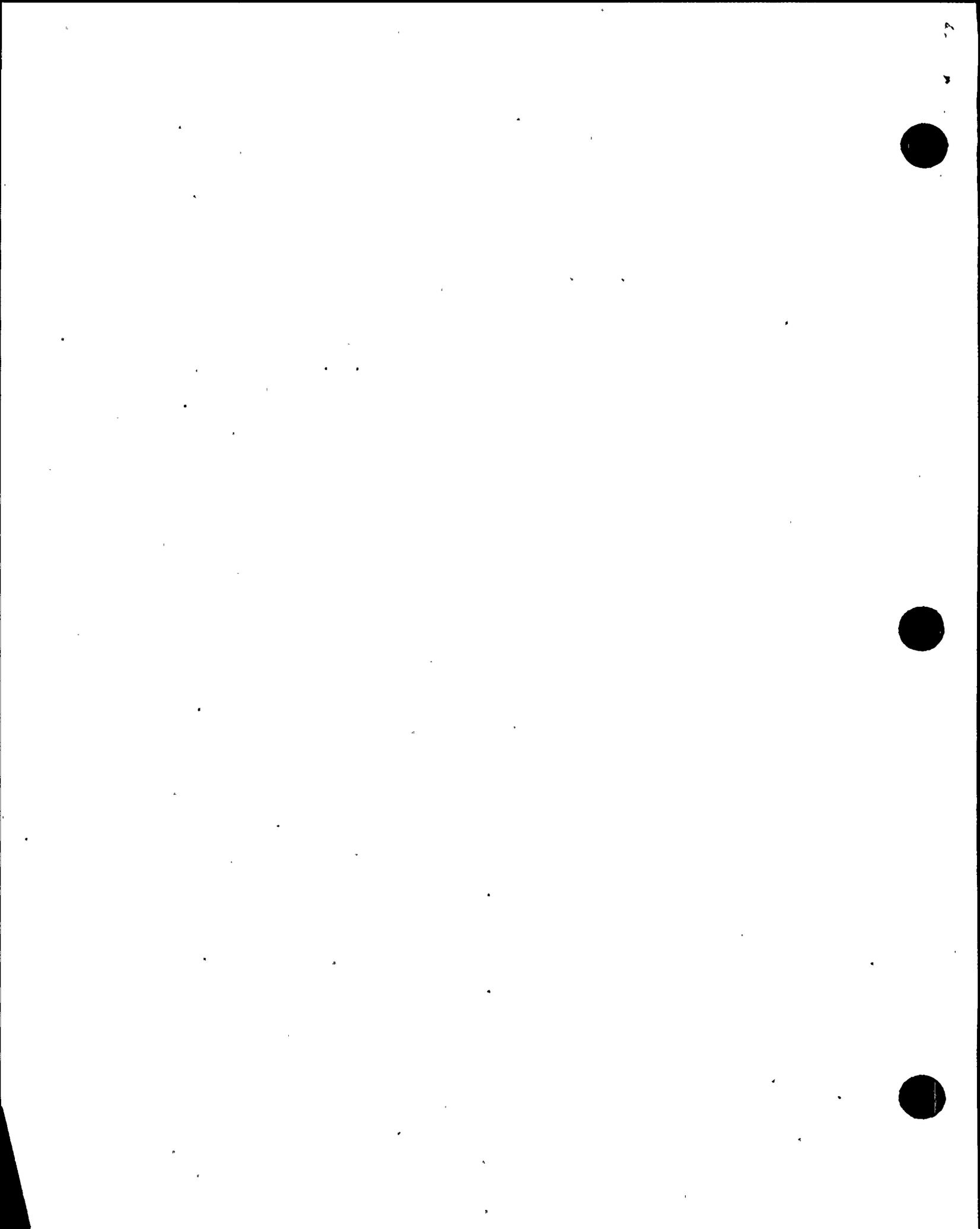


ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.: 50-397
License No.: N.F.-21
Report No.: 50-397/98-24
Licensee: Washington Public Power Supply System
Facility: Washington Nuclear Project-2
Location: Richland, Washington
Dates: December 4-10, 1998
Inspectors: T. O. McKernon, Senior Reactor Engineer, Operations Branch
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Approved By: J. L. Pellet, Chief, Operations Branch
Division of Reactor Safety
Attachment: Supplemental Information

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EXECUTIVE SUMMARY

Washington Nuclear Project-2 NRC Inspection Report 50-397/98-24

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

- A deficiency in the requalification examination development process was identified in that the process does not address the verification of 10 CFR 55.43 sampling for the written requalification examination (Section O5.1).
- A generic operator performance weakness was identified in the area of control board awareness, which involved repeated failures of operators to take appropriate responses to changing plant parameters or system misalignments. Also, inconsistent communications were observed during crew briefings given during the dynamic simulator scenarios (Section O4.1).
- Training staff requalification evaluators performed their tasks in a professional manner and detailed their findings and observations very well in order to support their evaluations (Section O5.2).



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 three-legged communication with only a few lapses into two-legged communication.
- The operators failed to implement good control board awareness and key plant parameter monitoring as evidenced by failing to initiate drywell sprays in a timely manner before reaching 285°F. In the case of one of the crews, this observation had been a repeat finding from previous training cycles and assessments. Further, the inspectors noted that similar control board awareness issues had been salient findings during plant events occurring earlier in the year (e.g., main steam isolation valve closure event, low pressure core spray system misalignment identified during the summer of 1998, and others).
- The crews were inconsistent in their communications during crew briefs. Some control room supervisors were very structured in their briefs, while others were unstructured and infrequent in giving briefs.

The inspectors reviewed the operators' responses on the written examinations. All operators except one passed the written examinations. The inspectors noted a generic emergency operating procedures knowledge weaknesses related to Pump RFW-P-1A nonusage, which would cause an unnecessary pressure reduction and subsequent reactor vessel level reduction and inability to maintain level greater than -192 inches (top of active fuel). It was noted that most examinees missed this question on the written requalification examination. While the revision to the emergency operating procedures had been reviewed during a prior training cycle, weakness in the use of this leg of the emergency operating procedure was evident.



c. Conclusions

The inspectors concluded that operators exhibited a generic weakness related to control board awareness in failing to initiate drywell sprays in a timely manner before reaching 285°F. This observation was considered significant in that the licensee had experienced similar weaknesses in prior plant events during the current calendar year. While corrective actions to review the events in requalification training had been accomplished, they had not been effective in precluding recurrence. Also, inconsistent communications were observed during crew briefings given during the dynamic simulator scenarios.

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 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 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 process controls for the written examination development did not ensure for the verification of 10 CFR 55.43 representative sampling. Interviews with training personnel confirmed that the examination was developed by sampling from the 2-year requalification training plan, which resulted in three of the seven categories sampled. The inspectors determined that although broader sampling would have been desirable, the examinations satisfied the regulations for requalification examinations. The licensee stated that this area would be reviewed to ensure that sampling from 10 CFR 55.43 accurately corresponded to the requalification 2-year sampling plan.

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 verification of 10 CFR 55.43 sampling was considered a programmatic deficiency.

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 debriefings held by the licensee's evaluators for each of the scenario sets. The debriefings were comprehensive and candid with detailed discussions by each evaluator on relevant subjects. The evaluators documented their observations well to support their evaluation findings and aid in any required remediation. The inspectors observed 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 facility evaluators administered the examinations professionally and documented their findings well to support their evaluations.

O5.3 Review of Requalification Feedback Process

a. Inspection Scope (71001)

The inspectors verified the methods and effectiveness of the licensed operator requalification training program to ascertain whether assessments of operator performance were effectively incorporated into the requalification training.

b. Observations and Findings

The inspectors reviewed 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 included training assessments/audits, plant events, and training cycle evaluations. The training staff had incorporated lesson plans and training scenarios related to two significant plant events: main steam isolation valves closure event and the flooding event. Other feedback included training cycle evaluations and remediation evaluations. While scenario remediation focused on crew weaknesses and the critical task failures, they did not necessarily followup on identified weaknesses in the remediation scenario. For example, one crew remediated for a failure to trend drywell temperature and initiate drywell sprays prior to reaching the 285°F did not identify the failure of service water flow to the high pressure core spray diesel during the remediation scenario. No remediation was performed for this performance weakness.

c. Conclusions

The inspectors concluded that the operations training organization responded to the feedback in a timely manner and was incorporating plant events into training lesson plans and simulator training.

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 10, 1998. The licensee acknowledged the findings and did not identify any information as proprietary.

ATTACHMENT

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

D. Coleman, Manager, Regulatory Affairs
R. Hayden, Operations Training Requalification Lead
S. Oxenford, Operations Manager
P. Taylor, Operations Training Superintendent
W. Shaeffer, Manager, Nuclear Training

NRC

J. Pellet, Chief, Operations Branch, Division of Reactor Safety

DOCUMENTS REVIEWED

OTI 4.3, "Operator Training Material Development," Revision 7.
OTI 4.4, "Operator Training Exam Material Development," Revision 8.
OTI 5.4, "Licensed Operator Examination Security Requirements," Revision 4.
OTI 5.5.3, "Conduct of Simulator Training and Evaluations," Revision 5.
OTI 5.8, "Performance Deficiency Analysis and Remediation," Revision 4.
OTI 7.1, "Operations Training Program Responsibilities," Revision 4.
SWP-TQS-01, "Training, Qualification and Simulators," Revision 1.
TRG-TQS-01, "Training Administration," Revision 0.
D-9, "WNP-2 Licensed Operator Requalification Training Program Description," Revision 11.