ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

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License No.:	NPF-42
Report No.:	50-482/99-10
Licensee:	Wolf Creek Nuclear Operating Corporation
Facility:	Wolf Creek Generating Station
Location:	1550 Oxen Lane, NE Burlington, Kansas
Dates:	October 5 to 8, 1999
Inspectors:	Stephen L. McCrory, Senior Reactor Engineer, Operations Branch Michael E. Murphy, Senior Reactor Engineer, Operations Branch Frank Brush, Senior Resident Inspector, Project Branch B
Approved By:	John L. Pellet, Chief, Operations Branch, Division of Reactor Safety
ATTACHMENT:	Supplemental Information

EXECUTIVE SUMMARY

Wolf Creek Generating Station
NRC Inspection Report No. 50-482/99-10

This inspection assessed the licensed operators' requalification program to determine whether the program incorporated appropriate requirements for both evaluating operators' mastery of training objectives and revising the program in accordance with 10 CFR Part 55. The licensed operators' requalification program assessment included an evaluation of the program's controls to assure a systems approach to training, and evaluation of operating crew performance during annual requalification examinations. This included review of facility documents and the 1998 biennial written examination, observations of a shift crew and a staff crew during dynamic simulator scenarios and plant walkthroughs, and assessment of licensee evaluators' effectiveness in conducting examinations.

Operations

- Crews and individual licensed operators demonstrated good operational knowledge and ability to fulfill their licensed duties to protect public health and safety. The operators exhibited consistent performance among shift crews, staff crews, and on-shift operations. (Section O4.1)

- The licensee prepared written and operating examinations that adequately measured operator knowledge and ability to certify continuing proficiency to protect public health and safety and for license renewal. The licensee's evaluators professionally and competently administered the operating examinations. They rigorously and thoroughly evaluated crew and operator performance to arrive at accurate pass/fail determinations. The licensee's use of "as found" evaluations was notably effective in early detection and correction of crew and individual weaknesses through an effective remedial training program. (Sections O5.1 through O5.4)

Report Details

Summary of Plant Status

The facility operated at 100 percent of full power throughout the inspection.

I. Operations

O4 Operator Knowledge and Performance

04.1 Operator Performance on Annual Requalification Examinations

a. Inspection Scope (71001)

The inspectors observed the performance of one shift crew and one staff crew during the dynamic simulator and job performance measure portions of the annual requalification examination. The inspectors compared this performance with that observed in the control room during normal operations and event response.

b. Observations and Findings

The inspectors observed a shift crew and a staff crew in the dynamic simulator examination. The shift crew contained three senior operator licensed individuals and two reactor operator licensed individuals. The staff crew, as evaluated, contained three senior operator licensed individuals and two reactor operator licensed individuals. However, it had been reconstituted for examination purposes due to personal emergencies for two of the crew members. The licensee substituted operators recently licensed following the July 1999 initial license examinations. The staff individuals being evaluated were both senior operators.

Both crews responded promptly and effectively to abnormal and emergency events. The crews routinely referred to procedures while responding to various plant conditions. The crews communicated effectively and consistently met licensee performance expectations with regard to communication discipline, procedure use, self verification, peer checks, and supervisory oversight. The shift supervisors implemented the emergency plan, as appropriate to the scenario content, through the point of filling out the initial notification forms. The shift supervisors used the correct emergency action levels to make timely and appropriate emergency classifications. The shift supervisors completed the notification forms in time to allow initial notifications to be made within 15 minutes of the event classification.

The inspectors observed crew and individual performance similar to that exhibited in the recent initial operator licensing examinations (NRC Inspection Report 50-482/99-301). The senior resident inspector observed the response of control room operators to an actual reactor trip on August 5, 1999 (NRC Inspection Report 50-482/99-13). The report cited prompt diagnosis, effective operator response, good procedure use, good application of human performance standards for communications and peer checks, and good supervisory oversight and control.

c. Conclusions

Crews and individual licensed operators demonstrated good operational knowledge and ability to fulfill their licensed duties to protect public health and safety. The operators exhibited consistent performance among shift crews, staff crews, and on-shift operations.

O5 Operator Training and Qualification

O5.1 Review of Requalification Examinations

a. Inspection Scope (71001)

The inspectors reviewed the annual requalification examinations, which consisted of the operating tests, to evaluate general quality, construction, and level of difficulty. The inspectors reviewed the written examinations administered during the 1998 biennial requalification examination. The inspectors also reviewed the methodology for developing the requalification examinations and discussed various aspects of examination development and security with members of the licensee's training staff.

b. Observations and Findings

The inspectors determined that the written examinations adequately sampled the training provided in the 2-year requalification training cycle and tested at the appropriate level of comprehension. The requisite number of questions was taken from subjects not in that training period. The questions were operationally oriented and realistic. The inspectors reviewed questions from Weeks 1, 2, and 4 of the written examinations and found that reuse of items complied with the licensee's administrative limits.

The inspectors reviewed 8 simulator scenarios (4 scenario sets) and 24 job performance measures used to administer the annual operating examination for Weeks 1 through 3 of the 1999 annual operating examination cycle. The scenario sets conformed to the qualitative and quantitative guidelines found in NUREG 1021, "Operator Licensing Examination Standards," Interim Revision 8, Form ES-604-1. Each set had multiple post-trip malfunctions that compounded the recovery and often required the use of functional recovery emergency operating procedures.

During the first week of the annual operating examination, the licensee administered the same two scenarios to two different crews (one shift crew and one staff crew) 2 days apart (September 21 and September 23, 1999). Procedure AI 30B-006, "Licensed Operator Requalification Examinations Guidelines," Revision 6, stated in Step 6.1.2.7:

> "No exam scenario should be used more than three times during the examination cycle; nor should it be used within the same exam week for different crews."

The licensee responded that this was a conscious decision influenced by the need to generate several new scenarios due to a change in the simulator software. The licensee reviewed its security measures to prevent compromise and determined that the likelihood of compromise was acceptably low. The licensee reviewed the examination evaluations of the crews and detected no evidence of compromise. The licensee noted that the second crew to receive the scenarios had more difficulty with at least one of the events than the first crew. The inspectors reviewed the evaluation information and agreed that there was no evidence of compromise. The licensee stated that it was its intent to prevent a similar recurrence and informed the inspectors that a problem identification report would be generated after the examination cycle was completed.

The inspectors observed that the job performance measures used in the first 3 weeks of the annual operating examination cycle were of similar quality to those developed by the licensee for the initial license examinations administered in July 1999 (NRC Inspection Report 50-482/99-301). The job performance measures adequately evaluated operators' system and component operation ability on diverse safety-related systems and equipment. The inspectors noted that no job performance measures had been reused during any of the first 3 weeks of the examination cycle.

c. Conclusions

The licensee prepared written and operating examinations that adequately measured operator knowledge and ability to certify continuing proficiency to protect public health and safety and for license renewal. The licensee used scenario sets that were appropriately challenging. The licensee's reuse of scenarios during the first week of the annual examinations was anomalous and did not result in a compromise.

O5.2 Examination Administration

a. Inspection Scope (71001)

The inspectors observed the licensee's evaluators administer the dynamic simulator scenarios and plant walkthrough portions of the operating examination. The inspectors observed the licensee's post-examination evaluations of the scenarios and reviewed evaluator write-ups of the plant walkthrough.

b. Observations and Findings

The licensee evaluators exhibited high sensitivity toward maintaining examination security during the administration of the examinations. Evaluators or other security monitors maintained direct oversight of each examinee throughout the examinations. The pre-examination brief to the examinees directed them to not discuss any part of the examination with anyone else (outside their crew) until the examination cycle was completed.

At the end of each scenario, the lead evaluator conducted a brief review of crew and individual performance with regard to the pre-identified critical tasks. During that review, the lead evaluator frequently consulted the procedural guidelines to keep the review focused. Part of the review provided feedback to the operations manager (who

observed the crew performance from the simulator booth) regarding crew and individual performance against management expectations for communication, procedure use, and other operations department performance policies.

At the end of the scenario set, the evaluation team met and reviewed the crew and individual performance. The evaluators used crew and operator competency evaluation forms similar to those contained in the ES-600 Series of NUREG-1021. The evaluators thoroughly discussed and processed the performance of crew and individual for each scenario for all competencies. The evaluators provided justification for all performance grades below fully satisfactory. They also provided comments on notably good performance. The licensee evaluators assessed both crews and all operators as passing with which the inspectors agreed.

During administration of the walkthrough examinations, using job performance measures, the evaluators performed in a competent and professional manner. They gave clear instructions to the examinees and provided appropriate verbal cues during simulated tasks. The evaluators determined that all examinees passed the walkthrough examination. The inspectors reviewed the examination results and agreed with the evaluators' determinations.

c. Conclusions

The licensee's evaluators professionally and competently administered the operating examinations. They rigorously and thoroughly evaluated crew and operator performance to arrive at accurate pass/fail determinations.

O5.3 Review of Requalification Feedback Process

a. Inspection Scope (71001)

The inspectors verified the licensed operator requalification training program effectively incorporated feedback (e.g., assessments of operator performance, plant events, and industry events) into the training. The inspectors assessed both the methods and effectiveness of the feedback process.

b. Observations and Findings

The inspectors determined that various avenues were available to the employees to provide input related to written materials, simulator scenarios, job performance measures, procedures, and job tasks. The licensee reviewed plant operating events, as well as, industry events were reviewed for possible feedback material. The inspectors' review of actual feedback documentation determined that feedback comments were appropriately dispositioned, as evidenced, in part, by changes to lesson plans and examination material. During interviews, licensed operators indicated that the feedback program was thorough and effective in addressing concerns. The inspectors' review of the plant operating history for the last 2 years did not identify any operator-caused events that required a change in the training program.

c. Conclusions

The licensee continued to implement an effective feedback program within its overall systems approach to training.

O5.4 Review of Requalification Remediation Process

a. Inspection Scope (71001)

The inspectors reviewed the licensee's remedial actions for licensed operators for the years 1997 through 1999.

b. Observations and Findings

The inspectors noted that only one licensed operator failed any portion of the 1998 annual operating examination and biennial written examination. The operator failed the operating examination and successfully completed the remedial training and passed the retake examination. The inspectors observed that same operator in the dynamic scenarios during the inspection week and determined that the operator performed satisfactorily with no significant weakness.

The inspectors noted that 29 of 37 remedial action documents, generated over a 2-year period, related to "as found" simulator examinations. ("As found" refers to evaluated scenarios being given to a crew at the start of a training-cycle week and before the beginning of focused training.) Nine crews and 22 individuals failed the "as found" simulator examinations. Most of the individual remediations stemmed directly from crew failures. In virtually all cases, the licensee removed the crews or individuals from licensed duties until the remediation and re-examination were completed. The licensee stated that it had reviewed this performance information and found no generic issues for either crews or individuals. The inspectors reviewed the crew and individual performance information and agreed with the licensee's determination. Further, the inspectors observed that the licensee held crews and individuals to a higher performance standard than was necessary to satisfy regulatory requirements.

c. Conclusions

The licensee implemented an effective remedial training program. The licensee's use of "as found" evaluations was notably effective in early detection and correction of crew and individual weaknesses.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on October 8, 1999. The licensee's management acknowledged the findings presented. No proprietary information was identified.

ATTACHMENT

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

M. Angus, Manager, Licensing and Corrective Action
R. Muench, Vice President Engineering
M. DeLaCruz, Superintendent, Mechanical Maintenance
J. Dodge, Supervisor, Outage
R. Flannigan, Manager, Nuclear Engineering
D. Fehr, Manager, Administrative Services
T. Garrett, Manager, Design Engineering
S. Hedges, Superintendent, Operations
K. Hughes, Licensing
D. Jacobs, Manager, Support Engineering
T. Jensen, Manager, Chemistry
L. Jones, Superintendent, Maintenance Support
D. Knox, Manager, Maintenance
G. Lawson, Superintendent, Maintenance Planning
P. Martin, Superintendent, Plant Scheduling
O. Maynard, President and Chief Executive Officer
B. McKinney, Vice President Operations and Plant Manager
K. Moles, Manager, Information Services
T. Morrill, Assistant Manager, Human Resources
J. Pippin, Manager, Training
C. Rich Jr, Superintendent, Instrument and Calibration
E. Schmotzer, Manager, Purchasing and Material Services
C. Younie, Manager, Operations

INSPECTION PROCEDURE USED

71001	Licensed Operator Requalification Program Evaluation

DOCUMENTS REVIEWED

Procedures

AP 30B-001, "Licensed Operator Requalification Training Program," Revision 2
AP 30E-002, "Training Effectiveness Evaluation Program," Revision 5
AI 30B-006, "Licensed Operator Requalification Examination Guidelines," Revision 6
AI 30E-006, "Training Impact System," Revision 2

Miscellaneous

License Operator Requalification 1998 Annual Examination Report
1999 Licensed Operator Requalification Sample Plan, August 19, 1999
1998 Licensed Operator Requalification Sample Plan, July 15, 1998
1998 Licensed Operator Requalification Biennial Written Examinations
Licensed Operator Remedial Training Records, 1997-1999

Requalification Simulator Exam Scenarios:

#70-24, 9/17/99
#70-25, 9/17/99
#70-23, 9/27/99
#70-27, 9/27/99
#70-26, 9/27/99
#70-28, 10/1/99
#70-18, 10/1/99
#70-19, 10/1/99

Job Performance Measures:

C-060-B-C, "Perform KC-008 Daily Status Check," Revision 15
J-086-B-C, "Manual M/U to the VCT," Revision 0
T-119-B-P, "Energize 125 VDC Charger NK21," Revision 1
A-135-B-P, "Perform Local Actions for Immediate Boration (ASP)," Revision 6
J-914-S-C, "Classify an Event using the Emergency Plan," Revision 1
A-141-B-C, "Locally align CCW to PASS," Revision 14
C-071-B-C, "Operate the ECCS in the Recirculation Mode," Revision 5
C-093-B-C, "Respond to Containment Flooding," Revision 1
A-132-B-P, "Vent affected RHR Trains after a loss of S/D Cooling," Revision 11
T-154-B-P, "Shift NK24 to Swing Charger NK26," Revision 0
T-156-B-P (ASP), "Shift Lead Dryer Trains when both trains are in Auto," Revision 1
C-088-B-C, "Return Condenser Air Removal to Normal," Revision 0
J-924-S-C, "Classify an Event using the Emergency Plan," Revision 0
A-133-B-P, "Perform Local Actions for Immediate Boration (ASP)," Revision 12
T-155-B-P, "Place Instrument Air Compressor CKA01C in Lead," Revision 1
C-027-B-C(ASP), "Respond to a Radiation Monitor Alarm," Revision 8
C-045-B-C, "Operate the CVCS to Make-up to the RWST," Revision 2
C-081-B-C, "Bypass Trips for a failed Power Range Detector," Revision 11
J-908-S-C, "Classify an Event using the Emergency Plan," Revision 2
C-053a-B-C, "Perform STS SF-001 For the shutdown banks," Revision 0
C-067-B-C, "RCS Cooldown during an STGR using ARVs," Revision 0
T-116-B-P, "Transfer a vital 120 VAC instrument power supply," Revision 2
A-134-B-P, "Perform local actions for emergency boration (ASP)," Revision 0
J-905-S-C, "Classify an event using the emergency plan," Revision 1