ENCLOSURE 1

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Operator Licensing Examination Report: 50-482/OL 90-01

Operating License: NPF-42

Docket No: 50-482

Licensee: Wolf Creek Nuclear Operating Corporation

Facility Name: Wolf Creek Generating Station

Examination at: Wolf Creek Generating Station

Examinations Conducted: October 22 through November 2, 1990

Chief Examiner: _____ 12/31/90
J. M. Keeton, Examiner, Operator Licensing Section, Division of Reactor Safety — Date

Approved by: _____ 1/2/91
J. L. Pellet, Chief, Operator Licensing Section, Division of Reactor Safety — Date

Summary

NRC administered requalification examinations to 15 senior reactor operators (SRO) and 7 reactor operators (RO) licensed to operate the WCNOC facility. The purpose of these examinations was to evaluate the effectiveness of the WCNOC requalification training program in maintaining the competency and currency of licensed operators and to satisfy the requirement for renewal of licenses of the individuals examined. As a result, 3 reactor operators (2 on-shift and 1 staff) and 5 senior reactor operators (2 on-shift and 3 staff) failed the examination. With failure of eight of twenty-two individuals, the requalification training program was evaluated as unsatisfactory in accordance with NUREG-1021, "Operator Licensing Examiner Standards," Revision 6, Section 601.

Although the program did not meet the criteria of a satisfactory program based on individual operator performance, NRC noted only minor deficiencies in test items (written questions, job performance measures, and dynamic simulator scenarios) developed and submitted for preparation of the examinations. These

deficiencies have been discussed in detail with members of the training staff during preparation and administration of the examinations. The evaluative ability of the WCNOC training staff and the more restrictive pass/fail criteria established by the facility was viewed by NRC to be positive and was taken into consideration when considering consequences of the unsatisfactory program evaluation.

A letter containing justification for continued operation and proposed changes to operating crews was provided to NRC by WCNOC management following the exit meeting on November 2, 1990. The context of the letter was presented at the meeting.

Because of the unsatisfactory program evaluation, operating evaluations were conducted on November 7 and 8, 1990, in accordance with NUREG-1021, Revision 6, ES-601. The purpose of these evaluations was to determine if WCNOC could continue safe operations with the reduced crew staffing and crew reconstitution dictated by removal from licensed duties of those individuals who had failed the requalification examination. NRC concluded that short term operations could continue but concurrence would be required if any substantial change was made to the proposed crew configuration.

On November 18, 1990, NRC received a request from WCNOC that five of the individuals who had failed the operating section of the requalification examination be given a reexamination for return to licensed duties with NRC concurrence. Based on documentation of the remediation provided for each individual and a review of the proposed reexamination, NRC agreed to observe the reexamination on November 21, 1990. As a result, concurrence was granted to return four of the five individuals to licensed duty with the stipulation that these individuals were subject to reevaluation during a NRC-administered requalification examination prior to license renewal.

On December 6, 1990, a management meeting was in the Region IV office. The licensee presented their root cause analysis and corrective actions to improve training effectiveness. NRC concluded that the proposed actions appear to be adequate to correct the identified root causes.

Based on the sequence of events since determining that WCNOC's requalification program was unsatisfactory, NRC will evaluate your implementation of proposed corrective actions in three phases. Phase one, NRC will conduct an inspection of the training program early in 1991. Phase two, following remediation of the remainder of those who failed the examination, NRC reexaminations will be administered by late April, 1991. Phase three, the requalification program will be reaudited in August, 1991. A minimum of twelve licensed operators (at least three crews) who have not taken the NRC administered requalification examination will be required for program reevaluation.

DETAILS

1. PERSONS EXAMINED

		CREW	SRO	RO
Requalification Examinations:	Pass -	5	10	4
	Fail -	0	5	3

2. EXAMINERS

J. M. Keeton, Chief Examiner
K. M. Kennedy
M. A. Satorius
M. E. Ernstes
J. E. Whittemore

3. EXAMINATION REPORT

Performance results for individual examinees are not included in this report because examination reports are placed in the NRC Public Document Room as a matter of course. Individual performance results are not subject to public disclosure.

3.1 Examination Material

Test items for the written, simulator, and walk-through examinations were submitted to the NRC as prescribed by NUREG-1021, Operator Licensing Examiner Standards Section 601 (ES-601).

3.1.1 Written Examination Items

NRC noted only minor problems in written questions developed and submitted for preparation of the examinations. The facility written exam bank contained more that the required number of questions. The majority of the questions submitted were short answer questions rather than multiple choice or matching. During exam preparation, most of those questions that were chosen for the examination were revised to multiple choice format although this was not required for this examination. Only minor technical and construction errors were found during review of the examination bank. The problems found have been discussed in detail with members of the training staff during preparation and administration of the examinations. The training staff stated that they were in the process of converting all items in the examination question bank to the objective format to meet the requirements of future Revision 6 examinations.

3.1.2 Job Performance Measures (JPMs)

The facility JPM bank contained more than the required number of JPMs. During the preexamination review, all JPMs selected for the examination required some modification prior to use. The most notable changes required were to the identification of critical steps and examiner cues. Also, some of the post-

task questions required replacement or revision. All deficiencies were discussed in detail with members of the training staff during preexamination and examination activities.

NRC noted that the facility is actively pursuing the use of JPMs for training. The mechanism for flagging procedure revisions and plant modifications that require changes to the JPMs appears to be an efficient process.

3.1.3 Dynamic Simulator Scenarios

The scenarios developed by the facility were sufficient for examination use. Minor changes were made to enhance the evaluation effectiveness of some scenarios. Individual simulator critical tasks (ISCTs) were mostly found to be of higher order and only minimal changes were necessary. All changes were mutually agreed on by NRC and the facility training staff.

3.2 Examination Administration

3.2.1 Written Examinations

Written examinations were administered to 22 examinees. Two reactor operators and one senior reactor operator failed the examination. Facility grading was more conservative than NRC grading and resulted in two additional failures that were marginal NRC passes.

3.2.2 Plant Walkthrough Examinations

Plant walkthrough examinations were administered to 22 examinees in the form of JPMs. Each examinee performed 10 complete JPMs. All examinees passed the NRC examination. The NRC and facility agreed on the NRC grading but the facility failed one examinee who was marginally passed by the NRC.

3.2.3 Dynamic Simulator Examinations

Dynamic simulator examinations were administered to 22 examinees composing five crews. All crews were passed by the NRC based on the NRC grading criteria, but one crew was failed by the facility in accordance with their more stringent performance criteria.

The NRC failed five individuals on the simulator examinations based on missed or misperformed ISCTs. The facility grading was in agreement on all NRC failures. The facility evaluators failed two additional individuals based on facility performance standards other than pre-identified ISCTs.

3.2.4 Observed Operator Performance

3.2.4.1 Performance Weaknesses

Although the individual failures could not be attributed to a common cause, the examiners noted poor performance in several areas. These areas included

control board manipulation, event diagnosis and use of emergency operating procedures, and basic knowledge of system response and interaction. The weaknesses were not unique to those individuals who failed the examination as others who marginally passed exhibited the same weaknesses.

Four of the five crews examined on the dynamic simulator had some difficulty with manipulation of the steam generator level control system and the steam dump system. In all but one case, the crew was able to compensate for individual error or knowledge gap exhibited by the operator at the control board.

The difficulties with event diagnosis and use of emergency operating procedures were observed during the dynamic simulator evaluations and on the written examinations. Again, the difficulties did not appear to be unique to those who failed the examination, but were also evident to a lesser degree for some of those who passed the examinations.

A common thread linking the above observations and the written examinations was the apparent incomplete understanding of system interactions. This could be attributed to a lack of reinforced knowledge of systems and basic theory of operation.

3.2.4.2 Crew Communications

Communications effectiveness and formality varied significantly between crews. Some crews exhibited open ended communications, i.e., failure to acknowledge reports or to repeat back directives. This caused delays in performing appropriate corrective actions and caused confusion among crew members.

3.2.4.3 Emergency Plan Implementation

Emergency action level classification and initial emergency plan implementation by senior operators was accurate and timely. The dynamic scenarios were developed to provide a broad scope of emergency action levels required.

3.2.5 Observed Facility Evaluator Performance

Facility evaluator performance in all phases of the examinations was satisfactory. They exhibited minor deficiencies typical of individuals whose normal job is training rather than evaluating. They were responsive and effective in correcting deficiencies when pointed out by NRC examiners.

3.2.6 Examinee Stress

Facility evaluators appeared to be appropriately sensitive to examinee stress. Adjustments were made to the schedule and administrative process when it was apparent that examinee stress could be reduced.

3.3 Program Evaluation Criteria and Process

The evaluation of the facility requalification program was made using the guidance and criteria of NUREG-1021, ES-601, Revision 6. The areas that were evaluated included examination materials development, a comparison of NRC and facility grading, facility evaluator performance, crew performance, and individual operator performance. All areas were judged to be satisfactory except for individual performance.

In accordance with the standard, at least 75% of the individuals must pass the NRC grading of the examination for the program to be judged satisfactory. The pass percentage was only 64%; thus, the requalification program was required to be declared unsatisfactory.

3.4 Site Visit Summary

The NRC held an exit meeting with members of the facility licensee staff. The following personnel were present at the exit:

NRC	Facility Licensee	
J. Callan	J. Bailey	J. Gilmore
J. Pellet	G. Boyer	H. Chernoff
J. Keeton	J. Weeks	J. Pippin
M. Satorius	J. Zell	G. Smith
M. Skow	D. Fehr	L. Stevens
L. Gundrum	O. Maynard	S. Wideman

The facility representatives were told that the requalification program evaluation was UNSATISFACTORY based on individual operator performance. Specifics related to requalification examination material were not discussed since these had been reviewed in detail with the training staff during examination development and administration and are addressed throughout this report.

NRC explained the consequences of an unsatisfactory program evaluation and the process required for remediation and reevaluation. Justification for continued operation and proposed changes to operating crews was presented to NRC by WCNOC management at the exit meeting. A letter stating justification and detailing the proposed crew roster was sent to NRC following the exit meeting. The licensee committed to performing a root cause determination and providing both short-term and long term corrective actions to redress their programmatic deficiencies and improve their future performance.

NRC reviewed the licensee's letter justifying continued operation letter and the results of the licensee requalification examinations conducted during the four weeks prior to the NRC examination. Based on the evaluative ability of the WCNOC training staff and the more restrictive pass/fail criteria established by the facility, NRC concurred with the licensee assessment that safe operation could continue until an operations evaluation could be performed.

Arrangements were made to conduct operations evaluations on the week of November 5, 1990, to evaluate the performance of all crews except the one crew that was passed by the NRC intact on the initial examination.

3.5 Simulation Facility Fidelity Report

The Simulation Facility Fidelity Report is Enclosure 2 of this document. There were no notable simulator deficiencies identified on this visit.

ENCLOSURE 2

SIMULATION FACILITY FIDELITY REPORT

Operator Licensing Examination Report: 50-482/OL-90-01

Operating License: NPF-42

Docket No: 50-482

Licensee: Wolf Creek Nuclear Operating Corporation

Facility Name: Wolf Creek Generating Station

Examination at: Wolf Creek Generating Station

Examinations Conducted: October 22 through November 2, 1990

This report does not constitute an audit or inspection and is not, without further verification and review, indicative of non-compliance with 10 CFR 55.45(b). These observations do not affect NRC certification or approval of the simulation facility other than to provide information which may be used in future evaluations. No licensee action is required in response to these observations.

During the conduct of the simulator portion of the operating tests identified above, the following apparent performance and/or human factors discrepancies were observed:

NONE

ENCLOSURE 3

WOLF CREEK
NUCLEAR OPERATING CORPORATION

John A. Bailey
Vice President
Nuclear Operations

November 2, 1990

NO 90-0282

R. D. Martin, Regional Administrator
U. S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, TX 76011

Subject: Docket No. 50-482: NRC Licensed Operator Requalification Evaluation Program

Dear Mr. Martin:

The purpose of this letter is to provide confirmation of the actions being taken by Wolf Creek Nuclear Operating Corporation (WCNOC) as a result of the NRC's licensed operator requalification program evaluation conducted during the period October 22 through November 2, 1990. This letter was requested by Mr. L. J. Callan, NRC, during a meeting on November 2, 1990.

Although the requalification program has been determined by the NRC to be unsatisfactory, the results of the WCNOC examiners evaluations of the written, walkthrough and simulator examinations were consistent with or more conservative than, the NRC examiners evaluations. WCNOC's conservative application of the examination standards provides a high degree of confidence that WCNOC examiners are capable of effectively evaluating licensed operators.

All licensed operators and crews examined, remediated, and re-examined during this requalification cycle were evaluated by the same group of WCNOC examiners with the same degree of conservatism. Based on the examination results, WCNOC has temporarily eliminated one shift crew and is establishing a five shift rotation. The composition of four crews will remain the same. The fifth crew is being reconstituted from two existing crews. All of the individuals chosen for this fifth crew successfully passed the NRC administered requalification examination. In order to ensure that these individuals can safely operate as a team, they will be given a dynamic simulator examination prior to serving as a crew in the plant. This examination will consist of two scenarios evaluated by WCNOC examiners and the Manager Operations. In addition, to support the above shift rotation, WCNOC is delaying resumption of the college program. This will allow the most experienced individuals to remain on shift. The above provides assurance that shift crews can continue to operate WCGS in a safe and responsible manner.

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The individuals that require re-examination will not be returned to control room watch standing activities without NRC concurrence.

It is WCNOC's understanding that the NRC examiners will return the week of November 5, 1990 to confirm the performance of WCNOC's operating crews.

WCNOC will perform a critical self-assessment of the licensed operator requalification program to identify the root cause of the examination failures. The results of this self-assessment will identify the corrective actions required to restore the requalification program to a satisfactory status. A management meeting to discuss the results of this self-assessment will be scheduled with members of your staff in late November or early December.

If you have any questions concerning this matter, please contact me or Mr. H. K. Chernoff of my staff.

Very truly yours,

John A. Bailey

John A. Bailey
Vice President
Nuclear Operations

JAB/jra

cc: A. T. Howell (NRC)
D. V. Pickett (NRC)
M. E. Skow (NRC)
Document Control Desk (NRC)

ENCLOSURE 4

OPERATIONS EVALUATION SUMMARY
Wolf Creek Generating Station

On November 2, 1990, NRC determined that the Wolf Creek Nuclear Operating Corporation requalification training program was unsatisfactory based on failure of 8 of 22 individuals during the NRC administered recualification examinations conducted during the previous two weeks.

Because of the unsatisfactory requalification program evaluation, operating evaluations were conducted on November 7 and 8, 1990, in accordance with NUREG-1021, Revision 6, ES-601. The purpose of these evaluations was to determine if WCNOC could continue safe operations with the proposed crew reconstitution dictated by removal from licensed duties those individuals who had failed the requalification examination.

A NRC examination team consisting of J. Pellet, J. Keeton, K. Kennedy, and W. Dean performed operating evaluations for four crews at the WCNOC simulator. Dynamic simulator scenarios were developed to focus the evaluations on the areas of identified weaknesses in crew operations. The scenarios were selected such that none of the individuals had been exposed to the specific sequence of events during their previous evaluations.

Prior to the examinations, the crews were briefed on the purpose of the evaluations. They were told that they were being evaluated as a team rather than on individual performance in an effort to reduce individual stress. Overall performance of the crews was judge to be satisfactory by the NRC examination team as well as the facility examination team.

On November 8, 1990, an exit meeting was conducted with the following persons in attendance:

NRC	Facility	
J. Pellet	B. Withers	D. Fehr
J. Keeton	J. Bailey	J. Gilmore
K. Kennedy	G. Boyer	S. Wideman
W. Dean	J. Weeks	G. Smith
M. Skow	J. Zell	E. Taylor

NRC concluded that operations could continue with the following caveats. Concurrence would be required to return any individual to licensed duty who had failed the NRC requalification examination, including those who were passed by the NRC but failed by the facility. Concurrence would also be required if a "substantial change" was made to the proposed crew configuration. Substantial change was defined as changing more than one individual on a crew except in emergency situations.

ENCLOSURE 6
NOV 20 1990

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

Wolf Creek Nuclear Operating Corporation
ATTN: Bart D. Withers
President and Chief Executive Officer
P.O. Box 411
Burlington, Kansas 66839

Gentlemen:

This responds to your letter of November 18, 1990, requesting [illegible]ersight of the re-examination of five licensed operators who failed to [illegible] successfully the dynamic simulator portion of requalification. It also [illegible] the telephone conference call held among representatives of NRR, WCNOC, [illegible] IV on November 20, 1990.

We agree that you may conduct dynamic simulator re-examinations of [illegible]ive individuals as described in your letter of November 18. We shall provide observer for these re-examinations, which are to be conducted No[illegible] 21 [illegible]or those five persons re-examined, you may return to licensed duti[illegible] you determine have passed the re-examination, provided that our obse[illegible] does not disagree with your "pass" determination. The use onshift of any of the five individuals who "pass" the re-examination shall be as described in your letter. Our observer for the November 21 re-examinations will be Mr. John Pellet of this office.

All individuals who failed an NRC administered examination are still subject to an NRC administered re-examination at some time in the future. This letter concurs with your re-examination of five candidates and potentially allows for them to be returned to licensed duties prior to the NRC administered re-examination.

Sincerely,

Original Signed By:

John M. Montgomery for

Robert D. Martin
Regional Administrator

cc:
Wolf Creek Nuclear Operating Corp.
ATTN: Gary Boyer, Plant Manager
P.O. Box 411
Burlington, Kansas 66839

RIV:DD:DRS	D:DRS	RA
JPJaudon;lt	LJCallan	RDMartin
11/20/90	11/20/90	11/20/90

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