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

June 14, 2004

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 EXAMINATION REPORT 05000482/2004-301

Dear Mr. Muench:

On May 13, 2004, the US Nuclear Regulatory Commission (NRC) completed an examination at your Wolf Creek Generating Station. The enclosed report documents the examination findings, which were discussed on May 13, 2004, with Mr. Tony Harris, Director, Performance Improvement and Learning, and other members of your staff.

The examination included an evaluation of five applicants for reactor operator licenses and three applicants for senior operator licenses. The written and operating examinations were developed using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Draft Revision 9. The license examiners determined that seven of the eight applicants satisfied the requirements of 10 CFR Part 55, and the appropriate licenses have been issued.

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 examination in the NRC Public Document Room or from the Publicly Available Records (PARS) 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/

Anthony T. Gody, Chief
Operations Branch
Division of Reactor Safety

Docket: 50-482
License: NPF-42

Enclosure:
Examination Report 05000482/2004-301;

cc w/enclosure:
Site Vice President
Wolf Creek Nuclear Operating Corp.
P.O. Box 411
Burlington, KS 66839

Jay Silberg, Esq.
Shaw, Pittman, Potts & Trowbridge
2300 N Street, NW
Washington, DC 20037

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

Chief Engineer
Utilities Division
Kansas Corporation Commission
1500 SW Arrowhead Rd.
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 66839-1798

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

Frank Moussa, Technological Hazards Administrator
Department of the Adjutant General
2800 SW Topeka Blvd.
Topeka, KS 66611-1287

Electronic distribution by RIV:
Regional Administrator **(BSM1)**
DRP Director **(ATH)**
DRS Director **(DDC)**
Senior Resident Inspector **(FLB2)**
Resident Inspector **(TBR2)**
SRI, Callaway **(MSP)**
Branch Chief, DRP/B **(DNG)**
Senior Project Engineer, DRP/B **(RAK1)**
Staff Chief, DRP/TSS **(PHH)**
RITS Coordinator **(KEG)**
Rebecca Tadesse, OEDO RIV Coordinator **(RXT)**
WC Site Secretary **(SLA2)**

ADAMS: ☐ Yes ☐ No Initials: _____
☐ Publicly Available ☐ Non-Publicly Available ☐ Sensitive ☐ Non-Sensitive

| SOE:OB | SOE:OB | SOE:OB | C:OB | C:PBB | C:OB |
|---|---|---|---|---|---|
| TFStetka/lmb | TOMcKernon | PCGage | ATGody | DNGraves | ATGody |
| /RA/ | /RA/ | /RA/ | /RA/ | /RA/ | /RA/ |
| 06/09/04 | 06/09/04 | 06/14/04 | 06/09/04 | 06/10/04 | 06/14/04 |

OFFICIAL RECORD COPY T=Telephone E=E-mail F=Fax

ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

| | |
|---|---|
| Docket: | 50-482 |
| License: | NPF-42 |
| Report No.: | 05000482/2004-301 |
| Licensee: | Wolf Creek Nuclear Operating Corporation |
| Facility: | Wolf Creek Generating Station |
| Location: | 1550 Oxen Lane, NE<br>Burlington, Kansas |
| Dates: | May 10-13, 2004 |
| Examiners: | T. F. Stetka, Chief Examiner, Senior Operations Engineer, Operations Branch<br>T. O. McKernon, Senior Operations Engineer, Operations Branch<br>P. C. Gage, Senior Operations Engineer, Operations Branch |
| Approved By: | Anthony T. Gody, Chief<br>Operations Branch<br>Division of Reactor Safety |

SUMMARY OF FINDINGS

ER 05000482/2004-301; Wolf Creek Generating Station; Initial Operator Licensing Examination.

NRC examiners evaluated the competency of five applicants for reactor operator licenses and three applicants for senior operator licenses at Wolf Creek Generating Station. The licensee developed the examination using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Draft Revision 9. The licensee provided proctors for the administration of the written examination to all applicants on May 7, 2004, in accordance with instructions provided by the chief examiner. The NRC examiners administered the operating test on May 10-13, 2004.

**Cornerstone: Human Performance**

No findings of significance were identified (Section 40A4.1).

REPORT DETAILS

4. OTHER ACTIVITIES

4OA4 Initial License Examination

.1 Operator Knowledge and Performance

a. Examination Scope

On May 7, 2004, the licensee proctored the administration of the written examinations to all eight applicants. The licensee then analyzed the results and forwarded the proposed grades together with the performance analysis to the NRC for review and approval.

The NRC examination team administered the operating test to the eight applicants on May 10-13, 2004. Each reactor operator applicant participated in two dynamic simulator scenarios, a control room and facilities walkthrough test consisting of 11 system tasks, and an administrative test consisting of 1 task in each of four areas. The applicant that was upgrading their operator license to a senior operator license participated in one scenario and took a control room and facilities walkthrough test consisting of 5 system tasks. The two applicants seeking an instant senior operator license participated in two dynamic simulator scenarios and a control room and facilities walkthrough test consisting of 10 system tasks. The administrative test for all senior operator applicants consisted of performing tasks in five areas.

b. Findings

All eight of the applicants passed all parts of the operating test. One reactor operator applicant failed the written examination. For the written examinations, the reactor operator applicant's average score was 84.8 percent and the senior operator applicant's average score was 88.7 percent. The reactor operator applicant scores ranged from 76 to 93.3 percent and the senior operator applicant scores ranged from 85 to 95 percent. The text of the examination questions may be accessed in the ADAMS system under the accession numbers noted in the attachment.

Chapter ES-403 and Form ES-403-1 of NUREG 1021 require the licensee to analyze the validity of any written examination questions that were missed by half or more of the applicants. The licensee conducted this performance analysis for 10 questions that met this criteria and submitted the analysis to the chief examiner on May 13, 2004. This analysis included the licensee's recommendations regarding the disposition of these questions. These questions follow:

Reactor/Senior Operator Question 6

This question involved the restoration of pressurizer level after the control room was evacuated. The majority of the applicants selected Distractor C, which stated, "The Operator performing Auxiliary Building Actions will locally control Centrifugal Charging Pump Discharge Flow Control Valve, BG FCV-121." This answer is incorrect. The correct answer, Distractor A, was consistent with the requirements of Procedure OFN RP-017. This procedure requires pressurizer level to be maintained by

having the turbine building operator open the boron injection tank inlet valve and throttle the boron injection tank outlet valve.

Licensee Analysis: No change is required as the question is valid as written. Remediation training will be conducted during the examination review with all applicants. The NRC chief examiner concurred with the licensee's analysis and corrective actions.

Reactor/Senior Operator Question 8

This question involved the actions necessary to identify and isolate a leak in the component cooling water (CCW) system. These actions are contained in Procedure OFN EG-004, "CCW System Malfunction."

The facility normally operates with only one CCW train in service. Step 1 in the results not obtained column of Procedure OFN EG-004, requires the starting of a CCW pump in the idle (or alternate) train. The procedure then directs that attempts to identify the leak location be continued. If the leak has not been located or identified, the operator is then directed to shift the in-service loop to the alternate train. The question requires the applicant to determine which action(s) are to be performed "first." Distractor A states that the operator is required to first align the essential service water makeup to the CCW surge tank and then direct personnel to locate the leak. Distractor B, however, states that the operator is required to first start a CCW pump in the alternate train and then to shift the in-service loop to that train. The actions described by Distractor A are taken in Steps 3 and 4 of the results not obtained while the actions described by Distractor B are taken in results not obtained Steps 1and 5.

Licensee analysis: The licensee's examination key identified Distractor A as the correct answer. Following their initial analysis, however, the licensee determined that the actual correct answer was Distractor B. As the result of this analysis, the licensee initially proposed that both Distractors A and B be accepted as correct answers. The NRC chief examiner disagreed with the licensee's proposal. After further review and discussion between the NRC chief examiner and the licensee, the licensee agreed that the first action taken, the start of the alternate train CCW pump, made Distractor B the only correct answer. The answer key, examination question and candidates grades were all changed to reflect Distractor B as the correct answer.

Reactor/Senior Operator Question 15

This question required the applicant to determine the reason for the design that swaps-over the condensate storage tank to the essential service water system. Distractor A was the answer selected by the applicants. This distractor is incorrect in that the auxiliary feedwater pump suction head will be maintained even though the low suction pressure signal has alarmed. Distractor D, which stated that the condensate storage tank is not seismically qualified and the essential service water system is seismically qualified, is consistent with the design description in the facility's Updated Safety Analysis Report and was the correct answer.

Licensee Analysis: No change is required as the question is valid as written. Remediation training will be conducted during the examination review with all applicants. The NRC chief examiner concurred with the licensee's analysis and corrective actions.

Reactor/Senior Operator Question 34

This question provided a list of pressurizer relief tank conditions after a plant transient occurred in which it could be assumed that a power operated relief valve was opened. Distractor A is the only answer in which all parameters of pressurizer relief tank temperature, pressure, and level increased.

Licensee Analysis: No change is required as the question is valid as written. Remediation training will be conducted during the examination review with all applicants. The NRC chief examiner concurred with the licensee's analysis and corrective actions.

Reactor/Senior Operator Question 42

This question required the applicant to determine the actions necessary if the containment spray actuation system has not actuated when required while the operator is performing Attachment F of Procedure EMG E-0. Distractor B, the correct answer, stated that Procedure EMG E-0 requires the operators to stop the reactor coolant pumps and then to manually initiate the containment spray actuation system. Distractor A, the answer selected by the majority of the candidates, was incorrect, in that, the response not obtained steps, which must be followed in order, did not permit the immediate actuation of the containment spray actuation system and the "B" containment isolation signal.

Licensee Analysis: No change is required as the question is valid as written. Remediation training will be conducted during the examination review with all applicants. The NRC chief examiner concurred with the licensee's analysis and corrective actions.

Reactor/Senior Operator Question 63

This question required the applicants to determine what systems will prevent a reactor coolant system overpressure event, assuming that all systems work as designed following a plant trip. Most of the applicants that missed this question chose Distractor A, which listed the pressurizer relief tank valves. While the pressurizer relief tank valves are designed to minimize or prevent an reactor coolant system overpressure event, they would not normally operate following a plant trip from 100 percent power with all systems and equipment operating normally. The steam dump valves (Distractor D) would prevent these valves from opening.

Licensee Analysis: No change is required as the question is valid as written. Remediation training will be conducted during the examination review with all applicants. The NRC chief examiner concurred with the licensee's analysis and corrective actions.

Reactor/Senior Operator Question 67

This question tested the applicant's knowledge of the continuous actions in the emergency management guidelines (EMG) network. In the emergency management guideline network, continuous actions remain applicable until superceded. This was the answer provided by Distractor A that was selected by four of the eight applicants. However, when a RED or ORANGE path functional recovery procedure is being performed, as was the case in this question, all emergency management guideline continuous actions are no longer applicable since the mitigation strategy had not been successful. Therefore, Distractor D, which specified that the continuous steps are not applicable after entering Emergency Management Guideline Functional Recovery-C1, was the only correct answer for the conditions given.

Licensee Analysis: No change is required as the question is valid as written. Remediation training will be conducted during the examination review with all applicants. The NRC chief examiner concurred with the licensee's analysis and corrective actions.

Senior Operator Question 89

This question had the applicants determine the necessary actions to address increased activity levels in the reactor coolant system following a plant transient. Distractor C, which provided the correct answer, states that when the 100/E-Bar gross activity limit has been exceeded, cleanup flow must be maximized as directed by chemistry in accordance with Procedure OFN BB-006. The information provided in the question includes a calculated value of 100/E-Bar of 250 μCi/gm, a DEI value of 97 μCi/gm, and a gross coolant activity of 45 μCi/gm. From this data, the applicants should have determined that the activity was greater than 10 percent of the 100/E-bar value given and that the 100/E-Bar limit was exceeded.

Licensee Analysis: No change is required as the question is valid as written. Remediation training will be conducted during the examination review with all applicants. The NRC chief examiner concurred with the licensee's analysis and corrective actions.

Senior Operator Question 97

This question had the applicants determine the basis for control rod bank overlap. The answer selected by the majority of the applicants was Distractor C, which stated that the overlap provides uniform rod worth and adequate shutdown margin. This answer was incorrect because rod insertion limits, not rod overlap, ensures adequate shutdown margin.

Licensee Analysis: No change is required as the question is valid as written. Remediation training will be conducted during the examination review with all applicants. The NRC chief examiner concurred with the licensee's analysis and corrective actions.

Senior Operator Question 99

This question had the applicants determine the actions that must be taken if a radioactive gas release is delayed after the permit is issued. Distractor B, the answer selected by the majority of the applicants, is that the release would not be permitted because the release permit has expired. Distractor B, which provides the correct answer, stated that another gaseous decay tank sample must be taken. Furthermore, based on the data provided in the question, the release permit did not expire.

Licensee Analysis: No change is required as the question is valid as written. Remediation training will be conducted during the examination review with all applicants. The NRC chief examiner concurred with the licensee's analysis and corrective actions.

The licensee documented the remedial training followup in Corrective Action Document PIR#2004-1279.

.2 Initial Licensing Examination Development

The licensee developed the operating and written test in accordance with NUREG-1021, Draft Revision 9. Licensee facility training and operations staff involved in examination development were on a security agreement.

.2.1 Operating Examination Outline and Examination Package

a. Examination Scope

The licensee staff completed the operating test outlines on January 9, 2004. The chief examiner reviewed the submittal against the requirements of NUREG-1021, Draft Revision 9. The draft examination package was reviewed by the NRC on April 7, 2004. Examiners reviewed the licensee's comments against the requirements of NUREG-1021, Draft Revision 9, and provided comments to the licensee on April 7, 2004. The chief examiner conducted an onsite validation of the examinations and provided further comments during the week of April 19, 2004.

b. Findings

Examiners approved the initial examination outline with minor comments and advised the licensee to proceed with the operating examination development.

The chief examiner determined that the operating test initially submitted by the licensee staff were within the range of acceptability expected for a proposed examination.

No findings of significance were identified.

.2.2 Simulation Facility Performance

a. Scope

The examination team observed simulator performance with regard to plant fidelity during the examination validation and administration.

b. Findings

No findings of significance were identified.

2.3 Examination Security

a. Scope

The examiners reviewed examination security both during the onsite preparation and examination administration weeks with respect to NUREG-1021 requirements. Written plans for simulator security and applicant control were reviewed and discussed with licensee personnel.

b. Findings

No findings of significance were identified.

4OA6 Exit Meeting

On May 13, 2004, the examiners presented the examination results to Mr. Tony Harris, Director, Performance Improvement and Learning, and other members of your staff, who acknowledged the findings. The inspectors confirmed that proprietary information was not provided or reviewed during the examination process.

## ATTACHMENT

## KEY POINTS OF CONTACT

Licensee personnel

S. Falley, Initial License Training Supervisor
R. Acree, Exam Author
R. Murray, Exam Supervisor
M. Guyer, Superintendent, Operations Training
L. Wilhelm, Instructor
R. Ewy, Instructor

NRC personnel

F. Brush, Senior Resident Inspector, Wolf Creek

## ADAMS DOCUMENTS REFERENCED

Accession No.: ML041610119 - Reactor operator written examination

Accession No.: ML041610133 - Senior operator written examination

Accession No.: ML041610190 - Written examination performance analysis and applicant questions