



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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ARLINGTON, TEXAS 76011-4005

April 3, 2006

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
05000482/2006301

Dear Mr. Munench:

On March 9, 2006, the US Nuclear Regulatory Commission (NRC) completed an examination at Wolf Creek Generating Station. The enclosed report documents the examination findings, which were discussed on March 10, 2006, with Mr. Matthew Sunseri, Vice President Oversight, and other members of your staff.

The examination included the evaluation of three applicants for reactor operator licenses, two applicants for instant senior operator licenses and one applicant for upgrade senior operator license. The written and operating examinations were developed using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9. The license examiners determined that all six of the 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 inspection 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/ REL for

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

Docket: 50-482
License: NPF-42

Enclosure:

NRC Examination Report 05000482/2006301
w/Attachments: Supplemental Information

cc w/enclosure:

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

Dockets: 50-482

Licenses: NPF-42

Report : 05000482/2006301

Licensee: Wolf Creek Nuclear Operating Corporation

Facility: Wolf Creek Nuclear Generating Station

Location: P.O. Box 411
Burlington, KS 66839

Dates: March 3-9, 2006

Inspectors: J. F. Drake, Chief Examiner, Operations Branch
T. O. McKernon, Senior Operations Engineer, Operations Branch
M. S. Haire, Enforcement Specialist, Allegation
Coordination/Enforcement Staff

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

SUMMARY OF FINDINGS

ER 05000482/2006301; 03/03-09/2006; Wolf Creek Nuclear Generating Station; Initial Operator Licensing Examination Report.

NRC examiners evaluated the competency of three applicants for reactor operator licenses, two applicants for instant senior operator licenses and one applicant for upgrade senior operator license at Wolf Creek Nuclear Generating Station. The facility licensee developed the examinations using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9. The written examination was administered by the facility on March 3, 2006. NRC examiners administered the operating tests on March 6-9, 2006. The license examiners determined that all six of the applicants satisfied the requirements of 10 CFR Part 55, and the appropriate licenses have been issued.

A. NRC-Identified and Self-Revealing Findings

None.

B. Licensee-Identified Violations

None.

REPORT DETAILS

4. OTHER ACTIVITIES (OA)

4OA5 Other Activities (Initial Operator License Examination)

.1 License Applications

a. Scope

The examiners reviewed six license applications submitted by the licensee to ensure the applications reflected that each applicant satisfied relevant license eligibility requirements. The applications were submitted on NRC Form 398, "Personal Qualification Statement," and NRC Form 396, "Certification of Medical Examination by Facility Licensee." The examiners also audited two of the license applications in detail to confirm that they accurately reflected the subject applicant's qualifications. This audit focused on the applicant's experience and on-the-job training, including control manipulations that provided significant reactivity changes.

b. Findings

No findings of significance were identified.

.2 Operator Knowledge and Performance

a. Examination Scope

On March 3, 2006, the licensee proctored the administration of the written examinations to all six applicants. The licensee staff graded the written examinations, analyzed the results, and presented their analysis to the NRC on March 10, 2006.

The NRC examination team administered the various portions of the operating examination to all six applicants on March 6-9, 2006. The three applicants for reactor operator licenses participated in two dynamic simulator scenarios, a control room and facilities walkthrough test consisting of 11 system tasks and an administrative test consisting of 4 administrative tasks. The two applicants seeking an instant senior operator license participated in two dynamic simulator scenarios, a control room and facilities walkthrough test consisting of 10 system tasks and an administrative test consisting of 5 administrative tasks. The one applicant for upgrade senior operator license participated in one dynamic simulator scenario, a control room and facilities walkthrough test consisting of five system tasks, and an administrative test consisting of five administrative tasks.

b. Findings

All six of the applicants passed all parts of the operating test. All six of the applicants passed the written examination. For the written examinations, the reactor operator applicant's average score was 88.43 percent and ranged from 88 to 89.3 percent, the senior operator applicant's average score was 94.67 percent and ranged from 92 to 98

percent. The overall written examination average was 91.55 percent. The text of the examination questions may be accessed in the ADAMS system under the accession numbers noted in Attachment 1 to this report.

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 five questions that met these criteria and submitted the analysis to the chief examiner on March 10, 2006. This analysis concluded that one of the questions (SRO Exam Question 87) had two correct answers, the other questions were valid and remediation of the applicants was conducted.

Question 87: Missed by two of three SRO candidates

Which ONE (1) of the following describes ONLY reactor trip instrumentation with setpoints designed to prevent Departure From Nucleate Boiling? (DNB)

- A. Reactor Coolant Flow and Overpower Delta T.
- B. RCP Bus Undervoltage and Overtemperature Delta T.
- C. Overtemperature Delta T and Overpower Delta T.
- D. Power Range High Neutron Flux and Reactor Coolant Flow.

Proposed Answer:

- B. RCP Bus Undervoltage and Overtemperature Delta T.

Facility Response:

Answer "D," "Power range high neutron flux and reactor coolant flow" is also a correct answer. Reactor coolant flow is an obvious DNB protection, and power range high neutron flow, according to T/S Bases, 3.3.1, page 3.3.1-9, "The Power Range Neutron Flux - High trip Function ensures that protection is provided, from all power levels, against a positive reactivity excursion leading to DNB during power operations."

It was not noted during the validation process of the question that D was also a correct answer. Recommend accepting answers B and D as correct. References provided.

NRC Response:

The staff reviewed the references and concurs with the licensee's recommendation to accept B and D as correct answers to Question 87.

.3 Initial Licensing Examination Development

a. Examination Scope

The licensee developed the examinations in accordance with NUREG-1021, Revision 9. All licensee facility training and operations staff involved in examination preparation and validation were on a security agreement. The facility licensee submitted both the written and operating examination outlines on November 4, 2005. The chief examiner reviewed the outlines against the requirements of NUREG-1021, Revision 9, and provided comments to the licensee. The facility licensee submitted the draft examination package on January 9, 2006. The chief examiner reviewed the draft examination package against the requirements of NUREG-1021, Revision 9, and provided comments to the licensee on the examination on February 2, 2006. The NRC conducted an onsite validation of the operating examinations and provided further comments during the week of February 13, 2006. The licensee satisfactorily completed comment resolution on February 22, 2006.

b. Findings

The NRC approved the initial examination outline and advised the licensee to proceed with the operating examination development.

The examiners determined that the written and operating examinations initially submitted by the licensee were within the range of acceptability expected for a proposed examination.

No findings of significance were identified.

.4 Simulation Facility Performance

a. Examination Scope

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

b. Findings

No findings of significance were identified.

.5 Examination Security

a. Examination Scope

The examiners reviewed examination security for examination development and during both the onsite preparation week and examination administration week for compliance with NUREG-1021 requirements. Plans for simulator security and applicant control were reviewed and discussed with licensee personnel.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

The chief examiner presented the examination results to Mr. Matthew Sunseri, Vice President Oversight, and other members of the licensee's management staff on March 10, 2006. The licensee acknowledged the findings presented.

The licensee did not identify any information or materials used during the examination as proprietary.

ATTACHMENTS:

1. SUPPLEMENTAL INFORMATION
2. Licensee Analysis of examination questions

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

Matthew Sunseri, Vice President Oversight
Mona Guyer, Operations Training Manager
Steve Falley, Training Supervisor
Rick Hubbard, Operations Supervisor, Training
Steve Henry, Operations Supervisor
Robert Acree, Nuclear Training Instructor
Eddie Ray, Operations Manager
Bill Muilenburg, Licensing Engineer

NRC Personnel

Travis Rhoades, Resident Inspector

ADAMS DOCUMENTS REFERENCED

Accession No.: ML 060860306 - Written examination for reactor and senior reactor operators

WOLF CREEK 2006 INITIAL LICENSE EXAM

Exam Analysis of Questions Missed by 50% or More of the Applicants and Facility Response.

Question 3: Missed by four of six candidates.

The question asked the candidate to determine the effect of placing an unborated cation bed in service. Three of the four incorrect answers chose "Lithium concentration will rise." This is incorrect. A cation bed will decrease lithium concentration.

The other incorrect selection was: "A small rise in letdown flow." Since letdown flow is controlled by a fixed orifice and throttle valve, an increase in pressure would cause a small increase in letdown flow. An increase in RCS temperature would attempt to increase RCS pressure; however, PZR spray valves would open keeping pressure relatively constant.

Discussion with candidates indicated they assumed that Program PZR Level would increase right away and charging flow would increase.

Facility Response: Questions stands as is. Remediation provided.

Question 12: Missed by three of six candidates.

This question asked the power supply to a 480-VAC safety-related valve. Three candidates incorrectly chose distractor "C. NG03." The correct answer was "A," "NG01." "C" was the most credible incorrect distractor as it is the other 480 VAC load center on the selected safety train.

Discussion with candidates indicated they had to choose between the two.

Facility Response: Questions stands as is. Remediation provided.

Question 17: Missed by three of six candidates.

This question asked the candidate to determine the trend in AFW flow necessary to maintain stable S/G level during a cooldown immediately following a reactor trip.

Two candidates chose distractor "B," "AFW flow requirements are constant as long as the cooldown rate is constant." This is incorrect. Decay heat will decrease significantly requiring less AFW flow to maintain the cooldown. One candidate chose "D," "More AFW flow is required to maintain SG level due to the increased density of the SG water as it cools." This is incorrect. This effect is insignificant when compared to the decreased decay heat and is partially off-set by the increased enthalpy change associated with lower pressure/temperature in the S/G. Discussion with candidates indicated they had not considered the reduction in decay heat.

Facility Response: Questions stands as is. Remediation provided.

Question 40: Missed by three of six candidates.

This question asked the candidate to determine why a temperature change occurs across a leaking code safety valve. Three candidates missed this question.

One of the candidates chose distractor "A," "The leak is too small to overcome ambient heat loss to the containment." This is incorrect. The question states that the tailpipe temperature is increasing, which would not be the case if ambient losses were greater than leak capacity. Two candidates chose distractor "B," "The fluid temperature corresponds to the PRT saturation pressure because a large amount of energy is lost in a throttling process." This is incorrect because a throttling process is considered an iso-enthalpic process—basically no energy is lost through the process.

Discussion with candidates indicated the wording/terminology in the question was slightly different from what they were used to.

Facility Response: Questions stands as is. Remediation provided.

Question 87: Missed by two of three SRO candidates

This question asked the candidate to select which trip instrumentation is designed to prevent DNB challenges.

Two candidates selected distractor "D," "Power range high neutron flux and reactor coolant flow." This answer is also a correct answer. Reactor coolant flow is an obvious DNB protection, and power range high neutron flow, according to T/S Bases, 3.3.1, page 3.3.1-9, "The Power Range Neutron Flux - High trip Function ensures that protection is provided from all power levels against a positive reactivity excursion leading to DNB during power operations."

Facility Response: This was not noted during the validation process of the question that D was also be correct. Recommend accepting answers B and D as correct. References provided.

Question 87 is the only question that Wolf Creek feels must be corrected. The remaining four questions determined that there was a deficiency in the knowledge level of the candidates. Corrective Action document PIR 2006-0611 was written and remediation for all the questions missed was held with the candidates on March 9, 2006.



03/10/2006



3/10/2006

Robert Acree

Mona Guyer
Senior License Instructor

Superintendent

Exam Author

Operations Training

Excerpt from PIR 2006-0611

The 2006 Initial License written exam was administered on March 3rd, 2006. 50% or more of the candidates missed five questions. NUREG 1021, OPERATOR LICENSING EXAMINATION STANDARDS FOR POWER REACTORS, requires an exam analysis be performed on these questions to determine if the result is due to a knowledge/training issue or a question flaw.

The exam analysis was performed. It was determined that one of the five questions had two correct answers. The remaining four questions will stay as written.

Remediation for the missed questions was held on March 9th, 2006 with all applicants. Explanations were provided to justify the correct answers and eliminate the incorrect answers. All candidates now understand the basics for the correct answers and why their choices were incorrect.

All necessary actions have been completed. This PIR may be closed.