

Note To: File  
From: Dave Trimble *DT*  
Date: April 6, 1990  
SUBJECT: COMMISSIONER CURTISS' VISIT TO PALO VERDE

#### INTRODUCTION

Commissioner Curtiss visited the Palo Verde facility on February 1, 1990. He was accompanied by Mr. Bobby Faulkenberry, Deputy Regional Administrator for Region V, and Dave Trimble, his Technical Assistant.

During the visit the Commissioner met with the following key personnel:

Jim Levine	VP, Nuclear Production
Walt Marsh	Plant Director
Jack Bailey	VP, Nuclear Safety & Lic.
Blaine Ballard	QA Director
Tom Cogburn	(Acting) Dir. Tech. Support
Bill Ide	Unit 1 Plant Manager
Doug Heinicke	Unit 2 Plant Manager
* Ed Firth	Manager, Nuclear Training
* Dan Phillips	Unit 1 Maintenance Mngr.
* Jeff Summy	Systems Engineer Supervisor
Doug Coe	Acting Senior Res. Insp.

Note: Mr. Bill Conway, Executive VP, was not able to be present for the site visit. He did, however, visit with the Commissioner at OWFN on Feb. 9, 1990.

#### HIGHLIGHTS

The Palo Verde facility has undergone a radical change in management personnel. Although many corrective actions and improvement programs have been initiated, the biggest challenge before the utility is to bring discipline, integration and focus to these efforts. Then there must be follow-through.

Palo Verde is experiencing problems with high attrition of licensed operators. Attention must be paid to this area.

#### PALO VERDE VISIT

##### Background

On January 29, 1990, Commissioner Curtiss was briefed on the facility status and problematic areas by the NRR Project Manager,

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Terrence Chan, and the Acting Director, Project Directorate V, Charlie Trammell. He received a similar briefing, over a working breakfast on the day of the plant visit, from Bobby Faulkenberry and the Acting Senior Resident Inspector, Doug Coe. The Diagnostic Inspection Team had recently completed the onsite portion of their inspection and some of the preliminary findings were shared with the Commissioner.

Although the construction effort at Palo Verde had been well managed, the transition from a construction to an operating organization was poor. The utility's problems were compounded by a decision in early 1987 to operate the units independently, with each unit having its own management structure, which led to consistency and coordination difficulties. During this time, very little assistance was provided to Palo Verde by its part owner, the more operationally experienced Southern California Electric (SCE). A March 3, 1989, loss of load event/reactor trip event on Unit 3, in which multiple equipment failures occurred (most noticeably failures of atmospheric dump valves) served to highlight the extent of weaknesses at the facility. The event had precursors which had not been acted upon. Recommended preventive maintenance on the dump valves had not been performed nor had modifications recommended by the vendor been incorporated. The utility was generally weak in identifying and correcting problems.

In response to these problems, Arizona Public Service (APS) began making significant management changes, beginning with the hiring of Bill Conway, the new Executive Vice President. Eleven other individuals and one consultant were brought into the organization in management positions from outside.

The new management team has embarked upon and, in some cases, continued a number of improvement initiatives.

On the day of the visit Unit 1 was in a refueling outage, Unit 2 was operating at 100% power and Unit 3 was escalating in power (current power was 78%) to 90% -- a hold point while the licensee was monitoring performance of the control system for "B" main feedwater pump.

#### Details of Site Visit

The Commissioner arrived on site about 8:30 a.m. and attended the licensee's morning status meeting. The meeting was chaired by the new VP for Nuclear Production, Jim Levine.

The Plant Director, Walter Marsh, and the Plant Managers for Units 1 and 2, Bill Ide and Doug Heinicke, led the party on a tour of the facility. Messrs. Marsh and Heinicke -- as well as the position of Plant Director -- are new to the organization. A principal function of the Plant Director is to ensure consistency

in the operation of the three units. The plant tour included the following areas:

- Newly constructed Operations Support Building for Unit 2 which included new mechanical maintenance/machine shop and I&C/Electrical shops -- ultimately each unit will have one of these buildings;
- Unit 2 Control room;
- Unit 1 battery rooms;
- Unit 1 remote shutdown panel;
- Unit 1 "A" Diesel Generator (Cooper Bessemer);
- Unit 1 atmospheric dump valve (ADV) area;
- Unit 1 electrical transformer area;
- Unit 1 PASS station;
- Unit 1 AFW pump rooms; and
- Unit 1 ECCS pump rooms.

The following observations were made during the plant tour. A relatively high number (18) of annunciators, given that the plant was operating at power, were lit in the control room. Four or five of these were due to testing in progress. The licensee stated that they are emphasizing efforts to reduce lighted annunciators, but they acknowledged that additional work in this area is needed. Operators did not wear uniforms. With the exception of the STA's, control room personnel stand 12 hour shifts. The STA's stand 24-hour shifts. Operators liked the 12-hour shifts because it means fewer trips/week to the site -- the plant is about an hour drive from Phoenix. The utility feels the 12-hour shifts are beneficial because they result in fewer shift turnovers/day and hence fewer opportunities for lost information. A couple of deficiency tags on the control boards dated back to the 1985/1986 time frame. The licensee stated that all deficiencies were scheduled to be resolved during the refueling outage beginning in Feb. 1990. The licensee was not sure whether they would be able to complete the ATWS modifications on Unit 2 during this upcoming outage. The shafts and impellers for all 4 Reactor Coolant Pumps are scheduled for replacement during this outage due to stress corrosion cracking problems. Fifty-nine temporary modifications were in place on Unit 2. The utility feels this is too high a number and hopes to reduce this amount to about 10 to 15. The Plant Managers meet three times per week as one means of improving communications and providing consistency among units. Although the overall attrition rate for the facility is low (about 2% per year), attrition for SRO's is very high (about 20%). Most of the SRO's are lost to other groups within the company. To stem the losses, APS has instituted a "golden handcuffs" program involving bonuses for 3 years for SRO's remaining in the control room. Palo Verde has had its share of Cooper Bessemer Diesel problems -- a cracked rocker arm and a thrown connecting rod. Given this, it was surprising that the Plant Director did not appear very knowledgeable of recent Cooper Bessemer problems at South Texas.

Lighting in the diesel generator room was poor.

Following the facility tour the licensee provided an assessment of their weaknesses together with a summary of their various corrective action/improvement programs. These programs include:

- Formation of a senior management review committee headed by Bill Conway to oversee the restart of the units and to convey management's performance expectations to the plant staff;
- Development of a Management Observation Program to ensure that managers are spending time in the plant observing work in progress;
- Development of a self-initiated SALP and Maintenance Team Inspection;
- Formation of unit restart task forces to improve plant restart performance;
- Design Configuration Assessment;
- Request for INPO to perform a design engineering assessment;
- Development of an independent assessment of safety oversight groups;
- Formation of training program project management task forces to improve the management and performance of training activities;
- Enhancements to QA by focusing on performance-based reviews;
- an Incident investigation program; and
- site facilities improvements;

In the afternoon, the Commissioner held one-on-one meetings with the individuals noted in the Introduction. The Unit 1 Maintenance Manager indicated that they may eventually combine the maintenance groups for all three units. He stated that, although they are keeping abreast of the industry efforts to develop RCM programs, not much has been done in this area at Palo Verde. He felt that an NRC complaint about lack of maintenance technician inquisitiveness could be resolved by giving the workers more time per activity, i.e. they are just too rushed to have the luxury of being inquisitive. He believed that maintenance standards are needed in the industry. The Systems Engineering Supervisor stated that the principle challenge in his area is to better define the responsibilities of the systems engineers. They are overloaded currently. He stated that higher management is becoming more responsive to his concerns. He confirmed an earlier comment made by the Commissioner that APS needs to get better control and improve coordination of the many ongoing improvement programs. The Training Manager believes that senior management is committed to training. His biggest challenges are to upgrade simulator fidelity and to provide continuing staff training and initial training for engineers and technical support personnel.

### Concluding Remarks

In his concluding remarks to facility management, the Commissioner noted that previously, during a 1983 visit to Palo Verde when the facility was still under construction, he had been impressed by their control of construction activities. He was surprised and disappointed when he later learned of the difficulties they were having after the transition to the operational phase. He stated that he sees the potential for Palo Verde, given the significant capabilities of the employees and the high quality of the physical plant, to be one of the best facilities in the country. He was impressed by the initiative being demonstrated by the new management team. He saw a healthy process ongoing in problem identification. Their biggest challenge now is to bring discipline to their many corrective action and improvement programs. They must sharply focus and integrate the programs and then follow through to completion. He stated that the NRC will continue to look carefully at Palo Verde with great expectation.