## U. S. NUCLEAR REGULATORY COMMISSION

#### **REGION V**

Report Nos. 50-528/87-34, 50-529/87-34 and 50-530/87-35

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

License Nos. NPF-41, NPF-51 and NPF-65

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 Meeting Location: NRC Region V Office, Walnut Creek, California Meeting Conducted: September 24, 1987

Approved by:

8710260250

ADDC

PDR Q

A. Richards, Chief s. Engineering Section

<u>10-9-87</u>. Date Signed

## DETAILS

1. <u>Meeting Participants</u> .

## <u>USNRC</u>

- J. B. Martin, Regional Administrator
- D. F. Kirsch, Director, Division of Reactor Safety and Projects
- J. L. Crews, Senior Reactor Engineer
- S. A. Richards, Chief, Engineering Section
- P. J. Morrill, Operator Licensing Examiner
- E. A. Licitra, Palo Verde Project Manager, NRR

# Arizona Nuclear Power Project (ANPP)

- E. E. Van Brunt, Executive Vice President
- J. G. Haynes, Vice President Nuclear Production
- J. D. Driscoll, Assistant Vice President Nuclear Production
- T. D. Shriver, Compliance Manager
- J. E. Kirby, Unit 3 Project Manager
- J. E. Allen, Project Services Director

# 2. Management Discussion

A management meeting was held on September 24, 1987 at the NRC Region V office in Walnut Creek, California. A summary of each area discussed is provided below.

#### 3. Performance Indicators

The licensee provided their analysis of selected performance indicators including technical specification violations, surveillance test deficiencies, procedural violations, reactor trips, and engineered safety feature (ESF) actuations. The licensee's statistics indicted that the plant overall performance has continued to improve through the third quarter of calendar year 1987. A brief discussion of the reactor trips was held. Mr. Martin questioned whether ANPP had set a goal for reactor trips per year. Mr. Van Brunt replied that a definite goal has been set which he thought was 3 or 4 trips per unit per year. He further stated that the ANPP goal was consistent with the Institute for Nuclear Power Operations (INPO) recommended goal. A discussion of ESF actuations was held and it was noted that a relatively high percentage of actuations occurred due to spurious trips of radiation monitoring equipment. Mr. Martin commented that other Region V plants have had similar problems with radiation monitoring equipment which has required extensive action to address. Mr. Martin questioned ANPP actions in this area, in light of the need to maintain a high operator confidence in alarms and indications. Mr. Haynes agreed that the reliability of the Palo Verde radiation monitoring equipment could be improved and stated that improving this equipment was an ANPP project presently in progress.

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## 4. <u>ANPP Training</u>

The licensee opened a discussion of the ANPP training program by providing a description of the evolution of the program over the past 3 to 4 years. The licensee noted that the operator "pass rate" for initial license examinations has displayed a steady positive trend and, although the simulator presently needs improvements, the problems with the simulator stem, in part, from the fact that Palo Verde was one of the first facilities to obtain a simulator. The licensee also noted that they were on schedule for INPO accreditation of their training programs. Mr. Martin stated that he understood that the original schedule for INPO accreditation had not been met due to problems in the training area, which resulted in the schedule being revised. Mr. Van Brunt responded that he would review the scheduling for INPO accreditation and discuss this area with Mr. Martin at a later date.

A discussion was held regrading operator simulator training time. Mr. Driscoll described actions being taken by ANPP to increase simulator training time for Unit 3 operators prior to full power licensing. Four of six crews are to have received a total of 40 hours simulator time prior to initial criticality. The remaining two crews will total 40 hours within several weeks following initial criticality. The 40 hour goal for the two crews could not be reached prior to initial criticality due to crew rotation schedules. The operators at Units 1 and 2 will total 32 hours for calendar year 1987. The final licensee goal was stated to be 60 hours per year for all three units. Mr. Driscoll also stated that all simulator upgrades would be completed by the end of 1988. Additionally, Mr. Van Brunt observed that at least one Senior Reactor Operator on each Unit 3 crew has had hot operating experience at Units 1 or 2.

A discussion was held concerning the ANPP operator requalification program and the problem areas which resulted in the program being judged marginal by Region V. Mr. Martin stated his concern that ANPP management did not have a good understanding of the operation of the training program. Further, Mr. Martin stated his concern that the training program was not being well managed, and, as an example, observed that until recently ANPP management believed that approximately 40 hours of simulator training per operator per year was being received when the actual number was determined to be 24 hours. Mr. Martin suggested that ANPP conduct an independent review of the training area. Mr. Van Brunt responded that he would reassess the training area. Mr. Martin and Mr. Van Brunt agreed to discuss the ANPP training program again, following the ANPP reassessment.

# 5. Maintenance Backlog

Mr. Driscoll opened the discussion by describing the manner in which work orders at Palo Verde are prioritized. Mr. Shriver then described ANPP efforts to assess the maintenance backlog in preparation for the management meeting. The licensee reported that they found the number of work items requiring actual performance of work in the field difficult to determine, due, in part, to the manner in which the maintenance work order system has been utilized. For instance, at the time of the meeting, Unit 1 had approximately 250 outstanding priority 2, safety related, work orders. Priority 2 would normally indicate prompt attention to the item is warranted. The Region V personnel observed that 250 items appeared to be a relatively large number of priority 2 items. The licensee replied that a closer review of the items revealed that many of the outstanding items were inappropriately classified as priority 2, or were no longer valid. Other work items were found to have been completed and were still listed while awaiting a final documentation review. The above situation has apparently made it difficult for ANPP management to closely trend the maintenance backlog.

The licensee agreed that both the number of items backlogged and trending of the backlog was a problem. Mr. Martin stated that ANPP should reassess the status of all corrective and preventative maintenance at Palo Verde, and, on an urgent basis, review each item at Unit 3, schedule action to address each item, and reach agreement with the NRC on the prioritization of Unit 3 items. Mr. Van Brunt responded that ANPP would review the maintenance backlog at Unit 3 and provide their assessment to Region V as promptly as possible. Mr. Martin suggested that ANPP solicit assistance from INPO to evaluate the ANPP maintenance control system. Mr. Martin also requested that the Quality Assurance role in the maintenance area be discussed at a future NRC/ANPP meeting.

### 6. Bogus Annunciator Reduction Program

Mr. Haynes described the ANPP program to reduce the number of control room annunciators which are inappropriately lighted. The ANPP stated goal is a "black board," meaning no lighted annunciators. Progress to reduce the total number has been limited by the number of new annunciator problems which have developed. For example, the licensee reported that during the period of May through August, 250 annunciator problems were closed while 200 new items were opened. Mr. Haynes stated that a high priority has been placed on reducing the number of bogus annunciators. He also stated that the total number remaining at Unit 3 at the end of 1987 was scheduled to be 10 or less. Mr. Martin suggested that ANPP needs to establish goals and schedules for all three units. The licensee's progress in this area will be discussed at a future meeting.

#### 7. Unit 1 Shutdown Due to Weld Leak

On August 27, 1987, Unit 1 was shut down due to an unisolable reactor coolant system pressure boundary leak at a weld on a small diameter pipe normally used during shutdown conditions to install a temporary level indicating system. At the time of the event, the leak rate was reported to be less than 0.5 gallons per minute. Mr. Shriver described the ANPP efforts to determine the root cause of the cracked weld. Analysis presently indicates that the failure was the result of fatigue. The exact cause of the failure has not been identified; however the licensee's review was still in progress. Mr. Martin emphasized the importance of determining the true root cause of any reactor coolant system pressure boundary leakage. Mr. Martin requested that the ANPP efforts in this area be updated at the next ANPP/NRC meeting. The licensee then described the additional reviews, of other piping configurations, being conducted as a result of this event.

### 8. <u>Review Committee Effectiveness</u>

The ANPP review committees include the Independent Safety Engineering Group (ISEG), the Nuclear Safety Group (NSG), and the Plant Review Board (PRB). In light of the pending ANPP reorganization, Region V questioned the ANPP representatives with regard to actions planned to ensure that these review committees perform in a manner which contributes to enhanced facility performance. Mr. Martin stated that the expectations of the groups should be made clear and that the groups would function more effectively when held accountable for their performance. The licensee suggested that the groups, and in particular the PRB, are hindered in their performance by technical specification requirements. Mr. Martin recommended that ANPP explore improvements in the technical specifications with the NRC Office of Nuclear Reactor Regulation and observed that other facilities have recently revised their technical specifications to enhance review group effectiveness.

### 9. Design Basis

Mr. Martin opened the discussion by describing the problems other facilities have had in gathering together the design basis for their plants. He noted that the possession of the complete design basis is necessary to properly understand the operation of a plant and to correctly modify plant systems. Mr. Van Brunt stated that ANPP was working on bringing together the design basis. Mr. Martin observed that this task is a major undertaking if done correctly and encouraged ANPP to ensure that their actions would capture all pertinent information.

Mr. Martin questioned the involvement of the corporate engineering personnel in site problems. He observed that utility engineering staffs rarely feel any ownership of plant systems and tend to remain removed from plant problems until specifically tasked with an action. Mr. Martin noted that a strong engineering organization is a necessity for a well run plant. Mr. Allen stated that ANPP is working to involve corporate engineers in plant problems by assigning engineers responsibility for specific systems. Mr. Martin requested that the role of engineering be further discussed with the NRC during the next several months.