

ENCLOSURE 1

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

Docket Nos.: 50-528
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50-530

License Nos.: NPF-41
NPF-51
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Report No.: 50-528/97-01
50-529/97-01
50-530/97-01

Licensee: Arizona Public Service Company

Facility: Palo Verde Nuclear Generating Station, Units 1, 2, and 3

Location: 5951 S. Wintersburg Road
Tonopah, Arizona

Dates: January 13-17, 1997

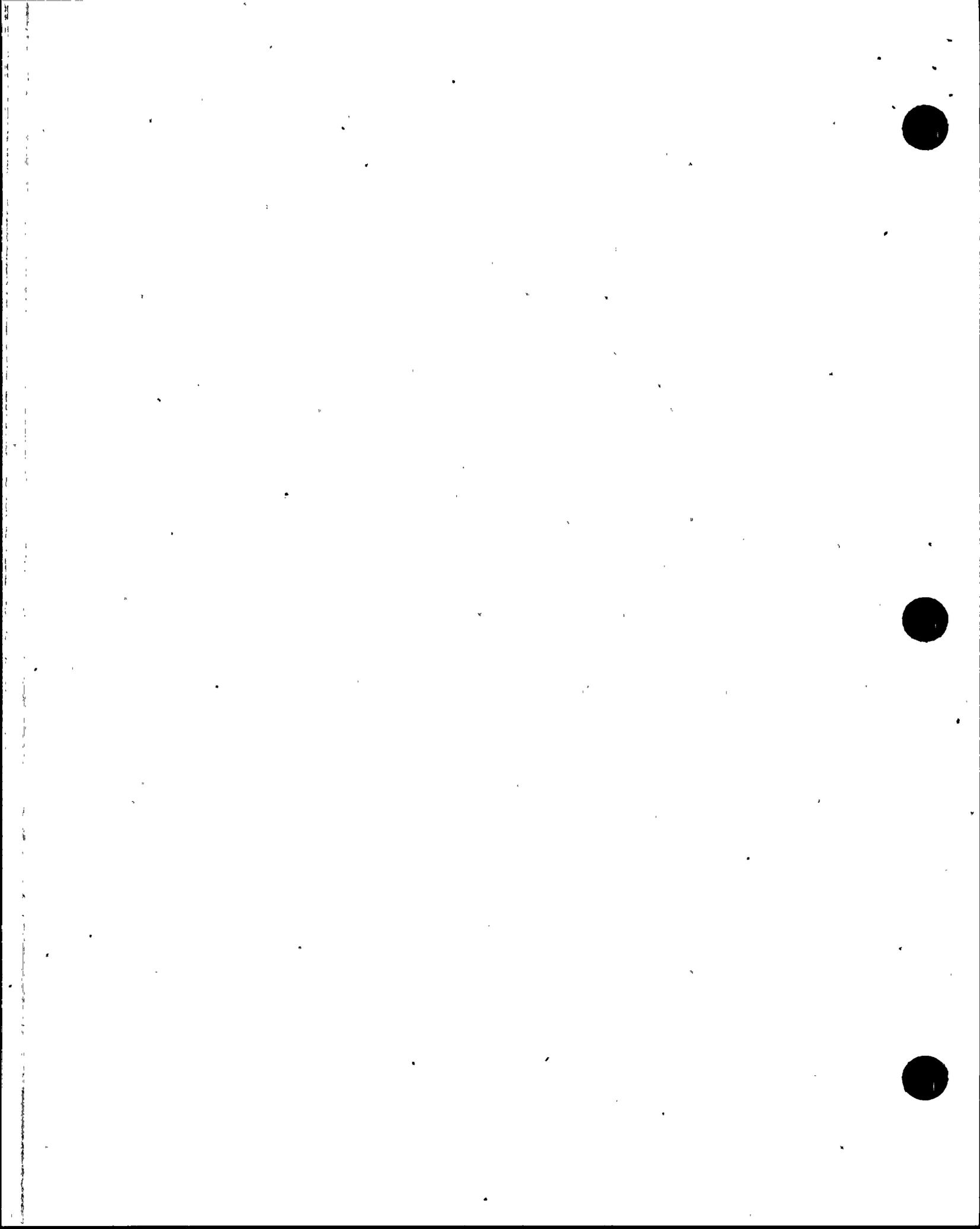
Inspectors: S. L. McCrory, Lead Inspector
H. Bundy, Inspector
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T. Meadows, Inspector

Approved By: John L. Pellet, Chief, Operations Branch, Division of Reactor Safety

ATTACHMENTS:

Attachment 1: Supplemental Information

Attachment 2: Simulation Facility Report



EXECUTIVE SUMMARY

Palo Verde Nuclear Generating Station, Units 1, 2, and 3 NRC Inspection Report 50-528;-529;-530/97-01

This inspection assessed the licensed operator 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 55.59(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 crew performance during biennial requalification examinations. This included review of the facility documents, observation of operating and staff crews during dynamic simulator scenarios, plant walkthroughs, and a written examination. The inspection also assessed the licensee evaluators' effectiveness in conducting examinations.

Operations

- The inspectors concluded that operators exhibited generally good knowledge and ability in all aspects of the requalification examinations. Operations' reinforcement of training, while on-shift, resulted in notably stronger performance by the on-shift crews in communication and command and control. Management expectations for peer checking were not well known or understood by the operators (Section O4.1).
- The licensee developed requalification examinations that were well constructed, challenging, and discriminated at the appropriate level. The licensee maintained and controlled the written examination bank well (Section O5.1).
- The facility evaluators administered the examinations professionally and in accordance with industry standards. The facility evaluators effectively assessed individual operator and crew performance. The inspectors concurred with the final evaluation results and did not identify any additional weaknesses in operator performance (Section O5.2).
- Operations personnel utilized several diverse methods for providing feedback to the licensed operator requalification training program. A new feedback method involving written feedback from each shift supervisor at the end of each training week was more effective in achieving desired training program changes than other feedback methods. The training department, with involvement by operations and senior management through participation in operations training coordination committee and training advisory board, responded appropriately to the training feedback provided (Section O5.3).
- The licensee had implemented a formal and effective remedial training program. Repeated examination failures were aggressively remediated (Section O5.4).



- The licensee had developed adequate requalification program procedures and guidance, although some aspects were controlled informally (Section O5.5).
- The simulation facilities performed well. The licensee had plans to correct modeling problems involving core axial shape index and nonpower emergency operating procedures (Section O5.6).

Report Details

I. Operations

O4 Operator Knowledge and Performance

O4.1 Operator Performance on Annual Requalification Examinations

a. Inspection Scope (71001)

The inspectors observed the performance of three crews of on-shift licensed operators, and two additional crews of off-shift licensed operators, during the dynamic simulator and job performance measure portions of the biennial requalification examination.

b. Observations and Findings

The crews in the dynamic simulator consisted of three reactor operators, two senior operators, and one nonlicensed shift engineer who acted as the shift technical advisor. Each licensed operator was administered five job performance measures and participated in two dynamic simulator scenarios. The inspectors observed the licensee staff administer all of the dynamic simulator scenarios and approximately 95 of the 125 job performance measures.

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

- Operators routinely exhibited formal three-legged communication, and generally met management expectations. The on-shift crews consistently displayed better communication discipline than the off-shift crews; however, all crews exhibited effective communications.
- Operators routinely referred to procedures for alarm response and, as required, during normal and abnormal system operations. Senior operators displayed good familiarity and usage of the emergency operating procedures and Technical Specifications.
- Operators inconsistently applied peer checking techniques. Some senior operators performed the second check function for low significance plant manipulations, which did not meet management expectations of the senior operator remaining in a position of crew oversight. Interviews with selected facility managers indicated that a short training film was the only training, other than verbal, provided for peer checking methods and expectations.
- Operators exhibited good systems knowledge and plant awareness.

One of the five crews failed the dynamic simulator portion of the examination. The crew failed to meet one of the critical task standards established by the facility on one scenario. The failed critical task involved controlling the pressure in an isolated steam generator to prevent lifting of the associated main steam safety valve. The senior operator failed to give specific direction and adequate oversight to maintain an appropriate pressure band, and the balance-of-plant operator failed to adequately monitor and control steam generator pressure. The inspectors observed good command and control, and component monitoring and manipulation during other portions of the two scenarios conducted by the crew and, therefore, considered the observed weaknesses to be uncharacteristic of the crew.

Senior operator command and control was generally good, although one off-shift crew displayed a less formal command structure than the other crews, with lines of authority not well established or controlled. The inspectors observed the shift supervisor directing the activities of the crew without informing the control room supervisor. In some instances, the shift supervisor gave orders that were not formally directed, but implied. He gave directions to the operators such as, "you may want to close (a valve), check with the reactor operator," after which the balance-of-plant and reactor operators would agree among themselves and manipulate the valve, without informing the control room supervisor, and in some instances, without reporting the manipulation to the shift supervisor.

c. Conclusions

The inspectors concluded that operators exhibited knowledge and ability in all aspects of the requalification examinations. Operations' reinforcement of training while on-shift resulted in notably stronger performance by the on-shift crews in communication and command and control. Management expectations for peer checking was not well known or understood by the operators.

O5 Operator Training and Qualification

O5.1 Requalification Examination Development and Quality

a. Inspection Scope (71001)

The inspectors reviewed the biennial requalification examinations, including job performance measures, dynamic simulator examinations, and the written examination. The inspectors evaluated general quality, construction, and difficulty level. The inspectors also reviewed the methodology for developing the requalification examinations.



b. Observations and Findings

The job performance measures covered the range of systems and tasks required by the training program and the regulations. Critical steps identified measurable passing criteria and were essential to successful task completion.

The dynamic simulator examination scenarios challenged operators by requiring extensive operator action to mitigate the simulated abnormal plant conditions, and required the senior operator to establish priorities and provide crew direction and oversight. The scenarios contained crew critical tasks that were well defined and appropriate. The licensee designed the scenarios to avoid repeating job performance measure tasks.

The inspectors determined that the written examinations adequately sampled the training provided in the 2-year requalification training cycle. The written examination questions discriminated well and tested an appropriate mix of cognitive levels.

The inspectors noted that there were 6,767 questions in the licensee's written examination bank at the time of the inspection. The licensee revised approximately 20 percent of the bank during each 6-week training cycle. The inspectors determined that the written examination bank was being well maintained and controlled by the licensee.

The inspectors reviewed the security measures that were used to prevent physical compromise or an examination and determined that they were adequate.

c. Conclusions

The licensee developed requalification examinations that were well constructed, challenging, and discriminated at the appropriate level. The licensee maintained and controlled the written examination bank well (Section O5.1).

O5.2 Evaluator Performance

a. Inspection Scope (71001)

The inspectors observed the administration of all aspects of the requalification examinations to determine the evaluators' abilities to administer an examination and assess adequate performance through measurable criteria. The inspectors also noted the fidelity of the plant simulator to support training and examination administration.

b. Observations and Findings

The inspectors observed five licensed operator requalification training evaluators and one operations management evaluator. The evaluators participated in one or more aspects of 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.

The evaluators conducted the examinations professionally, and thoroughly documented observations for later evaluation. The evaluators provided appropriate verbal cues while using job performance measures in the plant and in the simulator when a loss-of-power shutdown Simulator B.

The evaluators reviewed crew and individual performance against critical tasks following each scenario. At the end of a scenario set, the evaluators assessed crew and individual performance against competency standards similar to those contained in the Examiner Standards. Through a well structured consensus process, the evaluators effectively identified and categorized operator performance strengths and weaknesses. The inspectors agreed with the final results of the facility evaluators, with one crew failing on a missed critical task, and another crew passing with remediation due to command and control weaknesses.

The inspectors observed that the crews held independent self-critique meetings, led by their shift supervisors. The shift supervisors were also involved with development of remediation programs, when necessary. The inspectors also observed that shift supervisor ownership for crew and individual performance (a management expectation) was apparent in most cases.

c. Conclusions

The facility evaluators administered the examinations professionally and in accordance with industry standards. The facility evaluators effectively assessed individual operator and crew performance. The inspectors concurred with the final evaluation results and did not identify any additional weaknesses in operator performance.

05.3 Review of Training Feedback System

a. Inspection Scope (71001)

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



b. Observations and Findings

During interviews, licensed operators, licensed operator training instructors, and operations and training management described several methods for providing feedback on the licensed operator requalification training program. Although trainers would respond to verbal feedback, they encouraged written feedback. Until the last training cycle, most input was received on training student observation forms. The user could check a block if a formal response was desired. The inspectors reviewed the training student observation forms received by the training department in 1996 and noted that training had provided appropriate responses when requested. They had also responded to many comments for which responses had not been requested. The inspectors observed that the number of observation forms submitted was small. Many of the operators had not submitted an observation during 1996.

The interviewees stated that the operators had not been satisfied with the effectiveness of the observation forms in achieving desired training improvements. This issue had surfaced during operations all-hands meetings and in response, after consultation with operations management, training implemented an additional method for training feedback during the last cycle. The new method consisted of formal written feedback to training provided by the shift supervisor after consultation with his crew at the end of each training week. The inspectors reviewed several of these feedback memoranda and the associated responses by training. Substantive comments were being provided by the shift supervisors and appropriate responses had been provided by training in each instance. The interviewees expressed general satisfaction with, and high expectations for, this new method of feedback. The training student observation form also continued to be a feedback option.

The inspectors asked the operators if they were receiving adequate feedback on their performance during simulator training to provide them with the desired improvement opportunities and prepare them for examinations. The responses were all positive. Usually, there were two instructors available during simulator training. One instructor directed activities in the control board area and the other operated the simulator control console. However, training management stated that they encouraged the simulator control operator to participate in the evaluation and feedback process as opportunities arose. All operators indicated that they were receiving the necessary feedback on their performance to prepare them for examinations where more evaluators were present.

In addition to student feedback, the training department utilized feedback from the operations training coordination committee and the training advisory board. The operations training coordination committee included managers from operations and training and addressed emergent and ongoing operations training issues. For instance, a need for additional training on tagging and clearance generation was identified during the July meeting. The licensee placed a high priority on this



training, as evidenced by the fact that the training was being conducted during the biennial examination cycle when no operations training would normally be conducted. After review of meeting minutes for several quarterly committee meetings, the inspectors concluded that the important training issues were being addressed by this committee.

The training advisory board consisted of senior site managers and addressed overall site training performance and strategic training planning issues. The board received input from a number of sources including nuclear assurance audits and third party assessments. After review of meeting minutes from several quarterly meetings, the inspectors concluded that the board was addressing relevant operations training issues.

The inspectors selected plant events which occurred in 1996 and asked the operators to discuss any training received pursuant to the events and any lesson learned from them. The operators were conversant on all the events discussed and described appropriated lessons learned.

c. Conclusions

Operations personnel utilized several diverse methods for providing feedback to the licensed operator requalification training program. A new feedback method involving written feedback from each shift supervisor at the end of each training week was more effective in achieving desired training program changes than other feedback methods. The training department, with involvement by operations and senior management through participation in operations training coordination committee and training advisory board, responded appropriately to the training feedback provided.

05.4 Review of Remedial Training Program

a. Inspection Scope (71001)

The inspectors reviewed the methods and effectiveness of the licensed operator remedial training program. Remediations, which occurred during 1996, were covered.

b. Observations and Findings

The licensee described a comprehensive remedial training program in "Licensed Operator Continuing Training Program," Revision 8. After interviewing operations and training personnel and reviewing remediation records for 1996, the inspectors concluded that the remedial training program was being implemented as designed. Passing a remedial examination comparable to the original examination was required for all evaluation failures. The operators expressed general satisfaction with the few remediations they had experienced.

With the exception of 62 failures on equipment clearance tagging examinations in Cycle 96-01, and 16 failures on emergency plan training, there were few examination failures to be remediated in 1996. The licensee's zero error policy (100 percent score required for a passing grade) on clearance tagging contributed to those failures. With the exception of equipment clearance tagging, the pass rate on remedial examinations was close to 100 percent. As discussed in Section O5.4 above, the licensee performed additional training on clearance orders and equipment tagging during the biennial examination cycle.

The remediation records reviewed indicated that, at a minimum, the instructor and operator discussed his/her exhibited weaknesses prior to administration of the remedial examination. The licensee's procedures required that the remedial examination cover the exhibited student weaknesses. However, the procedures also required a substantial number of different questions on the remedial examination to prevent a student from passing by only learning the answers on the questions he/she missed. Finally, the procedure required remediation and reexamination following a failed examination within 6 weeks of the end of the requalification training cycle. There was a similar requirement for makeup training.

For repeated examination failures, the licensee had a policy of escalated action levels. For a third written failure during a 2-year program, the licensee removed the individual from licensed duties and a performance review board determined remediation actions. This occurred for one individual during 1996. The inspectors discussed the remediation actions which were taken for that individual with the department leader and found them to be appropriate. Although it did not occur in 1996, an individual's performance would be reviewed by a performance review board after the second unsatisfactory simulator demonstration. Also, the second annual examination failure in a 4-year period would result in an individual's performance being reviewed by a performance review board. Based on only one individual having had a performance review during 1996, the inspectors concluded the remedial training program was effective.

c. Conclusions

The licensee had implemented a formal and effective remedial training program. Repeated examination failures were aggressively remediated.

O5.5 Review of Requalification Program Guidance (71001)

The inspectors reviewed the licensee's governing procedure for the requalification program, "Licensed Operator Continuing Training Program Description," Revision 8. Through this procedure, the licensee committed to the requirements of NUREG-1021, "Operator Licensing Examiner Standards," Revision 7, Supplement 1, Sections 601-604, for examination development, administration and evaluation. The NUREG has no guidelines for material reuse during a training cycle. As a result, the licensee had no guidelines in their program to control reuse of examination

questions during the 5 weeks of the requalification examination cycle. Similarly, Section 3.7 of the program procedure stated only that, "... remedial examinations shall be comparable, but not the same exam as the original," and, therefore, did not quantitatively address reuse criteria for remedial examinations. An uncontrolled instructor handbook stated that consecutive examinations should be 20 percent different, but it did not differentiate between consecutive and remedial examinations. The inspectors identified this lack of program guidance for question reuse as a vulnerability which could potentially challenge future examination integrity. The licensee indicated that a procedure revision was in progress which would address that issue. The licensee's requalification program conformed to a systems approach to training.

O5.6 Simulation Facility Performance

a. Inspection Scope (71001)

During observation of the dynamic and job performance measure simulator examinations, the inspectors monitored simulation facility performance to determine if there were any simulator deficiencies which challenged examination validity. During interviews with operators and trainers, the inspectors asked if there had been any simulator modeling or fidelity deficiencies which adversely impacted training.

b. Observations and Findings

The inspectors did not note any simulator deficiencies having a significant negative impact on examination validity while observing the examinations. However, on two occasions the preplanned scenarios and job performance measures were erased prior to beginning that part of the examination. The licensee believed this information loss was caused by offsite power disturbances. On one occasion, the evaluators conducted job performance measures on a black board simulator. The job performance measures contained extensive cues for this contingency which greatly enhanced the ability to continue the examinations with minimal delays.

The interviewees all stated that the simulators had been performing well. They mentioned that there were two significant simulator modeling limitations. First, they had to train on some not-at-power emergency operating procedures using a black board because the simulator model did not cover operations with the reactor head removed. Secondly, the simulator did not accurately model axial shape index transients. Training management stated that there were plans to upgrade the simulators for performance of nonpower mode emergency operating procedures in 1997. They hoped that this modification would also correct the axial shape index modeling problems. If these problems were not corrected by the planned modification, the licensee stated that the axial shape index modeling problems would be corrected by a subsequent modification.

The inspectors determined that these deficiencies did not impact examination validity. Because all the operators were aware of these deficiencies, there was no significant negative training impact. However, when the modifications are installed, the licensee planned to conduct enhanced training on core power distribution transients and not previously modeled emergency operating procedures.

c. Conclusions

The simulation facilities performed well. The licensee had plans to correct modeling problems involving core axial shape index and lower mode emergency operating procedures.

III. Engineering

E2 Engineering Support of Facilities and Equipment

E2.1 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 wording was consistent with the observed plant practices, procedures, and/or parameters.

V. Management Meetings

X1 Exit Meeting Summary

The examiners presented the inspection results to members of the licensee management at the conclusion of the inspection on January 17, 1997. The licensee acknowledged the findings presented.

The licensee did not identify as proprietary any information or materials examined during the inspection.



ATTACHMENT 1

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

J. Levine, Senior Vice President
R. Nunez, Department Leader, Operations Training
A. Krainik, Department Leader, Regulatory Affairs
G. Overbeck, Vice President, Nuclear Production
J. Velotta, Director, Training
J. Hunter, Operations, Shift Supervisor
M. Baughman, Section Leader, Operations Training
R. Taylor, Operations, Shift Supervisor
D. Marks, Section Leader, Nuclear Regulatory Affairs
R. Henry, Site Representative
F. Gowers, Site Representative
G. Box, Section Leader, Operations Training
T. Mock, Section Leader, Nuclear Training
D. Smith, Director, Operations
R. Fullner, Director, Nuclear Assurance

DOCUMENTS REVIEWED

Procedures Reviewed

"Licensed Operator Continuing Training Program Description," Revision 8
15DP-OTR69, "Training and Qualification Administration," Revision 0
40DP-90P02, "Conduct of Shift Operations," Revision 0
15DP-OLC01, "Operator License Application Process," Revision 0
PD-OAP01, "Administrative Control Program," Revision 0

Other Documents Reviewed

Lesson NLR95-01-RC-008, "New Station Tagging Revision," dated December 28, 1994

Lesson #NLR95-04-RC-003-000, "Industry Events," dated July 6, 1995

Lesson #NLR96-01-RC-006-01, "Clearance Generation," dated November 20, 1995

Lesson #NLR96-01-RC-005-000, "Clearance and Tagging Procedures," dated
November 13, 1995

Lesson #NLR96-03-RC-002-001, "Station Tagging and Clearance Review," dated
August 7, 1996

"PVNGS Training Student Observation," Chuck Zell, dated July 9, 1996

"Student Feedback Response," Larry P. Wilhelm to Leo C. Zell, dated August 9, 1996

"PVNGS Training Student Observation," Michael L. Colvin, dated August 6, 1996

"PVNGS Training Student Observation," Jim Moreland, dated July 15, 1996.

"PVNGS Training Student Observation," Chas. Weber, dated July 22, 1996

"Feedback," Michael D. Baughman to Charles R. Weber, dated August 6, 1996

"Question #19 of the Static Exam," Michael D. Baughman to Charles R. Weber, dated August 1, 1996

"PVNGS Training Student Observation," Richard V. Byers, undated

"Feedback," Michael D. Baughman to Richard V. Byers, dated August 9, 1996

"PVNGS Training Student Observation," Dennis Swan, dated July 31, 1996

"PVNGS Training Student Observation," J. Brannen, dated July 31, 1996

"TCS," Michael D. Baughman to John Dedon, undated

"PVNGS Training Student Observation," Jim T. Taylor, dated July 30, 1996

"PVNGS Training Student Observation," James A. Proctor, undated

"PVNGS Training Student Observation," Holmes, undated

"Feedback," Michael D. Baughman to Paul C. Holmes, dated August 9, 1996

"PVNGS Training Student Observation," Scott Zertel, undated

"Feedback," Michael D. Baughman to Michael S. Zerkel, dated August 9, 1996

"PVNGS Training Student Observation," Charles Pryor, undated

"Feedback," Michael D. Baughman to Charles W. Pryor, undated

"PVNGS Training Student Observation," R. D. Lee, dated August 16, 1996

"PVNGS Training Student Observation," R. Byers, dated June 4, 1996

"Feedback," Michael D. Baughman to R. Beyers, undated

"PVNGS Training Student Observation," Rackley, dated February 6, 1996



"Training Assessment Program Tool #2," R. D. Lee, dated January 11, 1996

"Training Assessment Program Tool #2," McGhee, dated January 7, 1996

"PVNGS Training Student Observation," R. Byers, dated January 16, 1996

"Feedback," memorandum Michael D. Baughman to R. Beyers, dated March 19, 1996

"PVNGS Training Student Observation," R. Middleton, dated January 23, 1996

"Feedback," Michael D. Baughman to Roger Middleton, undated

"PVNGS Training Student Observation," Robert S. McKinney, dated January 16, 1996

"Feedback," Michael D. Baughman to Robert S. McKinney, dated March 19, 1996

"PVNGS Training Student Observation," J. Hunter, dated February 6, 1996

"Feedback," Michael D. Baughman to John H. Hunter, dated March 19, 1996

"PVNGS Training Student Observation," Bruce Rash, dated March 16, 1996

"Feedback," Michael D. Baughman to Bruce J. Rash, dated March 19, 1996

"PVNGS Training Student Observation," Alan Malley, undated

"Feedback," Michael D. Baughman to Alan M. Malley, dated March 19, 1996

"PVNGS Training Student Observation," A. Nelsen, dated January 30, 1996

"PVNGS Training Student Observation," M. Veach, dated January 30, 1996

"Feedback," Michael D. Baughman to Mark C. Veach, dated March 19, 1996

"PVNGS Training Student Observation," J. M. L'Eplattenier, dated January 30, 1996

"Feedback," Michael D. Baughman to Jean-Marc L'Eplattenier, dated March 20, 1996

"Operations-Training Quarterly Interface Meeting," ID# 054-02441A-RAN/GTB, R. A. Nunez to Distribution, dated December 10, 1996

"Operations-Training Quarterly Interface Meeting," ID# 054-02437-RAN/GTB, R. A. Nunez to Distribution, dated September 20, 1996

"Operations-Training Quarterly Interface Meeting," ID# 054-02421-RAN/GTB, R. A. Nunez to Distribution, dated July 17, 1996



"Operations-Training Quarterly Interface Meeting," ID# 054-02408A-RAN/GTB,R. A. Nunez to Distribution, dated April 5, 1996

"Training Advisory Board," TAB Secretary to Distribution, dated February 15, 1996

"Training Advisory Board," TAB Secretary to Distribution, dated May 16, 1996

"Training Advisory Board," TAB Secretary to Distribution, dated July 25, 1996

"Training Advisory Board," TAB Secretary to Distribution, dated December 5, 1996

"NLO/LOCT End of Training Week Feedback," Cycle 96-05, Week 1, Crew 42, Unit 3 , dated November 8, 1996

"NLO/LOCT End of Training Week Feedback," Cycle 96-05, Week 1, Crew 22, Unit 2, dated November 8, 1996

"Training Feedback Crews 12/22/32/42/52," Week 1, Cycle 96-05

"NLO/LOCT End of Training Week Feedback," Cycle 96-05, Week 2, Crew Admin., Unit Admin., dated November 15, 1996

"NLO/LOCT End of Training Week Feedback," Cycle 96-05, Week 2, Crews 15, 25, 35, 55; Unit all, dated November 15, 1996

"Training Feedback Crews 15/25/35/45/55," Week 2, Cycle 96-05

"NLO/LOCT End of Training Week Feedback," Cycle 96-05, Week 3, Crew D, Units 1 and 3, dated November 22, 1996

"NLO/LOCT End of Training Week Feedback," Cycle 96-05, Week November 11-22, Crew 20, Unit 2, dated November 22, 1996

"NLO/LOCT End of Training Week Feedback," Cycle 96-05, Week 3, Crew 54, dated November 22, 1996

"NLO/LOCT End of Training Week Feedback," Cycle 96-05, Week 3, Crew Admin, dated November 22, 1996

"Training Feedback Crews 14/24/34/44/54," Week 3, Cycle 96-05

"NLO/LOCT End of Training Week Feedback," Cycle 96-05, Week 4, Crew 11, Unit 1, dated December 6, 1996

"NLO/LOCT End of Training Week Feedback," Cycle 96-05, Week 4, Crew 41, dated December 6, 1996

"NLO/LOCT End of Training Week Feedback," Cycle 96-05, Week 4, Crew 51, dated December 6, 1996

"Training Feedback Crews 11/21/31/41/51," Week 4, Cycle 96-05

"NLO/LOCT End of Training Week Feedback," Cycle 96-05, Week 5, Crew 33, Unit 3, dated December 13, 1996

"NLO/LOCT End of Training Week Feedback," Cycle 96-05, Week 5, Crew 23, Unit 2, dated December 13, 1996

"NLO/LOCT End of Training Week Feedback," Cycle 96-05, Week 5, Crew 13, Unit 1, dated December 13, 1996

"NLO/LOCT End of Training Week Feedback," Cycle 96-05, Week 5, Crew 43; Admin, dated December 13, 1996

"NLO/LOCT End of Training Week Feedback," Cycle 96-05, Week 5, Crew 53, Admin, dated December 13, 1996

"Quarterly Training Performance Assessment - July 1, September 30, 1996," Nuclear Training Department

"Open Simulator Operator Feedbacks," dated January 16, 1997

"Simulator Discrepancy Reports Sorted by Due Date," dated January 16, 1997

054-02381-RAN/MDG, "LOCT Cycle 96-01, Week 1 Remediation," dated January 23, 1996

"Summary of Training for George Turner," Marvin White to Carla Clayborn, dated September 17, 1996

"Training Remediation of Crew 1A," ID# 954-02398-RAN/MDB, M. D. Baughman to L. C. Zell, dated February 28, 1996

"Simulator Training Recommendation," ID# 054-02582-RAN/MDB, M. D. Baughman to L. C. Zell, dated January 23, 1996

"LOCT Cycle 96-01, Week 1 Remediation," ID# 054-02381-RAN/MDB, M. D. Baughman to S. Zerkel, dated January 23, 1996

"LOCT Cycle 96-01, Week 2 Remediation," ID# 054-02385-RAN/MDB, M. D. Baughman to S. Zerkel, dated January 25, 1996



"LOCT Cycle 96-01, Week 3 Remediation," ID# 054-02387-RAN/MDB, M. D. Baughman to S. Zerkel, dated February 2, 1996

"LOCT Cycle 96-01, Week 4 Remediation," ID# 054-02390-RAN/MDB, M. D. Baughman to S. Zerkel, dated February 8, 1996

"LOCT Cycle 96-01, Week 5 Remediation," ID# 054-02393-RAN/MDB, M. D. Baughman to S. Zerkel, dated February 20, 1996

"Crew 34 Simulator Remediation," John K. Aronson to James T. Taylor, dated September 18, 1996

"Roger Middleton's Requal Exam Remediation," Thomas E. Stahler to Carla Clayborn, dated August 1, 1996

"FW: Crew 32 Remediation (NLR9603, Week 2)," John K. Aronson to Carla Clayborn, dated July 25, 1996

"Koppelman Crew (25) Remediation," Warren A. Potter to Michael D. Baughman, dated August 2, 1996

"Simulator Remediation," Greg J. Peak to Michael D. Baughman, dated August 6, 1996

"Bruce Rash Remediation," Greg J. Peak to Michael D. Baughman, dated December 6, 1996

"Martin Grissom Remediation," Greg J. Peak to Michael D. Baughman, dated

"EPLAN Remediation," John M. Dedon to Greg J. Peak, dated December 6, 1997

"Remediation," Greg J. Peak to Michael D. Baughman, dated December 6, 1996

"RE: Exam Makeup," Warren A. Potter to Mark A. Wallner, dated December 6, 1996

"FW: Remediation of Crew 51," Thomas E. Stahler to Robert A. Nunez, dated August 13, 1996

"Mark Piepiora Remediation," Larry P. Wilhelm to Michael D. Baughman, dated August 13, 1996

"FW: Dan Armour Remediation," Michael D. Baughman to Carla Clayborn et al, dated July 1, 1996

"Cycle 2 Makeup R. Carboneau," John M. Dedon to Michael D. Baughman, dated July 2, 1996



"G. Turner Remediation," John M. Dedon to Michael D. Baughman, dated July 2, 1996

"EC Exam Makeup," John M. Dedon to Michael D. Baughman, dated July 2, 1996

"George Turner Remediation," James J. Shannon, Jr., to Michael D. Baughman, dated July 3, 1996

"January 1997 Requal Exam Status Report as of 1/16/97"

"Remediation Plan," Mark A. Sharp to Michael D. Baughman, dated January 16, 1997

"1997 Annual Requal Remediation," ID# 054-02444-RAN/WES, W. E. Stearns to M. D. Baughman, Dated January 16, 1997

"1997 Annual Requal Remediation," ID# 054-02448-RAN-WES, L. D. Burton to M. D. Baughman, dated January 16, 1997

"1997 Annual Requal Remediation," ID# 054-02445-RAN/WES, W. E. Stearns to M. D. Baughman, dated January 16, 1997

"1997 Annual Requal Exam Remediation," ID# 054-02449-RAN-WES, D. G. Shoemaker to M. D. Baughman, dated January 16, 1997

"1997 Annual Requal Exam Remediation," ID# 054-02446-RAN/WES, W. E. Stearns to M. D. Baughman, dated January 16, 1997

"1997 Annual Requal Remediation," ID# 054-02450-RAN-WES, D. A. Rutherford to M. D. Baughman, dated January 16, 1997

"1997 Annual Requal Exam Remediation," ID# 054-02447-RAN/WES, W. E. Stearns to M. D. Baughman, dated January 16, 1997

"1997 Annual Requal Exam Remediation," ID# 054-02451-RAN/WES, R. Blakey to M. D. Baughman, dated January 16, 1997

"Licensed Operator Training Assessment," Nuclear Assurance Division, dated October 30, 1996

Written Requalification Examination Question Bank

Cycles 96/01-05 requalification biennial written examinations

Cycle 96-02 JPM Evaluation Bank

NUA 97-00, 1997 Annual Evaluation, Week #1, Week #2

ATTACHMENT 2

SIMULATION FACILITY REPORT

Facility Licensee: Palo Verde Nuclear Generating Station

Facility Docket: 50-528; 50-529; 50-530

Operating Examinations Administered at: Wintersburg, Arizona

Operating Examinations Administered on: January 13-17, 1997

These observations do not constitute audit or inspection findings and 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. No licensee action is required in response to these observations.

Overall, the simulation facility displayed excellent fidelity, with only minor exceptions as noted below:

- On two occasions data loss occurred for preplanned scenarios and job performance measures. The licensee believed that this loss was caused by offsite power disturbances.
- Plant operations and training personnel discussed modeling limitations involving axial shape index and lower mode emergency operating procedures as described in Section O5.6 of this report.

These deficiencies had no significant impact on examination administration or operator performance.

