

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos. 50-528/87-12, 50-529/87-13, 50-530/87-14

Docket Nos. 50-528, 50-529, 50-530

License Nos. NPF-41, NPF-51, CPPR-143

Licensee: Arizona Nuclear Power Project  
P. O. Box 52034  
Phoenix, Arizona 85072-2034

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

Inspection Conducted: March 23, 1987 - April 10, 1987

Inspectors: *P. Qualls FOR* 5/20/87  
P. Qualls, Reactor Inspector Date Signed

*K. Ivey FOR* 5/20/87  
K. Ivey, Resident Inspector Date Signed

Approved By: *P. H. Johnson* 5/20/87  
P. H. Johnson, Chief, Date Signed  
Reactor Projects Section 3

Summary:

Inspection on March 23, 1987 - April 10, 1987, (Report Nos. 50-528/87-12, 50-519/87-13, 50-530/87-14)

Areas Inspected: A special team inspection of the licensee Emergency Operating Procedures. Inspection Procedure Temporary Instruction (TI) 2515/79 was used for this inspection.

Results: Of the areas inspected, no violations were identified.

## DETAILS

### 1. Persons Contacted

- \*J. Driscoll, Assistant Vice President, Nuclear Production Support
- \*W. Ide, Director, Quality Assurance
- \*J. Allen, Manager, Operations
- \*W. Quinn, Manager, Licensing
- \*T. Shriver, Manager, Compliance
- \*R. Baron, Supervisor, Compliance
- \*F. Buckingham, Supervisor, Operations Support
- \*D. Marks, Nuclear Safety Group Engineer
  - R. Myers, Assistant Shift Supervisor
  - L. Speight, Assistant Shift Supervisor
  - J. Sills, Senior Compliance Engineer

\*Attended exit meeting on March 27, 1987.

In addition other members of licensee staff were contacted during the course of the inspection.

### 2. Procedure Generation Package Review

The inspectors verified that the licensee's Procedure Generation Package (PGP) had been reviewed and approved by the NRC.

The Combustion Engineering Generic Technical Guideline (GTG) table of contents was compared to the plant specific Emergency Operating Procedures (EOP) index. A full complement of EOP's had been developed.

#### a. Plant Specific Technical Guidelines

The inspectors reviewed 100% of the action steps in five EOP's against the GTG's to ensure that the procedures incorporated the generic guidelines. A number of examples were identified where the licensee did not follow the GTG. Not all of these cases were identified by the licensee as deviations from the GTG. The licensee did not in all cases provide a written justification for not following the GTG. With the definition of deviation used by the NRC and published in the Standard Review Plan (SRP), section 13.5.2, some of these issues should have been identified and analyzed as deviations. The SRP definition had not yet been issued when the licensee prepared his EOP's. Therefore, the need for identifying and analyzing deviations, as defined by the SRP, was considered a backfit by the licensee and was not considered a requirement.

Revision 3 to the GTG's is due to be submitted from Combustion Engineering to NRR for review in early April 1987. The licensee committed, that 60 days after NRR issues an SER approving Rev. 3 to the GTGs, they would provide to NRR a schedule for revision of their EOP's to meet the Rev. 3 GTG guidelines and in revising their EOPs they would use the Standard Review Plan for guidance.

The inspectors reviewed five plant-specific values incorporated in the EOP's and verified that they were correct.

b. Plant Specific Writer's Guide

The inspectors reviewed three EOPs to ensure that they were written in accordance with the approved Plant Specific Writer's Guide (P-SWG). The most current revision, Revision 8, of the P-SWG was issued in February 1987. This revision incorporated many of the human factors concerns addressed by the NRC in SRP 13.5.2. However, according to the licensee, the EOP's were written using a previous, revision, Revision 7, to the P-SWG. When reviewing the EOPs against the P-SWG in effect at the time of their issuance, no potentially safety significant deviations were identified. NRC guidance and the current revision, Revision 8, of the P-SWG require that action statements not be included in notes or cautions and similarly, notes and cautions not be included in action statements. The inspectors found that the EOPs have notes and cautions in action statements and statements requiring actions in cautions and notes.

The P-SWG also did not contain guidance on preparing the flow charts such as is used in the diagnostic section of the EOPs. The licensee committed to review the P-SWG for completeness against the SRP guidelines and to make any required changes prior to preparation of Revision 3 of the EOPs.

c. Verification and Validation

The verification and validation for each of the EOPs were reviewed to ensure that they were in accordance with the EOP verification and validation program established by the licensee in the PGP.

d. Training

The inspectors observed licensee operations personnel perform five evaluations which required implementation of their EOP's. The personnel consisted of a typical shift operating crew performing action on the Palo Verde simulator. The inspectors observed the following:

- The operators appeared to be familiar with their responsibilities and required actions during the emergencies.
- The EOP's which were used in the simulator could be implemented by the minimum staff specified in the licensee's Technical Specifications.
- In general, the operators did not physically interfere with each other while performing the EOPs. On one occasion two operators bumped into each other. This appeared to be an isolated example.
- No duplication of operator actions was observed.
- Where procedure transitions were required, no deficiencies were noted.



- The alarms in the forward portion of the control room, when several were alarming concurrently, were loud and impaired good verbal communication.
- A step in the Functional Recovery Procedure block diagram was worded such that its meaning was not easily understood by the operators. The licensee is reviewing this step to determine if a wording change is necessary.
- While performing the diagnostic for loss of feedwater flow, the Steam Generator level was restored by AFW and increased above the diagnostic set level. This caused the operator to determine that the event was a Reactor Trip. The licensee stated that this problem will be addressed in Revision 3 to EOPs.

The inspectors also reviewed the training records and training documentation for selected operators. The inspectors determined that the operators did receive classroom training on each EOP and that the operators then had simulator training on all these EOPs.

In summary, the inspectors consider that, in general, the licensee has a program to produce effective emergency procedures. However, the inspectors consider that there are some potentially significant weaknesses with regards to the licensee's implementation of the program. In particular, the licensee did not follow the GTGs in many instances and did not prepare justifications for these deviations. Some of these deviations could be potentially safety significant, but this cannot be determined without performing an analysis. The P-SWG was prepared in order to give the guidance necessary to ensure consistency in preparation of the EOPs. However, the revision used in preparation of the current EOPs did not give specific requirements on the use of "shall" and "should" in writing emergency procedures, it did not give any guidance on the use of notes and cautions in action statements, and it did not give any guidance on the preparation of the EOP flowcharts used by the operators. As a result, there is a lack of consistency in many areas of the EOPs. In addition, the validation and verification process allowed these inconsistencies. These concerns were identified to the licensee and will be reviewed for corrective actions and regulatory compliance as part of a future inspection effort as inspector followup item (528/87-12-01).

### 3. Control Room Observations

On March 26, 1987, members of the inspection team visited the Unit 1 control room with the following observations:

- a. Of the six labels checked in the control room, 2 components were not labeled exactly like the procedure specified. The licensee knew about this discrepancy and was already making efforts to ensure that the differences were resolved.
- b. The ambient noise levels in the control room, due to the ventilation system, appeared to be excessive. The loud noise could tend to diminish operator alertness and impair good communications. The licensee stated that an Engineering Evaluation Report had already been issued to resolve this problem.



4. Exit Meeting

The inspection team met with members of licensee staff on March 27, 1987. The items listed in this report were discussed at that time. In addition, on April 10, 1987, licensee commitments were reverified in a telephone conversation with a compliance supervisor.