by closing common residual heat removal cross connect valves from the discharge header. This action resulted in the inoperability of both residual heat removal trains, a condition prohibited by plant technical specifications.

The licensee took corrective action to repair Valve EJ8842 bellows. The licensee determined that seat leakage from Train B residual heat removal to reactor coolant system check Valve EPV8818D provided the inventory source leaking from the bellows of Valve EJ8842. The licensee took additional corrective action to seat check Valve EPV8818D and stopped the leakage from Safety Injection Accumulator D.

The licensee event report was reviewed by the inspectors and no findings of significance were identified and no violation of NRC requirements occurred. The licensee documented the failed equipment in Condition Report 2008-002230. This licensee event report is closed.

40A5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

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

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

b. Findings

No findings of significance were identified.

.2 (Closed) Unresolved Item 05000482/2007005-01, Emergency Diesel Generator B Governor Failure Effect on Supplied Equipment

a. Inspection Scope

An unresolved item was identified when Emergency Diesel Generator B failed its monthly test on December 20, 2007. Prior to the operator placing his hand on the RAISE/LOWER handswitch, the load made a step increase from 4.2 MWe to 7.2 MWe and did not respond to lower signals from the control room handswitch. The emergency diesel generator was tripped shortly thereafter.

Troubleshooting examined the digital reference units, the Electronic Engine Governor 2301A and the Woodward electromechanical governor mounted on the engine. Electrical resistance measurements across the two terminals that connect the electronic engine control unit and the electromechanical governor was expected to be 35 ohms and was found to have infinite resistance, indicating an open circuit. The cover plate of the governor was removed and one wire was found to be disconnected from its terminal. Wolf Creek sent the governor back to the vendor, Fairbanks Morse.

During interviews, Wolf Creek engineering stated that the electromechanical portion of the governor would fail and the emergency diesel generator mechanical portion of the governor would drive the emergency diesel generator to its high speed and maximum fuel setpoint. While the emergency diesel generator was synchronized to the grid, the inspectors judged it reasonable that the emergency diesel generator would not cause the grid to increase in frequency but that the emergency diesel generator would carry an amount of load equivalent to the mechanical governor setpoint. The inspectors questioned the licensee on the impact if this failure occurred during a valid safety injection signal or loss of offsite power. The inspectors found that such a frequency variation had not been previously analyzed. If the emergency diesel generator governor failed in the observed manor, the emergency diesel generator would drive the bus and the connected safety equipment to a frequency that exceeds the Technical Specification 3.8.1 limit, the currently analyzed limit, and would cause electric motor breakers to trip on thermal overloads. This governor failure was tracked by Wolf Creek in Condition Report 2008-000088.

Wolf Creek received the rebuilt governor and its repair report was approved on October 2, 2008; however, it did not identify a failure mode for the wire. Wolf Creek consulted with Fairbanks and determined that the wiring junction box on the governor can be rotated according to the direction that the flexible wiring conduit will connect. The orientation of the junction box is not referenced by the vendor as to how far it can be rotated before the internal wiring has no slack and is stressed. When installed by Wolf Creek, work instructions stated to rotate the junction box as needed to connect with the flex conduit. No record of how far the junction box was rotated during installation existed. Fairbanks and Wolf Creek determined that wiring stress was caused when the

governor was installed followed by inservice vibration as the most likely failure mode. Wolf Creek has documented this issue in Condition Report 2008-005461 for future governor replacements. This issue was not identified to Wolf Creek by the vendor prior to installation of Emergency Diesel Generator B governor. Therefore, the issue was not within Wolf Creek's ability to foresee and correct and no performance deficiency occurred. Unresolved Item 05000482/2007005-01, Emergency Diesel Generator B Governor Failure Effect on Supplied Equipment. This unresolved item is closed. Documents reviewed by the inspectors are listed in the attachment.

b. Findings

No findings of significance were identified.

40A6 Meetings

Exit Meeting Summary

On January 15 and 21, 2009, the senior resident inspector presented the results of the resident inspection activities to Mr. M. Sunseri, Vice President Operations and Plant Manager, and other members of licensee management. The licensee acknowledged the information presented.

On December 17, 2008, the inspector presented the results of the onsite inspection of the emergency preparedness program to Mr. M. Sunseri, Vice President Operations and other members of his staff, who acknowledged the findings. The inspector confirmed that proprietary, sensitive, or personal information examined during the inspection had been returned to the identified custodian.

The inspectors briefed Mr. S. Hedges, Vice President Oversight, and other members of the licensee's staff, on the results of the licensed operator requalification program inspection on October 23, 2008. The licensee acknowledged the findings presented. After review of the complete biennial requalification cycle examination results, the inspector conducted a telephonic exit with Ms. Mona Guyer, Supervisor, Operator Training on December 11, 2008. The licensee acknowledged the results as presented.

On October 10, 2008, the inspectors presented the Occupational Radiation Safety inspection results to Mr. M. Sunseri, Vice President Operations, 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.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

40A7 Licensee-Identified Violations

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

- Title 10 of the Code of Federal Regulations 50.47(b)(7) requires, in part, that information is made available to the public on a periodic basis about how they will

be notified in an emergency and about their actions during an emergency. Contrary to this, in 2008 the licensee failed to ensure that information was made available to the public on a periodic basis about how they would be notified in an emergency and about their actions during an emergency. Specifically, public information required by the licensee's emergency plan to be published in the Feist Yellow Pages and distributed in the plume phase emergency planning zone was not included. This was identified in the licensee's corrective action program as Condition Report 2008-00394. This finding is of very low safety significance because it is a failure to comply with a regulatory requirement, is associated with planning standard 10 CFR 50.47(b)(7), and is not a functional failure of the planning standard because the licensee had a process for annually providing basic emergency planning information to the public and other telephone books serving the plume phase emergency planning zone contained the required emergency planning information.

- Technical Specification 5.7.2 states, in part, that each entry way to an area with dose rates greater than 1 Rem/hr at 30 centimeters from the source shall be conspicuously posted and be provided with a locked door or guarded door or gate that prevents unauthorized entry. In addition, access to, and activities in, each area shall be controlled by means of a radiation work permit that includes specification of radiation dose rates in the immediate work area and other appropriate radiation protection equipment and measures. Contrary to the above, on August 29, 2008, the door to the low level radwaste storage area (with dose rates greater than 1 Rem/hr) was not properly guarded to prevent the unauthorized entry of a health physics supervisor. The door attendant was 10-15 feet away from the low level radwaste storage area entrance and was not close enough to prevent the unauthorized entry of the supervisor. The supervisor's radiation work permit did not allow entry into areas greater than 1 Rem/hr. The highest radiation levels within the area were approximately 2.0 Rem/hour at 1 foot from a spent filter storage cask. This event was captured in the licensee's corrective action program as Condition Report 2008-4317. The finding was determined to be of very low safety significance because it did not involve: (1) ALARA planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

R. A. Muench, President and Chief Executive Officer
M. Sunseri, Vice President Operations and Plant Manager
S. E. Hedges, Vice President Oversight
K. Scherich, Director Engineering
T. East, Manager, Emergency Planning
P. Bedgood, Superintendent, Chemistry/Radiation Protection
S. Henry, Manager, Operations
G. Pendergrass, Manager, Systems Engineering
L. Aiken, Technician, Radiation Protection
C. Clark, Technician, Radiation Protection
C. Medency, Engineer, Licensing
W. Muilenberg, Engineer, Licensing
T. Patten, Technician, Radiation Protection
A. Shipp, Supervisor Radiation Protection
K. Thrall, Supervisor, Radiation Protection

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000482/2008005-01	NCV	Maintenance Causes Unplanned Increase in Reactor Power (Section 1R13)
05000482/2008005-02	URI	Residual Heat Removal Suction Piping Saturation Temperature and Pressure (Section 1R15)
05000482/2008005-03	NCV	Equipment Out-of-Service Log Definitions Redefined Outside of Procedure Change Process (Section 4OA2)

Closed

05000482/2008007-00	LER	Two Residual Heat Removal Trains Inoperable in Mode 3 Due to Check Valve Leakage Section 4OA3)
05000482/2008005-01	NCV	Maintenance Causes Unplanned Increase in Reactor Power (Section 1R13)
05000482/2008005-03	NCV	Equipment Out-of-Service Log Definitions Redefined Outside of Procedure Change Process (Section 4OA2)
05000482/2007005-01	URI	Emergency Diesel Generator B Governor Failure Effect on Supplied Equipment (Section 4OA5)

LIST OF DOCUMENTS REVIEWED

In addition to the documents referred to in the inspection report, the following documents were selected and reviewed by the inspectors to accomplish the objectives and scope of the inspection and to support any findings:

Section 1R04: Equipment Alignment

Procedures

NUMBER	TITLE	REVISION
STN PE-036	Safety Related Room Cooler Heat Transfer Verification and Performance Trending	13
KL EM-120	Safety Injection System Lineup Checklists	24A
CKL BG-130	Chemical and Volume Control System Switch and Breaker Lineup	27
STS BG-100A	Centrifugal Charging System A Train Inservice Pump Test	31
SYS BG-201	Shifting Charging Pumps	45
AI 10-001	Fire Brigade Equipment Inventory Maintenance, and Cleaning	10
OFN BG-009	Emergency Boration	16
KL EM-120	Safety Injection System Lineup Checklists	24A
CKL BG-130	Chemical and Volume Control System Switch and Breaker Lineup	27
STS BG-100A	Centrifugal Charging System A Train Inservice Pump Test	31
STS BG-001,	Boron Injection Flow Path Verification	16B
SS BG-203B	Train B CVCS Excess Letdown Valve Inservice Valve Test	2
ALR 00-081C	Rod Bank LOLO Limit	10A
OFN NK-020	Loss of Vital 125 VDC Bus NK01, NK02, NK03, and NK04	
CKL NK-131	NK Distribution Switchboard Lineup Checklist	9
SYS NK-332	Cross Connecting NK Buses Using Maintenance Bus Tie	4
SYS NK 331	Denergizing NK Buse	13
SYS NK-131	Energizing NK Buses	18

Drawings

NUMBER	TITLE	REVISION
E-11NK01	Class IE 125V DC System	10
E-11NK02	Class IE 125V DC System	8

Work Order

NUMBER	TITLE
08-306537-000	Maintenance on Breaker NG0103

Condition Reports

2006-000101	2008-004889	2008-005959	2008-005494	2008-005747
2008-005494	2008-005748	2008-4359	2008-003633	

Miscellaneous

NUMBER	TITLE	REVISION
	Fire Brigade Equipment Inventory and Inspection	
	WCGS Fire Truck Inventory	
	SCBA Inspection	
	Fire Drill Scenario and Critique Report	
	USAR Table 9.3.10	
	USAR Change Request, Log Number 2002-024	
	USAR Change Request 00-043	
Regulatory Guide 1.97	Instrumentation for Light-Water Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident	3
	Performance Improvement Request 2004-0887	
Data Sheet SYS NK-131	Energizing NK Buses performed on October 1, 2008	18

Section 1R05: Fire Protection

Procedures

NUMBER	TITLE	REVISION
STN FP-225	Fire Barrier Inspection	5
STN-FP-201	Water Supplied Fire Protection Valve Verification	23C
CKL FP-504	Fire Protection Circ Water Screenhouse Valve Lineup	24A
AP 10-102	Control of Combustible Materials	10
AP 10-106	Fire Preplans	6
AP 10-103	Fire Protection Impairment Control	13

Drawings

NUMBER	TITLE	REVISION
Fire Preplans FPPM-007	Control building Elevation 1974'	
10466-A-1917	Architectural Finish Schedule	4
8025-M-0CFP01	Site Fire Protection Yard Piping	E

Miscellaneous

NUMBER	TITLE	REVISION
	Post fire safe shutdown manual Actions E-1F9900	4
	Fire Hazard Analysis E-1F9905	5
	Fire Protection Impairment Control Permit 2008-266	

Section 1R06: Flood Protection Measures (71111.06)

Miscellaneous

NUMBER	TITLE	REVISION/DATE
Work Order 08-302340	Troubleshoot and Repair Residual Heat Removal Sump Pump	April 11, 2008
Calculation FL-02	Flooding of Auxiliary Building Rooms 1107 and 114	0

Active Equipment Log PLFO1C	Residual Heat Removal Sump Pump "C" Will Not Pump Down the Sump	
M-12KD02	Piping & Instrumentation Diagram Domestic Water System	22
Condition Report 2008-005649		

Section 1R11: Licensed Operator Requalification Program

Procedures

NUMBER	TITLE	REVISION
AP 30B-001	Licensed Operator Requalification Training Program	
AP 30B-005	Conduct of Simulator Activities for Licensed Operator Training	
AP 30A-002	Management Oversight of Accredited Training Programs	
OTP 809	Operator Requalification Exam Administration	15
APF 30B-001-01	Licensed Operator Active Status Restoration	

Miscellaneous

All Scenarios Used during the 2008 Biennial Requalification Exams
 All Job Performance Measures Used During the 2008 Biennial Requalification Exams
 Simulator Discrepancy Report
 Licensed Operator Proficiency Status Report
 Six Randomly Selected Licensed Operator Medical Records
 Thirty Licensed Operator Human Performance Related Condition Reports
 Licensed Operator Training Review Group Meeting Minutes for the Last 2 Years

Section 1R12: Maintenance Effectiveness

Performance Improvement Requests

NUMBER	TITLE	REVISION
PIR 200800331	Low Pilot Cell Voltage on Battery NK13	July 10, 2008
PIR 2007000988	Breaker NG00303 Opened Unexpectedly	April 19, 2007
PIR 2008002230	Leakage from Residual Heat Removal Relief Valve EJ8842	May 11, 2008
PIR 2007000988	Breaker NG00303 Opened Unexpectedly	

Condition Reports

NUMBER	TITLE	REVISION
2007-000988	Unplanned Entry into Technical Specifications 3.8.4 and 8.9 Loss of NK23	March 11, 2007
2008-003589	NRC Questioned Operability of NK13 During Single Cell Charging	July 24, 2008
2008-003331	Unanticipated Entry into Technical Specification 3.8.6 Condition A	July 10, 2008
2008-005052	Found NK Type 2S Cell in a Discharged Condition	October 14, 2008
2006-000267	Unplanned entry into Technical Specification 3.8.4 Due to the Failure of NK21,	April 30, 2006

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

NUMBER	TITLE	REVISION
GEN 00-004	Power Operation	59
AP 16C-006	MPAC Work Request/Work Order Process Controls	12

Condition Report

2008-004695

Work Orders

08-310500-000 08-310500-001

Work Request

08-070231

Miscellaneous

Main Steam to MSR C Drain Valve-Turbine Building Elevation 2033
MSR C Main Steam Supply Low Load Valve (GE#2-RSLLV-4) Turbine Building Elevation 2065
NRC Regulatory Issue Summary 2007-21 Adherence to Licensed Power Limits
Operational Risk Assessment, Schedule week 8313
Work Week Critique for Week of 8313

Section 1R15: Operability Evaluations

Calculations

NUMBER	TITLE	REVISION
10466-M-162C-0003-001	Calc. For Insul. Thermal Analysis Technical Metals Inc.	July 1983

Drawings

NUMBER	TITLE	REVISION
E-11005	List of Loads Supplied by Emergency Diesel Generator	32
E-11005	List of Loads Supplied by Emergency Diesel Generator	32M
M-12EJ01	Piping and Instrumentation Diagram Residual Heat Removal	36
M-13BN01	Piping Isometric Borated Refueling Water Stg Sys Auxiliary Building	1

Procedures

NUMBER	TITLE	REVISION
GEN 00-002	Cold Shutdown to Hot Standby	68

Condition Reports

2008-005166	2008-004997	2008-00989	2008-003810
2008-002196	2005-2682		

Miscellaneous

NUMBER	TITLE	REVISION
	Insulation Specification M-162C(Q)	4
	WCOP-24, Operations EMG/OFN Setpoints	
	Essential Reading No. 08-0087	
M-018-01502	Engineering Report Wolf Creek NPP 6201kW Diesel Generator Set	

Section 1R19: Postmaintenance Testing

Procedures

NUMBER	TITLE	REVISION
STS AB-201B	TDAFP Steam Isolation Inservice Valve Test	7
STS A-201D	Atmospheric Relief Valve inservice Valve Test	21
AP 29B-003	Surveillance Testing	9
AP 16E-002,	Post Maintenance Testing Development	6A
AP 28-007	Nonconformance Control	4
STS EJ-100A	RHR System Inservice Pump A Test	36
AP-29-007	Spray Pump Cooler Detector (Rework)	4

Work Orders

06-286944-221	08-305702-007	08-306677-001	08-306677-002	08-310208-000
08-310206-000	08-312602-000	08-312602-001	08-302029-026	08-302029-029

Condition Reports

2008-005687 2007-000362	2008-0059858,	2008-004807	2008-000777,	2008-002504,
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Miscellaneous

NUMBER	TITLE	REVISION
GEN 00-004	Power Operation	59
GEN 00-004	Power Operation	59
Change Package 012876	Engineering Disposition, Main steam atmospheric Relief Valve Aux (Pilot) Plug and Main Plug Machining Dimensions	0
Drawing J- 601B00003	Control valve 8" X 6" 40,000 Series ANSI class 1500 Butt Weld Ends No. 18 Reverse Actuator,"	20
ELE-003	Namco Limit Switch Replacement without Conax Assembly	000
Drawing J-14EJ03	Instrument Isometric Drawing RHR Pump 1A Discharge	1

Drawing J-108-00357-W01 Annunciator Logic & Field Power Supply Monitoring Circuits

Operational Risk Assessment Schedule Week 2008-006

Section 1R22: Surveillance Testing

Procedures

NUMBER	TITLE	REVISION
STS BG-203B	Train B CVCS Excess Letdown Valve Inservice Test	2

Miscellaneous

SNUPPS PSAR, Section 5.4.A.3, February 1981

Drawings

NUMBER	TITLE	REVISION
M-12BG05	Piping and Instrumentation Diagram Chemical and Volume Control System	13

Condition Reports

2008-5959 2008-5494 2008-5747

Section 1EP2: Alert Notification system Training

Procedures

NUMBER	TITLE	REVISION
EPF 06-019	Alert and Notification System Sirens	4
EPF 06-019-01	ANS Siren Annual Maintenance	4
EPF 06-019-02	ANS Siren Test Report	2
EPF 06-019-03	ANS Siren Battery Maintenance	1

Section 1EP3: Emergency Response Organization Augmentation Testing

Evaluation Reports

TITLE	REVISION/DATE
First Quarter Callout Test 2007	March 14, 2007
Second Quarter Callout Test 2007	June 6, 2007
Third Quarter Callout Test 2007	September 6, 2007
Fourth Quarter Callout Test 2007	November 27, 2007
First Quarter Callout Test 2007	March 14, 2007
Second Quarter Callout Test 2007	June 6, 2007
First Quarter Callout Test 2008	February 25, 2008
Second Quarter Callout Test 2008	June 9, 2008
Third Quarter Callout Test 2008	September 9, 2008
Fourth Quarter Callout Test 2008	November 18, 2008

Section 1EP5: Correction of Emergency Preparedness Weaknesses and Deficiencies

Procedures

NUMBER	TITLE	REVISION
AP 28A-100	Condition Reports	6
AI 28A-006	Apparent Cause Evaluation	4
Event Evaluation	Notification of Unusual Event	April 7, 2008
Quality Assurance Audit Report	Assessment 70, Emergency Preparedness	December 14, 2007
Quality Assurance Audit Report	Assessment 08-07-EP, Emergency Preparedness	August 12, 2008
AP 28A-100	Condition Reports	6

Quality Assurance Observation Detail Report

TITLE	REVISION
Assess Activities to return Technical Support Center Diesel Generator to Service	December 20, 2006
Department of Homeland Security Comprehensive Review preparations by Emergency Planning	
ERO Tabletop	Series I
Assess Activities to return Technical Support Center Diesel Generator to Service	December 20, 2006
Notification of Unusual Event	
Emergency Plan Site Evacuation Drill	September 18, 2008
Site Medical Drill	September 30, 2008
Hostile Action Drill	November 12, 2008

Quick Hit Assessment Reports

NUMBER	TITLE	REVISION
763	Emergency Preparedness	First Quarter 2007
855	Siren Outage	May 31, 2007
878	Effect of Partnering on ERO Membership	July 25, 2007
881	Use of OE in ERO Training	July 27, 2007
884	DEP Tabletop with Operations Crews	September 27, 2007
885	Training for the New Plant Computer	September 27, 2007
886	Logkeeping Training for the ERO	July 27, 2007
887	Benchmarking for Dispatching Nuclear Station Operators	July 27, 2007
878	Effect of Partnering on ERO Membership	July 25, 2007
881	Use of OE in ERO Training	July 27, 2007
884	DEP Tabletop with Operations Crews	September 27, 2007
881	Use of OE in ERO Training	July 27, 2007

957	OE Utilized in Controller Training	September 8, 2007
962	OE Benchmarking for Controller Training	September 11, 2007
1130	Benchmarking Internet Access Outside the LAN	February 22, 2008
1169	Trip to Observe Hostile Action Drill	April 22, 2008
1193	Trip to Observe Hostile Action Drill	May 9, 2008

Drill Evaluation Reports

	TITLE	REVISION/DATE
2007 Exercise		November 6, 2007
Pre 1-07		September 20, 2007
Pre 2-07		October 4, 2007
Pre 2-07		October 18, 2007
07-SA-01		February 8, 2007
07-SA-01		February 22, 2007
07-SA-02		August 23, 2007
07-SA-02		August 30, 2007
08-SA-01		January 31, 2008
08-SA-01		February 29, 2008
08-SA-02		September 18, 2008
08-SA-02		October 2, 2008
2007 Site Medical Drill		June 21, 2007
2008 Site Medical Drill		September 30, 2008

Self Assessment

NUMBER	TITLE	REVISION/DATE
109	EP Program Industry Practice Improvement Evaluation	June 23, 2008

Condition Reports

2007-000547	2007-001722	2007-002154	2007-002238	2007-002260
2007-002347	2007-003433	2007-003439	2007-003492	2007-003549
2007-003594	2007-003875	2007-04365	2008-000304	2008-000691
2008-002788	2008-003824	2008-004234	2008-004493	2008-004509
2008-004859	2008-004868	2008-004891	2008-005504	

Miscellaneous

Wolf Creek Nuclear Generating Station Emergency Plan

Section 1EP6: Drill Evaluation

Procedures

NUMBER	TITLE	REVISION
AP 06-002-01	Emergency Action Levels	11

Miscellaneous

Exercise-07 Report dated November 6, 2007
08-SA-01 Drill/Exercise Report dated February 29, 2008
08-SA-02 Drill

Section 2OS1: Access Controls to Radiologically Significant Areas

ALARA REVIEW PACKAGES

08-0036 08-0070

CONDITION REPORTS

2007-3381	2008-0104	2008-0980	2008-1024	2008-1687
2008-1831	2008-2089	2008-2130	2008-2495	2008-2720
2008-2816	2008-2897	2008-4317		

Procedures

NUMBER	TITLE	REVISION
AP 25A-001	Radiation Protection Manual	13
AP 25A-100	Containment Entry	14A
AP 25A-200	Access To Locked High or Very High Radiation Areas	15
AP 25A-700	Use of Temporary Lead Shielding or Locked High Radiation Areas and Very High Radiation Area Barricades	9
AP 25B-100	Radiation Worker Guidelines	28B
AP 28A-100	Condition Reports	6
RPP 01-105	Health Physics Organization, Responsibilities, and Code of Conduct	11
RPP 02-105	RWP	28
RPP 02-210	Radiation Survey Methods	29

RPP 02-215	Posting of Radiological Controlled Areas	23
RPP 02-305	Personnel Surveys / Decontamination	17
RPP 02-405	RCA Access Control	14
RPP 03-122	Skin Dose Calculations	9

RADIATION WORK PERMITS

08-0036 08-0070

MISCELLANEOUS

Selected Individual Workers' Exposure Results
Selected Radiological Surveys

Section 20S2: ALARA Planning and Controls

Condition Reports

2007-0997 2008-2089 2008-2720 2008-0883 2008-2448
2008-2830

Procedures

NUMBER	TITLE	REVISION
AP 25A-001	Radiation Protection Manual	13
AP 25A-700	Use of Temporary Lead Shielding or Locked High Radiation Areas and Very High Radiation Area Barricades	9
AP 25B-100	Radiation Worker Guidelines	28B
AP 25B-300	RWP Program	16
RPP 02-105	RWP	28
RPP 03-406	HP Dosimetry / Records	1

ALARA REVIEW PACKAGES AND RADIATION WORK PERMITS

08-0070 08-0036 08-1000 08-1001 08-1101
08-2000 08-2210 08-2220 08-2300 08-3200
08-3220 08-3230 08-4200 08-4420 08-4461
08-4462 08-6020 08-6031 08-7001

MISCELLANEOUS

ALARA Report: Refuel 15 and 16
Four Individual Workers' Internal Dose Assessment Records
Selected Radiological Surveys
Three Individual Workers' Declared Pregnant Worker Records
Temporary Shielding Packages: 06-180, 08-007, 08-019, 08-045, 08-101
Wolf Creek ALARA Long Range Exposure/Source Term Reduction Plan 2007-2011

Section 4OA1: Performance Indicator Verification (71151)

Procedure

NUMBER	TITLE	REVISION
AP 26A-007	NRC Performance Indicators	5

CONDITION REPORTS

2008-0980 2008-1349 2008-4317

MISCELLANEOUS

Four Individual Workers' Internal Dose Assessment Records
Selected Radiological Surveys
Control Room Logs
MSPI Tracking Database
MSPI Basis Document

Section 4OA2: Problem Identification and Resolution

Condition Reports

2008-005747 2008-005748, 2008-005959 2008-005449,

Work Order

08-311579-001

Procedures

NUMBER	TITLE	REVISION
AI 22A-001	Operator Work Arounuds/Burdens/Control Room Deficiencies	5
AP 22C-003	Operational Risk Assessment Program	13

Miscellaneous

Operator Burdens

07-OB101 08-OB115	07-OB103	08-OB104	08-OB106	08-OB111
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Control Room Deficiencies

07-CRD100 08-CRD101	07-CRD102	07-CRD105	07-CRD106	08-CRD100
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Section 4OA3: Event Followup

Condition Report

2008-002230

Drawings

NUMBER	TITLE	REVISION
Essential Drawing	Piping and Instrumentation Diagram M-12EP-01 Accumulator Safety Injection	8
Essential Drawing	Piping and Instrumentation Diagram M-12EJ-01 Residual Heat Removal System	42

Section 4OA5: Other Activities

Miscellaneous

TITLE	REVISION/DATE
Fairbanks Morse Engine Certificate of Conformance	October 2008
Woodward Governor, General Test Record for EGB Reverse Acting Governor	AN7
Woodward Governor, Repair Report	July 15, 2008

Condition Report

2008-005461