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SUBJECT: Submits NRC requalification program evaluation & response to Exam Repts 50-528/OL-91-02,50-529/OL-91-02 & 50-530/OL-91-02.

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WILLIAM F. CONWAY
EXECUTIVE VICE PRESIDENT
NUCLEAR

161-04716-WFC/GEC
April 08, 1992

Mr. John B. Martin
Regional Administrator, Region V
U. S. Nuclear Regulatory Commission
1450 Maria Lane, Suite 210
Walnut Creek, CA 94596-5368

References: 1. Letter 161-04354-WFC/GEC, dated December 20, 1991, from W. F. Conway, APS, to NRC Region V, "NRC Requalification Program Evaluation and Examination Report Response"

2. Letter dated January 29, 1992, from R. P. Zimmerman, Director, Division of Reactor Safety and Projects, NRC Region V, to W. F. Conway, Executive Vice President, Nuclear, APS, "Requalification Program Evaluation Corrective Action Plan"

Dear Mr. Martin:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2, and 3
Docket Nos. STN 50-528/529/530
Requalification Program Evaluation Corrective Action Plan
File: 92-005-419.06; 92-056-026

On December 20, 1991, Arizona Public Service Company (APS) responded (Reference 1) to findings discussed in NRC Examination Report No. 50-528/529/530-OL-91-02. Reference 2 requested amplification of that response to include the APS evaluation of why problems occurred regarding command and control, communication, and procedure use, as well as the extent of those problems.

The Training Department reviewed the observations related to procedure use, communications, and emergency event classifications by operating crews. This review was utilized to develop the APS response in Reference 1. A more extensive review was performed of plant events, and internal, external, and training evaluations in both the simulator and Control Rooms in response to Reference 2. This review resulted in the following conclusions:

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I. Evaluation of Causes

The results of the review revealed several factors that contributed to the identified areas of concern. These factors are:

A. The standards of expectation with respect to command and control, communications, and procedure usage were not rigorous enough to meet increasing industry standards in these areas. This observation is based upon the consistently high performance ratings during simulator evaluations by both plant management and training staff members in these areas, while external evaluations indicated a lower level of performance.

B. Expectations were not specific enough. This has led to inconsistencies in the interpretation and application of the standards for performance in the areas of command and control, communications, and procedure usage by both evaluators and operations personnel during crew performance on the simulator.

C. Holding personnel accountable to continually meet the existing expectations has been less than consistent. This has led to differing levels of performance among the operating crews.

D. Over the past several years, industry standards have been elevated in the areas of teamwork and communications. During this time, pursuit and implementation of these increasing standards at PVNGS was not totally effective. Expectations of simulator training performance by the operating crews were viewed differently by plant staff and external evaluators. Significant emphasis was directed toward technical skills during simulator training conducted during the 18-month period prior to the September 1991 NRC Requalification Examinations. During this time, simulator contact for operations personnel was limited in order to provide adequate support for the simulator certification effort. This resulted in a greater emphasis being directed toward correctly performing manipulations and individual simulator critical tasks than on operator proficiency in communications and teamwork.

II. Extent of Identified Concerns

The concerns identified in the areas of command and control, communications, and procedure usage appear to involve most shift crews but to varying degrees.

A root cause analysis of a large number of plant events, including certain events regarding command and control, communications, and procedure use by operating crews, was recently performed. A review of the results of this root cause analysis confirmed the evaluation of causes developed in Section I. Based upon the conclusions of the review, the actions identified in Reference 1 properly address the concerns in the areas of procedure usage and communications. APS has also undertaken actions to specifically address the command and control concern. To strengthen the actions identified in Reference 1, APS has developed additional detailed and integrated actions to enhance and reinforce the program.

These include:

1. Visits to selected nuclear facilities to assess other enhancement methods for application at PVNGS.

2. Utilization of external nuclear utility personnel to (1) assess Emergency Operating Procedure usage and (2) assess and upgrade crew communications and teamwork, and recommend performance improvements.

3. Individual (one-on-one) expectation coaching sessions between plant management and each shift supervisor.

4. A video tape production to visually reinforce excellent command and control, communication, and procedure usage skills. Simulator training and evaluation video tapes will also be used more extensively.

5. Training evaluation standards development to be used as tools to determine the degree of expectations met and to ensure constancy of evaluations.

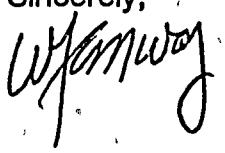
6. Augmented operations management assessments of daily work activities on shift to further enhance crew performance in both plant and simulator responsibilities.

The enclosure provides corrective actions specified in Reference 1 and in this letter to address the factors identified in Section I above.

APS management will continue to (1) focus upon the operator training program in terms of ensuring a uniform understanding of management expectations, (2) direct application of these management expectations to the work environment, and (3) review the daily work practices with a stated goal of resolving the concerns of command and control, communication, and procedure use at PVNGS.

Please call Gary Clyde at (602) 340-4252 with any questions.

Sincerely,



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Enclosure

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ENCLOSURE

CORRECTIVE ACTIONS TO ADDRESS IDENTIFIED CAUSES

ENCLOSURE

CORRECTIVE ACTIONS TO ADDRESS IDENTIFIED CAUSES

A. The standards of expectation with respect to command and control, communications, and procedure usage were not rigorous enough to reduce the number of errors in these areas. This observation is based upon the consistently high performance ratings during simulator evaluations by both plant management and training staff members in these areas, while external evaluations indicated a lower level of performance.

- The Emergency Operating Procedures (EOPs) are currently being revised. The revision is based on Revision 3 to CEN-152, "Combustion Engineering Emergency Procedure Guidelines." The format and guidance of the revised EOPs is more prescriptive with respect to procedure use and adherence. The revised EOPs will provide more distinct direction on actions to be taken during stabilization and recovery operations. This revision will aid in consistent implementation of the EOPs.

- Training will emphasize proper operator performance expectations in the area of procedure reference and crew communications practices beginning with a requalification cycle that began on February 15, 1992.

- PVNGS management will intensify, during discussions and interactions with licensed personnel, its conveyance of the standards and expectations that currently exist in the "Conduct of Shift Operations" procedure, 40AC-9OP02. Consistent formality of communication will be stressed.

- A video tape production will visually reinforce excellent command and control, communication, and procedure usage skills. Simulator training and evaluation video tapes will also be used more extensively.

B. Expectations were not specific enough. This has led to inconsistencies in the interpretations and application of the standards for performance in the areas of command and control, communications, and procedure usage by both evaluators and operations personnel during crew performance on the simulator.

- The EOPs are currently being revised. The revision is based on Revision 3 to CEN-152, "Combustion Engineering Emergency Procedure Guidelines." The format and guidance of the revised EOPs is more prescriptive with respect to procedure use and adherence. The revised EOPs will provide more distinct direction on actions to be taken during stabilization and recovery operations. This revision will aid in consistent implementation of the EOPs.

- Training will conduct instructor seminars to emphasize operator performance expectations and instructor performance expectations in the areas of procedure reference and crew communication practices.

- Training will emphasize proper operator performance expectations in the area of procedure reference and crew communication practices during a requalification cycle that began on February 15, 1992.

- Following each continuing training cycle, Operations and Training Management will meet to assess performance in the area of procedure reference, adherence, and use, as well as crew communication practices and the effectiveness of the corrective actions.

- During discussions and interactions with licensed personnel, PVNGS management will intensify its conveyance of the standards and expectations that currently exist in the "Conduct of Shift Operations" procedure, 40AC-9OP02. Consistent formality of communication will be stressed.

- Individual (one-on-one) expectation coaching sessions will be held between plant management and each shift supervisor.

- Training evaluation standards will be developed as tools to determine the degree of expectations met and to ensure constancy of evaluations.

C. Holding personnel accountable to continually meet the existing expectations has been less than consistent. This has led to differing levels of performance among the operating crews.

- The formality of simulator training evaluations will be modified to model the annual simulator examinations. Simulator training evaluations will be conducted beginning with a requalification cycle that began on February 15, 1992. Each operator will be evaluated once during every two consecutive cycles of continuing training. The results of these evaluations will be used to assess license personnel performance in the area of procedure reference, adherence, and use, as well as in the area of crew communication practices and the effectiveness of the corrective actions.

- Line management for licensed operators and senior operators will conduct periodic observations in the Unit Control Rooms and in the simulator. These observations are documented as part of the Management Observation Program and will be used to assess performance in the area of procedure reference, adherence, and use, as well as in the area of crew communication practices

- Operations management assessments of daily work activities on shift will be augmented to further enhance crew performance in both plant and simulator responsibilities.

D. Over the past several years, industry standards have been elevated in the areas of teamwork and communications. During this time, pursuit and implementation of these increasing standards at PVNGS was not totally effective. Expectations of simulator training performance by the operating crews were viewed differently by plant staff and external evaluators. Significant emphasis was directed toward technical skills during simulator training conducted during the 18-month period prior to the September 1991 NRC Requalification Examinations. During this time, simulator contact for operations personnel was limited to ensure adequate support for the simulator certification effort. This resulted in a greater emphasis being directed toward correctly performing manipulations and individual simulator critical tasks than on operator proficiency in communications and teamwork.

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- Visits to selected nuclear facilities to assess other enhancement methods for application at PVNGS will be made.

- External nuclear utility personnel will be utilized to (1) assess Emergency Operating Procedure usage and (2) assess and upgrade crew communications and teamwork, and recommend performance improvements.