

ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

Docket No.: 50-397  
License No.: NPF-21  
Report No.: 50-397/96-25  
Licensee: Washington Public Power Supply System  
Facility: Washington Nuclear Project-2  
Location: 3000 George Washington Way  
Richland, Washington  
Dates: December 9-13, 1996  
Inspectors: M. E. Murphy, Reactor Engineer  
S. L. McCrory, Reactor Engineer  
T. O. McKernon, Reactor Engineer  
Approved By: J. L. Pellet, Chief, Operations Branch  
Division of Reactor Safety

ATTACHMENTS:

Attachment 1: Supplemental Information  
Attachment 2: Simulation Facility Report

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## EXECUTIVE SUMMARY

### Washington Nuclear Project-2 NRC Inspection Report 50-397/96-25

This inspection evaluated the licensed operator requalification program to determine whether the program incorporated appropriate requirements for evaluating operators' mastery of training objectives in accordance with 10 CFR 55.59(c). The licensed operator requalification program assessment included an evaluation of the program's controls to assure a systems approach to training, and evaluation of operating crews' performances during biennial requalification examinations. This included review of the facility documents, observation of operating crews during dynamic simulator scenarios and plant walkthroughs, and an assessment of the examination evaluators' effectiveness in conducting examinations. The inspection also evaluated the plant referenced dynamic simulator used to conduct the examinations.

#### Operations

- In general, licensed operators exhibited good knowledge and ability in all aspects of the requalification examinations. Operator performance in the simulator was consistent with operations management expectations for control room performance (Section 04.1).
- Overall, all portions of the examinations were well constructed, properly focused and appropriately challenging. However, the lack of procedurally imposed detailed guidelines for examination development, administration, and records control were considered a programmatic weakness (Section 05.1).
- The facility evaluators effectively examined operators to identify deficiencies or weaknesses in the trainees and the training program. The training staff was knowledgeable in the regulatory requirements for requalification. The facility evaluators administered the examinations professionally and in accordance with industry standards (Section 05.2).
- Operators actively provided training feedback and the operations training organization responded to the feedback in a timely and effective manner (Section 05.3).
- The licensed operator requalification program adequately applied the existing training department's guidelines and administered remedial training and re-evaluation of the crews and operators when necessary (Section 05.4).



## Report Details

### Summary of Plant Status

The facility operated at full power during the week of the inspection.

### I. Operations

#### 04 Operator Knowledge and Performance

##### 04.1 Operator Performance on Annual Requalification Examinations

###### a. Inspection Scope (71001)

The inspectors observed the performance of two shift crews during the dynamic simulator and job performance measure portions of the annual requalification examination. The inspectors also reviewed the results of the written examination.

###### b. Observations and Findings

During the dynamic simulator and job performance measure portions of the examination, the inspectors observed the following generic behaviors among operators:

- Operators routinely exhibited 3-legged communication with only a few lapses into 2-legged communication.
- Operators routinely referred to procedures when responding to alarms and operating systems and components.
- Operators consistently exhibited self-checking behavior when operating system controls and requested peer checks for selected actions.

The inspectors reviewed the operator responses on the written examinations. All operators passed the written examinations. The inspectors did not detect any generic knowledge weaknesses.

###### c. Conclusions

The inspectors concluded that operators exhibited good knowledge and ability in all aspects of the requalification examinations. Operator performance in the simulator was consistent with operations management expectations for control room performance. Actual control room observations were precluded by the nature of the job performance measure examinations witnessed.



## 05 Operator Training and Qualification

### 05.1 Review of Requalification Examinations

#### a. Inspection Scope (71001)

The inspectors reviewed the annual requalification examinations, which consisted of the written and operating tests, to evaluate general quality, construction, and difficulty level. 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 operating examinations consisted of job performance measures and dynamic simulator scenarios. The job performance measures tasks were operationally important and supported by the facility's job task analysis. Each job performance measure included initial conditions, initiating cues, references, performance standards, criteria for successful completion and identification of critical steps. The inspectors noted the licensee's practice of cuing the candidate for completion of the job performance measure precluded measurement of the candidate's ability to define the given task and recognize its completion. The inspectors' concern with this practice was discussed with the licensee. The licensee agreed to review this methodology and determine if a generic change would be beneficial in the job performance measures. The dynamic simulator scenarios contained realistic initial conditions, clearly stated objectives and related events. The scenarios had multiple instrument and component failures both preceding and following the major transient. The sequence and timing of the events were reasonable and allowed for the evaluators to gather sufficient information on individual and crew actions to arrive at an informed performance rating.

The inspectors noted that the written examinations were appropriately balanced with respect to systems, procedures, and administrative areas. The questions were generally well written. Most questions tested at the application cognitive level. However, during the review of the training department's administrative procedures, the inspectors noted that a generic rule for all training examinations allowed the examination developer to change only 25 percent of the examination from one administration to the next. Interviews with training personnel confirmed this general guideline. The individual assigned to develop the examinations for the 1996 requalification annual examination, however, explained that the actual technique used for this examination changed 25 percent of the original examination each week until the 5th-week examination which was completely different from the 1st week. The licensee closed the examination bank when the test development started and the two complete examinations developed consisted of 25 percent new questions with the remaining questions being substantially changed.



Further review of the licensee's training department administrative procedures revealed that there were no detailed guidelines for examination development and none for the administration of the written examination. There was also a lack of detailed mechanisms for establishing acceptance criteria, documenting evaluations, and controlling the required records to be filed and retained.

c. Conclusions

The inspectors concluded that, overall, all portions of the examinations were well constructed, properly focused and appropriately challenging. However, the lack of procedurally imposed detailed guidelines for examination development, administration, and records control were considered a programmatic weakness.

O5.2 Examination Administration

a. Inspection Scope (71001)

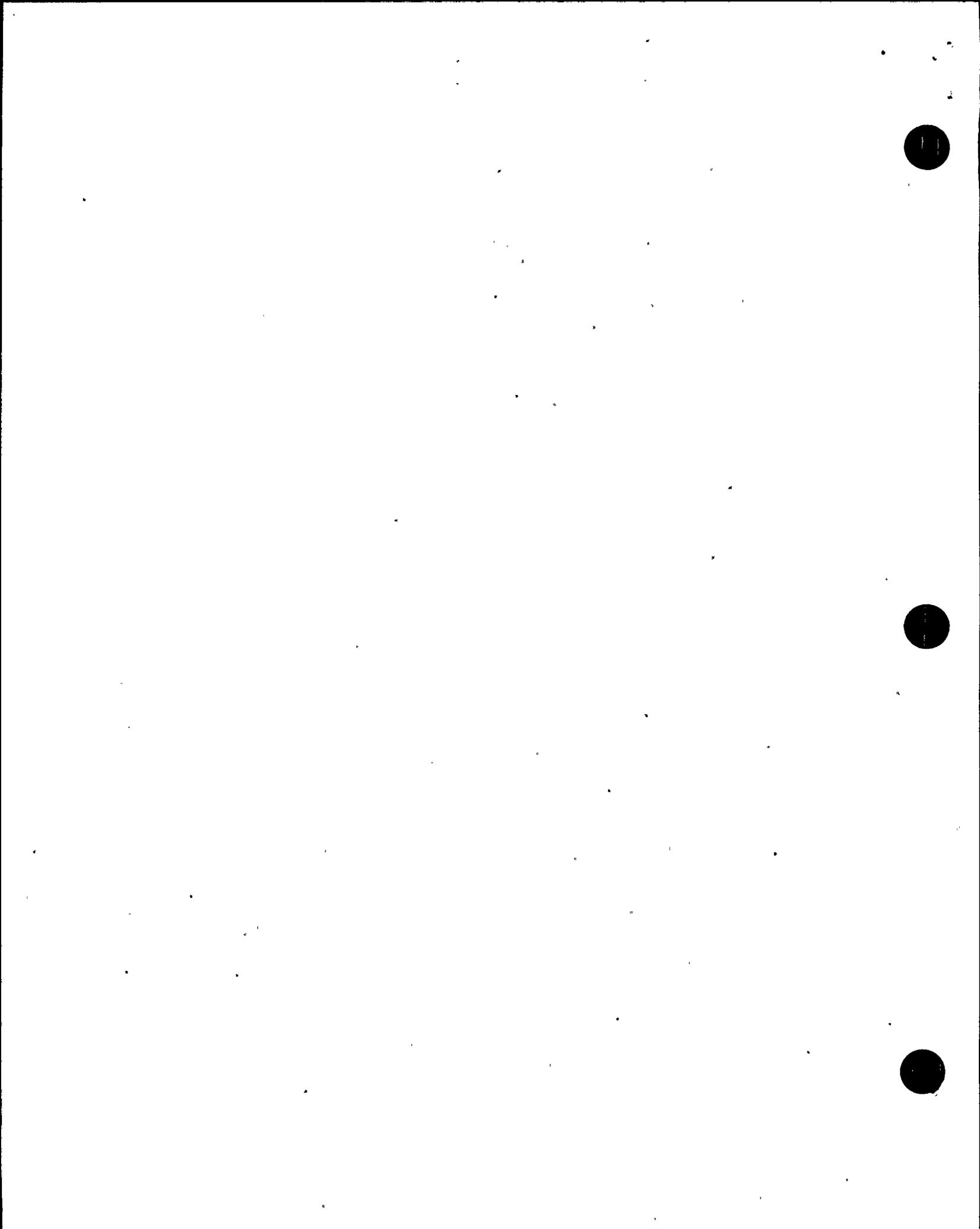
The inspectors observed the administration of all aspects of the requalification examination to determine the evaluators' ability to administer an examination and assess adequate performance through measurable criteria. The inspectors also noted the fidelity of the plant simulator supported training and examination administration. The inspectors observed two operations crews, during conduct of the dynamic simulator scenarios and job performance measure evaluations. Six licensed operator trainers were observed administering the examinations, including pre-examination briefings, observations of operator performance, individual and group evaluations of observations, techniques for job performance measure cuing, and final evaluation documentation.

b. Observations and Findings

The evaluators conducted the examinations thoroughly and professionally, and documented observed weaknesses and areas for improvement. For the job performance measures, the evaluators provided appropriate responses as necessary with no inadvertent cuing. The inspectors attended the post-simulator examination debriefs held by the licensee's evaluators for each of the scenario sets. The debriefs were comprehensive and candid with detailed discussions by each evaluator on relevant subjects. The inspectors noted that the performance of the simulator in supporting the examination process was excellent.

c. Conclusions

The facility evaluators effectively examined operators to identify deficiencies or weaknesses in the trainees and the training program. The training staff was knowledgeable in the regulatory requirements for requalification. The facility evaluators administered the examinations professionally and in accordance with industry standards.



### 05.3 Review of Requalification Feedback Process

#### a. Inspection Scope (71001)

The inspectors verified the methods and effectiveness of the licensed operator requalification training program feedback system.

- b. The inspectors reviewed approximately 310 licensee performance records and documents to assess the nature and effectiveness of the feedback process as a means of revising the licensed operator requalification training program. These documents are listed in Attachment 1, and included end-of-week training meeting minutes, training feedback forms, training advisory group meeting minutes, on-the-job task/evaluation observations, training observations, training assessments/audits, and action item tracking system information. Operators generally expressed satisfaction with the quality of training and the responsiveness of the training organization to specific requests and feedback. The training staff had entered 160 new items into the action item tracking system during 1996 and had completed 272 during the same period. Most of these action items arose from various feedback or operator and training performance reviews. At the time of the inspection, the training staff had about 142 open items of which only about 25 percent were more than 2-years old. The older action items dealt mostly with enhancements to the requalification training.

#### c. Conclusions

The inspectors concluded that operators were actively providing training feedback and that the operations training organization responded to the feedback in a timely and effective manner.

### 05.4 Review of the Remedial Training Program

#### a. Inspection Scope (71001)

The inspectors reviewed the licensed operator remedial training program. This included a review of sample remediations of operators and crew performance weaknesses since the last requalification inspection, remediation plans and interviews with selected licensed operators and training staff personnel.

#### b. Observations and Findings

Training department records of requalification failures and training staff analysis of the crew or operator's weaknesses were sufficiently detailed and directed an appropriate means of remediation. In most instances, remediations consisted of short and long-term remediation plans. When appropriate, individual operators were



removed from licensed operator duties until successful completion of remediation training and a subsequent evaluation. Interviews with selected licensed operators indicated that the remediation process was thorough and comprehensive in addressing weaknesses in operator and crew performances.

c. Conclusions

The licensed operator requalification program adequately applied the existing training department's guidelines and administered remedial training and reevaluation of the crews and operators when necessary.

IV. Engineering

**E2 REVIEW OF THE UPDATED FINAL SAFETY ANALYSIS REPORT COMMITMENTS**

A recent discovery of a licensee operating their facility in a manner contrary to the Updated Final Safety Analysis Report description highlighted the need for a special focused review that compares plant practices, procedures, and/or parameters to the Updated Final Safety Analysis Report descriptions. While performing the inspection discussed in this report, the inspectors reviewed the applicable portions of the Updated Final Safety Analysis Report that related to the areas inspected. The inspectors verified that the Updated Final Safety Analysis Report section for licensed operator requalification training was consistent with the observed plant practices and procedures.

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 December 12, 1996. The licensee acknowledged the findings and did not identify any information as proprietary.

ATTACHMENT 1

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

O. Brooks, Operations Training Liason  
K. Elliott, Training Specialist  
W. Estes, Acting Manager, Operations  
L. Fernandez, Licensing Manager  
R. Guthrie, Training Specialist  
R. Hayden, Training Specialist  
T. Messersmith, Acting Manager, Nuclear Training  
D. Mueller, Training Specialist  
W. Sawyer, Operations  
W. Shaeffer, Superintendent, Operations Training  
G. Smith, Plant General Manager  
D. Swank, Manager, Regulatory Affairs  
G. Weimer, Training Specialist

DOCUMENTS REVIEWED

Reports, Reviews, and Forms

Accreditation Evaluation Report, 2/94  
Cycle 95-5, 95-6 & 95-7 Training Advisory Group Report, 1/11/96  
Cycle 96-4 Training Advisory Group Meeting minutes, 10/21/96  
Operations Training Advisory Group Meeting Supporting Information, 4/24/96  
Audit 296-064, 8/19-9/18/96  
Biennial Evaluation for Operations Training, 1/15-19/96  
Operations Training Program Biennial Review Update, 7/30/96

The following items represent all information obtained by the licensee for the subject area between 12/95 and 12/96:

29 Evaluation/Observation of Training Forms  
67 OJE/OJT SRO/RO Assessment Forms  
5 Crew Evaluation Summaries  
45 Simulator Observation Summaries  
117 Student Course Feedback Forms  
11 Student Post-Training Feedback Surveys  
30 End-of-Week Meeting Minutes  
9 Problem Evaluation Reports concerning Operations events

Procedures

TTM 5.3.2, R9, Licensed Operator Requalification Program Description

TTP 6.10.2, R5, Training Program Material Revision

TTP 6.6.1, R0, Continuous Self-Evaluation Process

OTI 5.5.3, R2, Conduct of Simulator Training and Evaluations

OI-22, Rev. A, Pre-Evolution Briefings

PPM 1.3.60, R0, Verbal Communication Policy

PPM 1.3.1, R27, Conduct of Operations, Department Policies, Programs and Practices

OI-09, Rev. H, Expectations for Supervisory and Peer Oversight

ATTACHMENT 2

SIMULATION FACILITY REPORT

Facility Licensee: Washington Nuclear Project-2

Facility Docket: 50-397

Operating Examinations Administered at: Washington Nuclear Project-2

Operating Examinations Administered on: December 10-12, 1996

These observations constitute inspection findings; however they are not, without further verification and review, indicative of noncompliance 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.

The inspectors did not observe any simulator performance deficiencies.

