UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005

July 28, 2005

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 05000482/2005003

Dear Mr. Muench:

On June 26, 2005, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Wolf Creek Generating Station. The enclosed integrated report documents the inspection findings which were discussed on July 6, 2005, with Mr. Steve Hedges and 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.

Based on the results of this inspection, one finding of very low significance (Green) was identified. However, because of the very low safety significance and because it was entered into your corrective action program, the NRC is treating this finding as a noncited violation consistent with Section VI.A of the NRC Enforcement Policy. If you contest this noncited violation, you should provide a response within 30 days of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator Region IV; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the 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).

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

/RA/

William B. Jones, Chief
Project Branch B
Division of Reactor Projects

Docket: 50-482
License: NPF-42

Enclosure:
NRC Inspection Report 05000482/2005003
w/attachment: Supplemental Information

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RIV:SRI:DRP/B	RI:DRP/B	PE:DRP/B		
FLBrush:sa	TBRhoades	CRStancil		
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7/5/05	7/5/05	7/27/05		

C:DRS/EB1	C:DRS/OB	C:DRS/EB2	C:DRS/PSB	C:DRP/B
JAClark	ATGody	LJSmith	MPShannon	WBJones
/RA/	***RELantz for***	***GDReplogle for***	***/RA/***	***/RA/***
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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	50-482
License:	NPF-42
Report:	05000482/2005003
Licensee:	Wolf Creek Nuclear Operating Corporation
	Wolf Creek Generating Station
Location:	1550 Oxen Lane NE Burlington, Kansas
Dates:	April 8 through June 26, 2005
Inspectors:	F. L. Brush, Senior Resident Inspector T. B. Rhoades, Resident Inspector C. R. Stancil, Project Engineer D. R. Carter, Health Physicist W. M. McNeill, P.E., Reactor Inspector
Approved By:	W. B. Jones, Chief, Project Branch B

Enclosure

SUMMARY OF FINDINGS

IR 05000482/2005003; on 4/8/05 - 6/26/05; Wolf Creek Generating Station; Access Control to Radiological Significant Areas

The report covers a 12-week period of resident inspection and announced inspections by three Region IV inspectors. The inspection identified one finding. The significance of most issues is indicated by their color (Green, White, Yellow, or Red) using IMC 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 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Occupational Radiation Safety

Green: The inspectors identified a noncited violation of 10 CFR 20.1501(a) for failure to perform a survey to identify a radiation area. Specifically, on April 14, 2005, the inspectors identified by direct survey an unposted radiation area directly above the resin loading flange of recycle evaporator feed Demineralizer A on the 2051-foot elevation of the radioactive waste building. The licensee performed a confirmatory survey that indicated a contact dose rate of 20 millirem per hour and 10 millirem per hour at 30 centimeters.

The finding is greater than minor because it was associated with a cornerstone attribute (human performance) and affected the associated cornerstone objective because the failure to perform an adequate radiation survey effects the adequate protection of worker health and safety from exposure to radiation. Using the occupational radiation safety significance determination process, the inspectors determined that the finding was of very low safety significance because it did not involve: (1) as low as reasonably achievable planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. This finding also had a crosscutting aspect associated with human performance because radiation protection personnel directly contributed to the finding by not performing an adequate survey. The finding was placed in the licensee's corrective action program as Performance Improvement Request 2005-1046 (Section 2OS1).

B. Licensee-Identified Violations

None

REPORT DETAILS

Summary of Plant Status

The plant operated at essentially 100 percent power until April 9, 2005, when the Wolf Creek Generating Station main generator output breakers were opened to begin Refueling Outage 14. Subsequently, at 7:23 a.m. on May 19, 2005, the generator was placed online to end the outage. The plant reached full power on May 20, 2005.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

Partial System Walkdowns: The inspectors performed the following two partial walkdowns:

- Turbine-driven auxiliary feedwater train during Emergency Diesel Generator A and essential service water Train A outages, June 8, 2005
- Vital 125 Vdc switchboards during troubleshooting of Battery Charger NK24, June 1, 2005

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Fire Area Walkdowns

a. Inspection Scope

The inspectors toured the following six areas to assess the licensee's control of combustibles, the material condition and lineup of fire detection and suppression systems, and the material condition of manual fire equipment and passive fire barriers. The licensee's fire preplans and fire hazards analysis report were used to identify important plant equipment, fire loading, detection and suppression equipment locations, and planned actions to respond to a fire in each of the plant areas selected. Compensatory measures for degraded equipment were evaluated for effectiveness.

- Auxiliary feedwater system corridor, June 16, 2005
- Auxiliary feedwater system pipe chase, June 16, 2005
- Emergency Diesel Generator A room, April 28, 2005
- Containment building, April 19, 2005

- Containment spray Pump A room, June 17, 2005
- Control building, elevation 2016 feet, June 1, 2005

b. Findings

No findings of significance were identified.

1R08 Inservice Inspection Activities (71111.08)

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

a. Inspection Scope

The inspection procedure requires review of two or three types of nondestructive examination activities and one to three welds performed on the reactor coolant pressure boundary.

The inspectors observed six nondestructive examination activities including volumetric, surface, and visual examinations as follows:

System	Component/Weld Identification	Examination Method
EB	EBB01A-16-W/Main Steam Nozzle	Magnetic particle
TB	TBB03-SKIRT-W/Pressurizer Support Skirt	Liquid penetrant
BB	Steam Generator Drain Line Weld WM 7005*	Florescent penetrant
BB	BB-02-F019/3"Pipe to Valve	Ultrasonic
BB	RV-302-121-C	Remote ultrasonic
BG	BG 25R504231 Snubber	Visual (VT-3)

*Examination done because of leakage, not an inservice program requirement.

During the observation of each examination, the inspector verified that activities were performed in accordance with American Society of Mechanical Engineers (ASME) boiler and pressure vessel code requirements and applicable procedures. The inspectors verified that the licensee compared the indications revealed by the examinations against

the previous outage examination reports. No defects or reportable flaws were detected during the inservice examinations. The inspectors verified that the licensee used calibrated and qualified instruments and personnel.

The inspectors found the licensee performed welding under Section III of the ASME code for Class 1 and 2 items on two components during this inspection. The inspectors reviewed Work Order 03-253642-005 on the replacement of Valve BGFV0002 and its butt weld fitting. The inspectors reviewed the radiographic film of the replacement weld. The inspectors verified that the welding activities met ASME code requirements.

b. Findings

No findings of significance were identified.

.2 Pressurized Water Reactor Vessel Upper Head Penetration Inspection Activities

a. Inspection scope

The inspection procedure requires observation or review of upper head inspections after the completion of Temporary Instruction 2515/150. The procedure requires samples similar in number to the preceding section.

The licensee, a low susceptibility plant, did not perform upper head inspections during this outage.

b. Findings

No findings of significance were identified.

.3 Boric Acid Corrosion Control Inspection Activities

a. Inspection scope

The procedure requires observation or review of boric acid corrosion control activities. Specifically, the procedure requires review of one to three engineering evaluations performed for boric acid residue found on reactor coolant system piping and components. This procedure also required review of one to three corrective actions taken because of evidence of boric acid leaks.

The inspectors reviewed records of a visual examination of the reactor coolant system pressure boundary integrity walkdown performed as a surveillance test. The licensee's inspectors identified 18 areas with light boric acid residue and 7 areas of medium or heavy residue. The inspectors reviewed the work orders written to clean these areas. The licensee performed one evaluation and the inspectors reviewed that evaluation. There were no corrective actions taken as part of the boric acid corrosion control program.

b. Findings

No findings of significance were identified.

.4 Steam Generator Tube Inspection Activities

a. Inspection scope.

The inspectors reviewed the leakage history for the steam generators and found that the licensee had no leakage during operations before the shutdown. The licensee and its contractors used properly qualified eddy-current probes and equipment for the expected types of tube degradation. The inspectors observed the collection, analysis, and resolution of nine calibration groups of eddy-current data performed by contractor personnel to evaluate tubes and possible loose parts in the steam generators. The inspectors found the licensee reviewed the areas of potential degradation based on site-specific and industry experience. The inspectors verified that the licensee compared flaws detected during the current outage against the previous outages' data. The inspectors reviewed the repair criteria used. The inspectors also verified the licensee's eddy-current examination scope and expansion criteria met the Technical Specifications, industry guidelines, and commitments to the NRC.

At the time of this inspection, the inspectors found the licensee had not established the full scope of plugging and whether any in-situ pressure testing was to be performed. The inspectors verified that the predictions of tube plugging appeared to be the same as experienced in the past. Plugging had not begun at the time of this inspection.

b. Findings.

No findings of significance were identified.

.5 Identification and Resolution of Problems

a. Inspection scope.

The inspection procedure requires review of a sample of problems associated with inservice inspections and steam generator inspections documented by the licensee in the corrective action program for appropriateness of the corrective actions.

The inspectors reviewed 7 of the 21 Performance Improvement Requests (PIRs) written since the last outage which dealt with inservice inspection and steam generator eddy-current inspection activities and found the corrective actions were appropriate. From this review, the inspectors concluded that the licensee had an appropriate threshold for entering issues into the corrective action program and had procedures that direct root cause evaluations when necessary. The licensee also had an effective program for applying industry operating experience.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

a. Inspection Scope

DATE ??????????? The inspectors observed control room operator simulator training to verify that the licensed operator requalification program ensures safe operation of the plant by adequately evaluating how well the operators and crews have mastered the training objectives. The inspectors observed crew performance to evaluate operator communications, procedure usage, operator actions, and the oversight and direction provided by the operating crew senior reactor operators. The scenario observed was Simulator Guide LR 5001007, “Main Steamline Break and High Containment Pressure,” Revision 10.

The inspectors also reviewed the scenario sequences and objectives and attended the crew critique.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed the licensee’s maintenance rule implementation for the following two systems to assess the effectiveness of maintenance efforts in accordance with 10 CFR 50.65.

- Lower medium voltage system - 4.16KV (Class 1E power system) (NB)
- Reactor coolant system leak detection - reactor building radiation monitoring (SP) and floor and equipment drain (LF) systems

The inspectors reviewed work practices, scoping in accordance with 10 CFR 50.65(b), performance, 10 CFR 50.65(a)(1) or (a)(2) classification and reclassification goals, and identification of common cause failures. The inspectors reviewed various documentation and discussed maintenance rule items with licensee personnel.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed three of the licensee's risk assessments for equipment outages as a result of planned and emergent maintenance in accordance with the requirements of 10 CFR 50.65(a)(4) and licensee Procedure AP 22C-003, "Operational Risk Assessment Program," Revision 10. The inspectors also discussed the planned and emergent work activities with planning and maintenance personnel. The inspectors reviewed the following:

- Operational risk assessments for planned maintenance for the weeks of April 25, May 16, and June 6
- Actual, planned, and emergent work schedules for the same weeks

b. Findings

No findings of significance were identified.

1R14 Operator Performance During Nonroutine Evolutions and Events (71111.14)

a. Inspection Scope

- On May 7, 2005, the inspectors observed the licensee's performance during the vacuum fill and vent of the reactor coolant system in accordance with Procedure Gen 00-008, "Reduced Inventory Operations," Revision 15A. The water level was drained to midloop to ensure the steam generator tubes were empty. The inspectors verified that residual heat removal system alignment and flow rates were in accordance with procedure requirements. The inspectors also verified that the reactor water level instruments, narrow-range, wide-range, and tygon tube, were within procedure allowed deviations.
- On May 18, 2005, the inspectors observed the licensee's performance during low power physics testing and power ascension from hot standby to minimum load. These evolutions were performed in accordance with Procedure RXE 01-002, "Reload Low Power Physics Testing," Revision 20, and GEN 00-003, "Hot Standby to Minimum Load," Revision 66.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors selected five operability determinations conducted by the licensee during the report period involving risk-significant systems or components to review. The inspectors evaluated the technical adequacy of the licensee's operability determinations, verified that appropriate compensatory measures were implemented, and verified that the licensee considered all other pre-existing conditions, as applicable. Additionally, the inspectors evaluated the adequacy of the licensee's problem identification and resolution program as it applied to operability evaluations. Specific operability evaluations reviewed are listed below.

The components or systems were:

- Auxiliary feedwater Pump A, April 11, 2005
- Emergency diesel generator governors, April 28, 2005
- Essential service water piping to the auxiliary feedwater system, May 10, 2005
- Main steam supply to the turbine-driven auxiliary feedwater pump (ABHV0005) with less than full stroke, April 27, 2005
- Turbine-driven auxiliary feedwater pump discharge valve (ALHV0008), May 3, 2005

The inspectors also reviewed applicable portions of the Updated Safety Analysis Report, Technical Specifications, Technical Specification Bases, and system drawings and discussed the operability evaluations with licensee personnel.

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (71111.16)

a. Inspection Scope

On June 6, 2005, the inspectors reviewed and observed an emergent operator workaround to determine the effect of the workaround on system reliability, availability, and potential for misoperation. On June 5, steam generator feedwater Regulating Valve B operated erratically for a brief time. The Steam Generator B level deviation annunciator alarmed.

The control room operators took manual control of the feedwater regulating valve and stabilized steam generator level appropriately. The licensee left the valve in manual, using an additional control room operator during troubleshooting. The licensee determined that the valve operating characteristics indicated that the packing could be too tight. This caused the valve operator to exert extra force to reposition the valve during normal operation and, thus, move erratically. The licensee returned the valve to automatic control when it operated normally in the manual mode for an extended period of time. There have not been any additional problems with valve operation.

The inspectors reviewed the following procedures:

- ALR 00-109B, "SG B Lev Dev," Revision 5
- OFN SB-008, "Instrument Malfunction," Revision 19, Attachment F

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17)

a. Inspection Scope

On April 26, 2005, the inspectors completed a review of the Emergency Diesel Generator A governor replacement. The following documents were reviewed:

- Engineering Dispositions, "Governor Replacement on Emergency Diesel Generators," Change Package 09488, Revisions 0 - 6
- Applicability Determinations, "Governor Replacement on Emergency Diesel Generators," Change Package 09488, Revisions 0 - 6
- 50.59 Screens, "Governor Replacement on Emergency Diesel Generators," Change Package 09488, Revisions 0 and 6
- Work Orders 03-256159-006, 03-256159-008, and 03-256-159-026

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed or observed four postmaintenance tests on the following equipment or systems to verify that procedures and test activities are adequate to verify system operability:

- Emergency Diesel Generator A, May 11, 2005
- Emergency Diesel Generator B, week ending April 16, 2005
- Essential service water System A, June 8, 2005
- Turbine-driven auxiliary feedwater system, May 17, 2005

In each case, the associated work orders and test procedures were reviewed to determine the scope of the maintenance activity and determine if the test adequately tested components affected by the maintenance.

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities (71111.20)

a. Inspection Scope

From April 8 through May 19, 2005, the inspectors observed and reviewed the following Refueling Outage 14 activities in accordance with Inspection Attachment 71111.20.

Monitoring of Shutdown Activities

The inspectors observed portions of the downpower in preparation for entering the refueling outage and observed and reviewed the plant cool down to Mode 4. The inspectors performed a containment building walkdown as soon as it was available for entry and identified two very small boric acid leaks. One leak was on a steam generator bowl drain 3/4-inch pipe cap. The other was on an instrument transmitter.

Clearance Activities

The inspectors verified that various clearance order tags were properly hung and that associated equipment was appropriately configured. The inspectors also verified that appropriate foreign material controls were established. The inspectors specifically performed a complete review of the Emergency Diesel Generator B clearance order and partial review of the Emergency Diesel Generator A clearance order.

Reactor Coolant System Instrumentation

The inspectors walked down the tygon tube used for reactor coolant system water level indication during reduced inventory operations. The inspectors checked for tube loop seals or other issues that could affect indication accuracy. The inspectors also observed the various draindown activities and verified that the reactor coolant system wide range, narrow range, and tygon tube level indications were within the specified tolerances and tracked the changing water levels.

Electrical Power

The inspectors reviewed the following specific occurrences in addition to frequent overview inspections of the electrical power system status:

- The licensee's assessment of risk regarding electrical power availability with only one emergency diesel generator available, one source of offsite power to the vital busses, switchyard activity in progress, and an inclement weather forecast.

- The electrical bus lineup prior to licensee moving fuel.

- The electrical bus lineup prior to predicted severe weather.

Decay Heat Removal System Monitoring

The inspectors reviewed the system lineup and parameters for residual heat removal shutdown cooling. The inspectors also reviewed the status of the residual heat removal support systems, including component cooling water and electrical power. The inspectors verified that the licensee had confirmed the viability of using the steam generators for single phase natural circulation.

Spent Fuel Pool Cooling System Operation

The inspectors verified that the spent fuel pool cooling system was properly aligned and that outage work did not adversely impact the abilities of the operators to monitor and operate the system.

Inventory Control

The inspectors verified that the outage risk plan identified that the reactor coolant system inventory makeup and alternate flow paths were defined. The inspectors also verified, during draindown and reduced inventory operations, that adequate controls were in place to preclude unexpected inventory loss.

Reactivity Control

The inspectors attended shift reactivity briefs on various days throughout the outage and reviewed boration level requirements for various modes. The inspectors verified that activities which could cause reactivity changes were identified and controlled.

Containment Closure

The inspectors discussed containment closure preparations and procedures with licensee personnel due to approaching inclement weather (high winds and tornado watch). The inspectors also reviewed containment closure capabilities at various times during the outage.

Reduced Inventory and Midloop Conditions

The inspectors reviewed the licensee's commitments from Generic Letter 88-17 and confirmed that they are still in place. The inspectors also verified, during reduced inventory and midloop operations, that the plant systems were in the required configuration. The inspectors observed the draindown and midloop operations and confirmed that there were no negative impacts to control room operations as a result of distractions.

Refueling Activities

The inspectors observed refueling operations. The refueling activities were performed in accordance with Technical Specifications and licensee procedures. In addition to observing portions of both defueling and refueling, the inspectors reviewed a video record of the reload to verify that the planned core loading pattern had been achieved.

Monitoring of Heatup and Startup Activities

The inspectors observed plant heatup and startup activities and reviewed associated documentation. The licensee conducted these activities in accordance with plant Technical Specifications and procedures. The inspector verified appropriate equipment was available, containment integrity was established, and reactor coolant system boundary leakage requirements were met for applicable mode changes.

The steam generators' bowl drain code repair and auxiliary feedwater documentation were reviewed for completeness to support startup. In addition, the inspectors reviewed the following:

- Mode restraint and mode change checklists
- Action statement and shift logs
- Clearance orders
- Equipment out-of-service logs
- Temporary modifications

- Fire protection breaches
- Locked valve controls

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed or observed all or part of the three surveillance activities in accordance with inspection Attachment 71111.22 to verify that risk significant structures, systems, and components are capable of performing their intended safety functions and assessing their operational readiness:

- STS IC-644A, “Slave Relay Test K644 Train A Containment Spray,” Revision 10
- STS KJ-005A, “Manual/Auto Start, Synchronization and Loading of Emergency D/G NE01,” Revision 45
- RXE 01-002, “Reload Low Power Physics Testing,” Revision 20

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

On May 11, 2005, the inspectors completed a review of modifications to temporary procedures implemented for testing of the Emergency Diesel Generator A governor. The testing was conducted as part of the emergency diesel generator governor modification. The review consisted of the on-the-spot temporary procedure changes and associated applicability determinations.

The inspectors reviewed the following:

- TMP 04-011, “Post Engine Overhaul Run-in and Governor Testing of A EDG [Emergency Diesel Generator],” Revision 1
- TMP 04-004, “A Emergency Diesel Generator Retest,” Revision 0.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY
Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiological Significant Areas (71121.01)

a. Inspection Scope

This area was inspected to assess the licensee's performance in implementing physical and administrative controls for airborne radioactivity areas, radiation areas, high radiation areas (HRAs), and worker adherence to these controls. The inspector 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 inspector interviewed the radiation protection manager, radiation protection supervisors, and radiation workers. The inspector 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.
- Controls (surveys, posting, and barricades) of five radiation, high radiation, or airborne radioactivity areas.
- Radiation work permit procedure, engineering controls, and air sampler locations.
- Conformity of electronic personal dosimeter alarm setpoints with survey indications and plant policy, workers' knowledge of required actions when their electronic personnel dosimeter noticeably malfunctions or alarms.
- Barrier integrity and performance of engineering controls in one airborne radioactivity areas.
- Physical and programmatic controls for highly activated or contaminated materials (nonfuel) stored within spent fuel and other storage pools.
- 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.
- Adequacy of radiological controls such as: required surveys, radiation protection job coverage, and contamination controls during job performance.
- Dosimetry placement in high radiation work areas with significant dose rate gradients.
- Changes in licensee procedural controls of high dose rate - HRAs and very HRAs.
- Controls for special areas that have the potential to become very HRAs during certain plant operations.
- Posting and locking of entrances to all accessible high dose rate - HRAs and very HRAs.
- Radiation worker and radiation protection technician performance with respect to radiation protection work requirements.

Either because the conditions did not exist or an event had not occurred, no opportunities were available to review the following items:

- Adequacy of the licensee's internal dose assessment for any actual internal exposure greater than 50 millirem committed effective dose equivalent.
- Licensee event reports and special reports related to the access control program since the last inspection.

The inspectors completed 21 of the required 21 samples.

b. Findings

Introduction. The inspectors identified a noncited violation of 10 CFR 20.1501(a) for failure to perform a survey to identify a radiation area in the radioactive waste building. The finding was of very low safety significance.

Description. On April 14, 2005, during a walkdown of the radioactive waste building, the inspectors identified, by direct survey, an unposted radiation area directly above the resin loading flange (FHE01A) of the recycle evaporator feed Demineralizer A. The flange was located on the 2051-foot elevation of the radioactive waste building. The licensee performed a confirmatory survey that indicated a contact dose rate of 20 millirem per hour and 10 millirem per hour at 30 centimeters. The inspectors reviewed survey data from February and March 2005 and noted that only general area dose rates were recorded. The surveys did not indicate that any contact radiation dose rates were performed on any plant components in the area.

Analysis. The failure to perform a radiation survey to comply with a regulatory requirement is a performance deficiency. The finding is greater than minor because it was associated with the occupational radiation safety cornerstone attribute (human performance) and it affected the associated cornerstone objective. The failure to perform an adequate survey decreases the licensee's ability to ensure adequate protection of worker health and safety from exposure to radiation. Using the occupational radiation safety significance determination process, the inspector determined that the finding was of very low safety significance because it did not involve: (1) as low as is reasonably achievable (ALARA) planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose.

Enforcement. 10 CFR 20.1501(a) requires that licensees make or cause to be made, surveys that may be necessary for the licensee to comply with the regulations of this part and are reasonable under the circumstances to evaluate the magnitude and extent of radiation levels and the potential radiological hazards. Pursuant to 10 CFR 20.1003, "survey" is defined as an evaluation of the radiological conditions and potential hazards incident to the use or presence of radioactive material. When appropriate, such an evaluation includes a physical survey of the location of radioactive material. The licensee violated 10 CFR 20.1501(a) when it did not perform an adequate survey to comply with 10 CFR 20.1902(a), which requires that licensees post each radiation area with a conspicuous sign or signs bearing the radiation symbol and the words "Caution, Radiation Area." Because this violation was of very low safety significance and was entered into the licensee's corrective action program as Performance Improvement Request 2005-1046, it is being treated as a noncited violation, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000482/0500301, failure to perform an adequate survey to identify a radiation area.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

1. Regional Inspection

a. Inspection Scope

The inspectors sampled licensee submittals for the performance indicators (PIs) listed below for the period from April 2004 through April 2005. To verify the accuracy of the PI data reported during that period, PI definitions and guidance contained in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Indicator Guideline," Revision 2, were used to verify the basis in reporting for each data element.

Occupational Radiation Safety Cornerstone

- Occupational Exposure Control Effectiveness PI

Licensee records reviewed included corrective action documentation that identified occurrences of locked HRAs (as defined in the licensee's Technical Specifications), very HRAs (as defined in 10 CFR 20.1003), and unplanned personnel exposures (as defined in NEI 99-02). Additional records reviewed included ALARA records and whole body counts of selected individual exposures. The inspectors interviewed licensee personnel that were accountable for collecting and evaluating the PI data. In addition, the inspectors toured plant areas to verify that high radiation, locked high radiation, and very HRAs were properly controlled.

Public Radiation Safety Cornerstone

- Radiological effluent Technical Specification/offsite dose calculation manual radiological effluent occurrences

Licensee records reviewed included corrective action documentation that identified occurrences for liquid or gaseous effluent releases that exceeded PI thresholds and those reported to the NRC. The inspectors interviewed licensee personnel that were accountable for collecting and evaluating the PI data.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

1. Section 2OS1 evaluated the effectiveness of the licensee's problem identification and resolution processes regarding access controls to radiologically significant areas and radiation worker practices. The inspectors reviewed corrective action documents for root cause/apparent cause analysis against the licensee's problem identification and resolution process. No findings of significance were identified.

2. Resident Inspector Semiannual Trend Review

a. Inspection Scope

On June 22, 2005, the inspectors completed the semiannual review of licensee documents, audits, reports, and internal PIs to identify trends that might indicate the existence of a more significant safety issue. The time period encompassed by the review was December 1, 2004, through May 31, 2005. The inspectors reviewed the following:

- System health reports
- PIRs
- Power block corrective action backlog
- Quality audit executive summaries
- Wolf Creek internal PIs
- Fourth quarter 2004 low-level trend analysis quick hit report

b. Findings and Observations

The inspectors noted an adverse trend in the areas of procedure adequacy, procedural compliance in operations, health physics, maintenance, and engineering. In addition, concerns with configuration control were noted for engineering. The licensee has identified similar trends and initiated a PIR to address procedural adequacy and compliance in the area of health physics. Specifically, PIR 2005-1966 was generated to address the adverse trend of procedural compliance problems within the Health Physics department.

Regarding the configuration issues, the licensee determined that the adverse trend, which appears to have started in August of 2004, is the result of "inattention to detail" on the part of the engineers responsible for the development of change packages. The licensee has completed their corrective actions for configuration control, which included generation of a document for the design engineers to read and a presentation delivered by the manager of Design Engineering. Both of these actions were intended to raise awareness of the issue and reinforce the use of human error reduction tools.

4OA4 Crosscutting Aspects of Findings

Section 2OS1 describes an issue with human performance crosscutting aspects which involved the failure of personnel to perform an adequate radiation survey to identify a radiation area.

4OA5 Other

.1 Temporary Instruction (TI) 2515/160, “Pressurizer Penetration Nozzles and Steam Space Piping Connections in U.S. Pressurized Water Reactors (NRC Bulletin 2004-01)

a. Inspection Scope

On April 20, 2005, the inspectors completed the review of the licensee’s pressurizer bare metal visual examination in accordance with the guidance provided in TI 2515/160. On April 16, 2005, the inspector observed the examination of four of the five steam space piping connections. The inspector independently examined three of the steam space piping connections. The licensee also inspected the surge line piping connection. The pressurizer heater penetrations were not required to be inspected. There were no boric acid traces or visual crack indications on the piping connections.

The licensee performed the examination with qualified personnel in accordance with the applicable procedure. A certified Level III nondestructive examination licensee employee performed the visual examination. The examination was capable of identifying any leakage in the piping components. As stated above, no leaks were identified.

The pressurizer head was clean with no boron present. There were no viewing obstructions or impediments to the direct visual examination. The examination covered the entire circumference of each piping connection. The licensee did not perform any volumetric examinations.

The inspectors reviewed the following documents:

- Certifications of quality department examination/inspection personnel
- Procedure QCP-20-519, “Section XI Visual Examination,” Revision 5
- Procedure QCP-20-520, “Pressure Test Examination,” Revision 5
- Work Order 04-0039 dated July 27, 2004, Licensee’s 60-day response letter to NRC Bulletin 2004-001
- Work Order 04-258722-018, “Perform Bare Metal Examination of Nozzle to Pipe (Alloy 82/182) Welds on Top of Pressurizer”

b. Findings

No findings of significance were identified.

.2 TI 2515/163, “Operational Readiness of Offsite Power”

a. Inspection Scope

The inspectors collected data pursuant to TI 2515/163, "Operational Readiness of Offsite Power." The inspectors reviewed the licensee's procedures related to General Design Criteria 17, "Electric Power Systems"; 10 CFR 50.63, "Loss of All Alternating Current Power"; 10 CFR 50.65(a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants"; and the Technical Specifications for the offsite power system. The data was provided to the Office of Nuclear Reactor Regulation for further review. Documents reviewed for this TI are listed in the attachment.

b. Findings

No findings of significance were identified.

4OA6 Meetings, including Exit

The inspectors presented the resident inspection results to Mr. Steve Hedges, Vice President Operations and Plant Manager, and other members of licensee management after the conclusion of the inspection on July 6, 2005.

On April 15, 2005, the inspectors presented the access control to radiological significant areas inspection results to Mr. E. Ray, Acting Vice President, Operations, and other members of his staff who acknowledged the findings.

The inspector presented the results of the inservice inspection activities inspection to Mr. R. A. Muench, President and Chief Executive Officer, and other members of licensee management on April 22, 2005.

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

4OA7 Licensee-Identified Violations

None

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

R. Muench, President and Chief Executive Officer
S. Hedges, Vice President Operations and Plant Manager
T. J. Garrett, Vice President Engineering
M. Sunseri, Vice President Oversight

ITEMS OPENED, AND CLOSED

Opened and Closed

05000482/05003001	NCV	Failure to perform an adequate survey to identify a radiation area (Section 2SO1).

Equipment Alignment

- CKL AL-120, “Auxiliary Feedwater Normal Lineup,” Revision 33A
- CKL NK-131, “NK Distribution Switchboard Switch Lineup Checklist,” Revision 8

Fire Protection

- Work Order 05-272203-000
- Fire Boundary Impairment Permit 2004-148

Maintenance Effectiveness

- Functional failure evaluations for LF and SP, floor drain and radiation monitoring systems
- Functional failure evaluations for NB, lower medium voltage system
- Maintenance rule bases information for LF and SP, floor drain and radiation monitoring systems
- Maintenance rule bases information for NB, lower medium voltage system
- Maintenance rule expert panel meeting minutes for NB, lower medium voltage system
- Maintenance rule expert panel meeting minutes for LF and SP
- Maintenance rule performance evaluations for LF and SP, floor drain and radiation monitoring systems

- Maintenance rule performance evaluation for NB, lower medium voltage system
- PIRs 2005-0121 and -1521
- System health report for SP, radiation monitoring system and NB, lower medium voltage system
- Work Orders 04-262952-000, -262953-000, -262954-000, 05-269776-000, and -269776-001

Operability Evaluations

- OE EF-05-002, “Essential Service Water Piping to the Auxiliary Feedwater System,” Revision 0
- Reportability Evaluation Request 2005-007/WR 05-048010
- Engineering Disposition, As-found short stroke of valve, ABHV0005
- Engine Systems Inc., Document 8000384-FA, “Failure Analysis for Woodward EGB-50P Governor Assembly,” Revision 0, issued April 20, 2005
- Engine Systems Inc., Test as received report, issued April 19, 2005
- Performance IR 2005-1004
- Reportability Evaluation Request 2005-007/WR 05-048010
- Updated Safety Analysis Report

PI Verification

- Licensee performance indicator worksheets
- Performance indicator summary reports
- Selected NRC inspection reports
- Selected control room operator logs

Postmaintenance Testing

- STS AL-104, “TDAFW ESF Response Time, Flow Path Verification and Check Valve Testing,” Revision 10
- STS KJ-015A, “Manual/Auto Fast Start, Sync and Loading of EDG NE01,” Revision 18
- STS EF-100A, “ESW System Inservice Pump A & ESW A Discharge Valve Test,” Revision 27

- SYS KJ-121, “Diesel Generator NE01 and NE02 Lineup for Automatic Operation,” Revision 35
- SYS KJ-123, “Post Maintenance Run of Emergency Diesel Generator A,” Revision 30
- SYS KJ-124, “Post Maintenance Run of Emergency Diesel Generator B,” Revision 27A
- Work Orders 02-238313-001, 03-256159-016, 04-259802-001, -259819-001, -260104-03, -260844-001, 05-272252-001, and -272529-004

Refueling Outage

- GEN 00-002, “Cold Shutdown to Hot Standby,” Revision 60
- GEN 00-003, “Hot Standby to Minimum Load,” Revision 66
- GEN 00-004, “Power Operation,” Revision 53
- GEN 00-005, “Minimum Load to Hot Standby,” Revision 51
- GEN 00-006, “Hot Standby to Cold Shutdown,” Revision 56
- GEN 00-008, “Reduced Inventory Operations,” Revision 15A
- SYS BB-112, “Vacuum Fill and Vent of the RCS,” Revision 22
- SYS BB-215, “RCS Drain Down With Fuel In Reactor,” Revision 14
- Clearance Orders KJ-A-001, KJ-B-001

Temporary Modification

- TMP 04-011, “Post Engine Overhaul Run-in and Governor Testing of A EDG,” Revision 1
- TMP 04-004, “A Emergency Diesel Generator Retest,” Revision 0

Section 2OS1: Access Control To Radiologically Significant Areas (IP71121.01)

Procedures

RPP 08-105, “Underwater Dive Operations”, Revision 6
RPP 02-215, “Posting of Radiological Controlled Areas,” Revision 21
RPP 02-210, “Radiation Survey Methods,” Revision 25
RPP 02-105, “Radiation Work Permit,” Revision 22
RPP 03-100, “Special Dosimetry,” Revision 14
RPP 03-106, “Use of Special Dosimetry,” Revision 14
AP 25A-200, “Access to Locked High and Very High Radiation Areas,” Revision 14
AP 25A-100, “Containment Entry,” Revision 11
AP 25A-001, “Radiation Protection Manual,” Revision 11
AP 25B-100, “Radiation Worker Guidelines,” Revision 23

Radiation Work Permits

054007, 054006, 055001, 053230, 053220, and 051102,

Condition Reports

2004-1796, -0569, -0734, -1044, -1120, -1254, -1341, -1420, -1596, -1597, 2005-0013, and -0129

Self-Assessments/Audits

K-615 Radiation protection
K-621 Radiation protection program

Section 4OA1: Performance Indicator Verification (IP 71151)

Miscellaneous

2004 Annual Effluent Release Report

Inservice Inspetion Activities

Boric Acid Evaluations

EPV0099 Boric Acid Evaluation, dated November 3, 2003

Procedures

- _____, Steam Generator Data Analysis Desktop Instruction," Revision 0
- AI 16F-001, "Evaluation of Boric Acid Leakage," Revision 2
- AI 16F-002, "Boric Acid Leakage Management," Revision 1
- AP 16F-001, "Boric Acid Corrosion Control Program," Revision 3
- AP 29A-003, "Steam Generator Monitoring," Revision 8
- GAS-ASME, "ASME General Welding Standard," Revision 6
- I-ENG-023, "Steam Generator Data Analysis Guidelines," Revision 4
- MRS-GEN-1127, "Guidelines for Steam Generator Eddy-Current Data Quality Requirements," Revision 3
- MT-7, "Magnetic Particle Examination," Revision 1
- PDI-ISI-254-SE, "Remote Inservice Examination of Reactor Vessel Nozzle to Safe End, Nozzle to Pipe and Safe End to Pipe Welds," Revision 2
- PT-10, "Liquid Penetrant Examination," Revision 2
- PT-11, "Liquid Penetrant Examination", Revision 1

- QCP-20-508, “Radiographic Examination Procedure,” Revision 1
- STN PE-040D, “Reactor Coolant System Pressure Boundary Integrity Walkdown,” Revision 2
- STS MT-011, “Snubber Visual Examination,” Revision 15
- UT-2, “Ultrasonic Examination of Vessel Welds and Adjacent Base Metal,” Revision 22
- UT-95, “Ultrasonic Examination of Austenitic Piping Welds,” Revision 0
- WPS1-0808T01, “Gas Tungsten Arc Welding of P8 Materials,” Revision 4

Nondestructive Examination Reports

Liquid Penetrant Examination Report TMC-003
Magnetic Particle Examination Report MG-001
Radiographic Reports - RT-2018, 2022, 2028, 2791, 2792, and 3640
Ultrasonic Examination Report TMC-002

Eddy-Current Data Analysis Calibration Group

Steam Generator B Cold-Leg Calibration Group Number 56
Steam Generator C Hot-Leg Calibration Group Numbers 11, 13, 15, and 127
Steam Generator C Cold-Leg Calibration Group Number 6, 36, 38, and 60

PIRs

2003-3286, -3352, 2004-1241, -1920, -2250, -2460, -2906, -2908, 2005-0524, -1040, -1091, and -1189

Surveillance Tests

STN PER-040D, dated April 10, 2005

Work Requests/Orders

03-039507, -253642-005, 04-045659, -260736, -265658, 05-047091, -048394, -048398, -048416, -048417, -0485898, -048590, -048591, -048605, and -048708

Miscellaneous

Material certifications of the ultrasonic gel, magnetic particle powder, penetrant cleaner, penetrant dye, and penetrant developer

NRC Letter to O. L. Maynard, WCNOC, from S. Dembek, USNRC, “Approval of Relief Request for Application of Risk-Informed Inservice Inspection Program for ASME Boiler and Pressure Vessel Code Class 1 and 2 Piping for Wolf Creek Generating Station,” December 13, 2001

Nondestructive examination personnel records such as contractor certification reviews, Performance demonstration initiative program certifications, and eye examinations

SG-SGDA-05-3, “Steam Generator Degradation Assessment for Wolf Creek Refueling 14 Outage - April 2005,” Revision 0

SG-SCDA-03-51, “Wolf Creek Refueling Outage 13 Condition Monitoring Assessment and Operational Assessment - February 11, 2004,” Revision 2

WCRE-10, “Inservice Inspection Program Plan, Interval 2,” Revision 7

WCRE-12, “Risk-Informed Inservice Inspection Basis Document,” Revision 1