COALITION FOR RESPONSIBLE ENERGY EDUCATION
315 West Riviera Drive
Tempe, AZ 85282
January 12, 1986

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50-530

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

RE: Show Cause Petition Pursuant to 10 CFR 2.206(a) In the Matter of Arizona Public Service, et al. (Arizona Nuclear Power Project - Palo Verde Nuclear Generating Station, Unit Nos. 1 and 2), Requesting Suspension of PVNGS No. 2 Operating License Pending Completion of Specified Regulatory and Corrective Actions; Institution of Proceeding on Management Competence and Financial Qualification of ANPP; and Institution of Special Regulatory Actions Re: PVNGS Nos. 1 and 2. Docket Nos. 50-528, 50-529 (License Nos. NPF-34 and NPF-41)

1. This petition is brought by the Coalition for Responsible Energy Education (hereinafter referred to as "Coalition" or "CREE") before the Director, Nuclear Reactor Regulation, pursuant to 10 CFR 2.206(a). The petition alleges that there exists considerable evidence of management incompetence in the Palo Verde Nuclear Generating Station (PVNGS) Unit 1 startup program, sufficient to cast doubt on the ability of the managing utility to safely conduct startup operations and power ascension at PVNGS-2, and therefore constitutes an unreviewed safety question. Additionally, the petition raises closely related concerns which further justify suspension of the PVNGS-2 operating license until completion of the specific regulatory and corrective actions herein requested. The petition requests service upon Arizona Public Service/Arizona Nuclear Power Project (APS/ANPP) of an order to show cause, pursuant to 10 CFR 2.202, why the low power operating license for PVNGS-2 should not be suspended and further licensing activity for PVNGS-2 deferred, pending completion of the requested regulatory and corrective actions, and a proceeding initiated under 42 U.S.C. 2239(a).

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2. It should be emphasized that the relief sought by this petition is not the ultimate denial (i.e., reversal) of the PVNGS-2 operating license, but rather its suspension until the completion of regulatory and corrective actions responsive to the concerns identified herein.

DESCRIPTION OF PETITIONER

3. The Coalition is a non-profit volunteer organization based in central Arizona, principally Maricopa County. The Coalition's headquarters are located at 315 West Riviera Drive, Tempe, Arizona. CREE was founded in 1982 to address energy issues in Arizona, with special emphasis on nuclear power, through public education, research, litigation and advocacy. The Coalition, through its officers and attorneys, has represented its members through show cause petitions and in meetings with the U.S. Nuclear Regulatory Commission (NRC/the Commission), as well as in utility rate cases and financing hearings before the Arizona Corporation Commission. The Coalition's membership consists of individuals residing in and organizations located in the state of Arizona.

SUMMARY

4. Hereinunder, the petition reviews incidents of repeated administrative and procedural errors during PVNGS-1 startup, repetitive failures to properly implement corrective actions affecting a variety of plant systems, and several instances of inadequate communication, both internally, within the ANPP organization, and to the NRC. The petition reviews concerns reflecting negatively on ANPP management competence expressed by the

NRC, particularly the Advisory Committee on Reactor Safeguards (ACRS) the Systematic Assessment of Licensee Performance (SALP) Report Board, and the Inspector's Office. CREE summarizes its own analysis of PVNGS-1 startup difficulties, in which it concluded that there exists "a pattern of recurring deficiencies in critical areas of management control, personnel procedures and prompt and reliable reporting of problems" which "reflect directly on [ANPP] management attitudes and competence." CREE maintains that the continuing pattern of ANPP managerial and administrative areas suggests that piece-meal attention by the NRC to identified problem areas may merely shift the locus at which future problems arise, suggesting that ANPP management is strained and may become overburdened by the operation of an additional unit at this time. Accordingly, the petition recommends the initiation of special, broadly gauged inspection and enforcement activities, to assure that the root cause of the problems is corrected, and, further, that the PVNGS-2 operating license be suspended until such time as these problems are demonstrably corrected. The petition notes that the NRC has recognized the issue of management competence and character in the past as raising potentially serious safety issues. See Houston Lighting and Power Co. (South Texas Project Units 1 and 2), CLI-80-32, 12 NRC 281 (1980). In the instant case of PVNGS-2 licensing, the petition alleges that NRC actions and procedures to date have been inadequate and insufficient to provide the necessary assurance to the general public that ANPP managment competence problems have been or will be resolved.

AUTHORITY

5. Title 10 of the Code of Federal Regulations 2.206(a) establishes the right of the public to petition the Commission, Director of Nuclear Reactor Regulation, and other specified directors to institute proceedings pursuant to 10 CFR 2.202 to modify, suspend or revoke a license, or for other relief as may be proper. Such a petition must specify the relief requested and set forth the facts that constitute the basis for the request. The Commission may, pursuant to 10 CFR 2.206(a), institute such a proceeding by serving upon the licensee an order to show cause.

6. 10 CFR 2.206(b) established that the appropriate director shall institute said proceeding or advise the person requesting said proceeding in writing of the reasons for denying the request "within a reasonable time."

7. The Atomic Energy Act of 1954 gives discretion to revoke, suspend or modify the license or construction permit of an NRC licensee:

> A license or construction permit may be revoked, suspended or modified in whole or in part... because of conditions revealed by the application for license or statement of fact or any report, record, inspection, or other means which would warrant the Commission to refuse to grant a license on an original application; or for failure to construct or operate a facility in accordance with the terms of the construction permit or license or the technical specifications in the application; or for the violation of or failure to observe any of the terms and provisions of this chapter or of any regulation of the Commission.

42 U.S.C. 2236.

. . . . .

8. Notwithstanding the discretionary aspect of this statute (supra), the NRC has a mandatory duty to exercise its authority when necessary, and is required to determine that there will be adequate protection of the public health and safety. See Natural Resource Defense council vs. U.S. Nuclear Regulatory Commission, 528 F. 2d 166 (2d Cir., 1978).

9. The Director and Commission are not obligated under 10 CFR 2.206 to grant the requested relief nor to hold a formal hearing on the request. Although such action is discretionary, the Supreme Court has determined that the Atomic Energy Act mandates that "the public safety is the first, last and permanent consideration in any decision on the issuance of a construction permit or a license to operate a nuclear facility." Power Reactor Co. v. Electricians, 367 U.S. 396, 402 (1961), quoting In Re Power Reactor Development Co., 1 AEC 128, 136 (1959). How the NRC fulfills this mandate, particularly in determining the benefits of a discretionary hearing, is discussed below.

10. First, a hearing should not be ordered when to do so will result in the reconsideration of issue:

> Parties must be prevented from using 10 CFR 2.206 procedures as a vehicle for reconsideration of issues previously decided, or for avoiding an existing forum in which they more logically should be presented.

Consolidated Edison Co. of New York, et al. (Indian Point Units 1, 2 and 3), CLI-75-8, 2 NRC 173, 177 (1975).

11. This petition addresses a possible unreviewed safety question that has not previously been brought to the attention of

the Commission. The majority of the incidents identified herein, as well as the concerns raised by the ACRS, the latest SALP Report, etc., arose during the course of Unit 1 startup testing at PVNGS. The vast majority, including the aforementioned ACRS and SALP concerns, arose and/or were identified after the conclusion of the limited Atomic Safety and Licensing Board (ASLB) hearings on Units 2 and 3 licensing conducted in Phoenix, Arizona, on and about June 12, 1985. While the majority of the specific incidents herein discussed were identified by the NRC, and in some instances, enforcement action or other action by the NRC has occurred, the central point of this petition - i.e., the totality of these incidents as reflecting a pattern raising doubts as to management competence and/or character - have not been previously addressed. There are no existing forums. An operating license has been issued for PVNGS-2, and was issued before some of the critical documents cited in this petition - in particular, the SALP Report (December 19, 1985) - were issued. The Coalition does not seek to reexamine the issues reviewed in granting the PVNGS-1, 2 and 3 construction permits and the PVNGS-1 and 2 operating licenses, but rather to examine whether the licensee now meets, will continue to meet, or indeed can meet the requirements of said permits and licenses, the Safety Analysis Report (SAR), and the Rules and Regulations of the NRC, and further, if there is reasonable assurance that operation of either and, particularly, of both Units 1 and 2 under the current circumstances will not jeopardize the public health and safety.

12. In Indian Point, supra, the Commission considered what existing forum might be best suited to address the matters at issue. Neither the deliberations on full-power operation of PVNGS-2, including the ASLB hearings, nor recent ACRS meetings constitute the logical forum. Excepting the ASLB hearings, which were held prior to the availability of most of the information contained herein, they are not contested case proceedings in which the petitioner could raise its concerns. A request for hearing and petition to intervene pursuant to 10 CFR 2.714 would be untimely in the extreme at this stage. Accordingly, a petition for an order to show cause pursuant to 10 CFR 2.206(a) and 10 CFR 2.202 constitutes the logical forum in which to raise these concerns, and probably the only forum available.

13. The fact that the PVNGS-2 operating license has been issued and other procedural steps completed should not jeopardize this petitioner's right to a fair consideration of the issues raised herein. The provisions of Indian Point merely address the question of existing forums. They do not alter the fact that a utility with a construction permit or low-power operating license bears the burden of proof:

> We think it ineluctable that a utility must bear the burden of proving compliance with the Commission's safety regulations not only at the beginning and end of the nuclear licensing process - but, as in this case - when called upon at some interim point to "show cause" why a construction permit should not be lifted for unsafe construction practices. Where nuclear power plants are involved, public safety is indisputably better served if a utility must stop construction practices it cannot prove safe; a decision that it may continue those practices because someone else cannot prove them unsafe is manifestly not one which places public safety considerations first.

Consumer Power Company (Midland Plant, Units 1 and 2), ALAB-315, 3 NRC 101, 104 (1976). Clearly, the same reasoning applies to operating as to construction practices. The point is that the paramount importance of public safety places the burden of proof of safe practices on the licensee. A petitioner need only provide the NRC Staff with "sufficient reason" to look into the matter of suspension of a license or other relief, but is not required to assume the burden of proof itself. Indian Point, supra. The public's right to due process of law, as well as public safety policy, dictates that this should be so.

13. However, the petitioner naturally has some responsibility to prove its case:

> [T]he standard to be applied in determining whether to issue a show cause order is, as we have said in Indian Point, whether "substantial health or safety issues [have been raised...." A mere dispute over factual issues does not suffice.

Indian Point, supra at 177. Another test against which any request for a discretionary hearing must be judged is whether such a proceeding would serve any "useful purpose." Public Service Co. of Indiana (Marble Hill Nuclear Generating Station, Units 1 and 2), CLI-80-10, 11 NRC 438, 443 (1980). The dissenting opinion in Marble Hill suggests a two-fold interpretation of "useful purpose," the first of which is the public's right to know the risks with which they live (considered to be predicted on widespread public interest).

14. Most importantly, the "useful purpose" to be served by a discretionary hearing is the technical resolution of problems

which results in a greater degree of safety afforded to the public.

15. While not constituting the sort of narrowly technical issue with which the Commission must most frequently deal, the issue of management competence and character is a significant one with serious safety implications. The Commission has recognized this fact in the past, e.g., in the South Texas case, in which an extensive investigation of management competence and integrity resulted in serious findings and a major enforcement order. Houston Lighting and Power Co. (South Texas Project, Units 1 and 2), CLI-80-32, 12 NRC 281 (1980). The Commission further recognized the urgency of these issues by ordering the ASLB to hold expedited hearings. South Texas Project, 12 NRC at 290-292.

16. The primary test of "useful purpose" is based on what kind of regulatory action best serves the public welfare. As a general rule, the Commission has held that:

> public health and safety is best served by concentrating enforcement resources on actual field inspections and related scientific and engineering work as opposed to the conduct of legal proceedings.

Marble Hill, supra. The Appeals Board elaborated these roles:

> [W]here the matter is not one of inevitability of harm but rather the extent to which the applicant is carrying out its obligations, the Commission's enforcement arm comes into play. It is in the first instance an enforcement and not an adjudicatory function to make certain that license conditions are being satisfied. It is left to enforcement personnel to insure that an unnecessary or avoidable impact is not incurred because of the applicant's lack of diligence.

Public Service Co. of New Hampshire, et al. (Seabrook Station, Units 1 and 2), ALAB-356, 4 NRC 525 (1976).

17. This notwithstanding, the Atomic Energy Act and the implementing regulations of the NRC recognize that the role of enforcement actions is limited, by providing for legal proceedings.

18. The limited efficacy of routine enforcement activities is particularly relevant to the instant case. It is the backbone of the petitioner's case that a pattern of recurring instances of managerial and administrative errors has occurred during PVNGS-1 startup, <u>despite repeated NRC enforcement actions</u>. Moreover, it is contended that such questions of general management and administrative competence and character go beyond the piece-meal approach that characterizes routine inspection, enforcement, and even licensing practice. The argument, developed in more detail below, is that such general <u>patterns</u> of administrative deficiencies cannot be adequately addressed by practices which focus narrowly on specific, isolated incidents. This conclusion is central <u>both</u> to the request for a discretionary hearing and for special inspection and other regulatory actions discussed below.

19. As interpreted by the "Proposed General Statement of Policy and Procedure for Enforcement Action," 44 Fed. Reg. 66754, October 7, 1980 (implementing 10 CFR.2.202 and 2.204), suspending orders can be used to remove a threat to the public health and safety. Specifically, suspension orders can be used to stop activity when further work or operation would preclude or significantly hinder the identification or correction of potentially hazardous conditions, or for any other reason for which license suspension, modification or revocation is legally

authorized.

20. 10 CFR 50.57(a3) and (6) provide findings required for the issuance of an operating license:

> There is reasonable assurance (i) that the activities authorized by the operating license can be conducted without endangering the health and safety of the public, and (ii) that such activites will be conducted in compliance with the regulations in this chapter;

and:

> The issuance of the license will not be inimical to the common defense and security or to the health and safety of the public.

21. In the instant case, it is precisely such assurances that are alleged to be lacking, based upon the track record for management competence and character and compliance with the federal regulations established by APS/ANPP during PVNGS construction and preoperational testing and, particularly, PVNGS-1 startup and power ascension.

22. It is manifest that previous inspection and enforcement activities were inadequate to prevent the alleged pattern of management and administrative lapses from developing, as is discussed in detail below. Moreover, the petition raises the question of whether, in the normal course of things, routine inspection and enforcement activities are likely to uncover the extent of such generalized organizational inadequacies and whether the are capable of fully addressing their root cause or causes.

23. The Appeals Board has explained two reasons to grant a petition for discretionary hearings:

. . . . .

> ...the NRC already provides a separate procedure, under 10 CFR 2.206, for any interested person to seek enforcement actions beyond those adopted;

and:

> [The request should] state specifically what additional facts might be uncovered by a public hearing that has not been or will not be by pending investigations.

Marble Hill, supra at 443.

24. This petition seeks enforcement actions beyond those already adopted, in the form of special inspection and supervisory actions and in the form of the requested discretionary hearing. In addition, it is maintained that conditioning PVNGS Unit 2 operating authorization on satisfactory performance and demonstrable improvements in management performance will incentivize the utility to correct deficiencies far more effectively and reliably than measures previously adopted by or otherwise available to the NRC.

25. While the threshold of "inevitability of harm" is difficult or impossible to define, it is intuitively obvious that operation of an additional nuclear unit will further burden the utility's management resources, a concern which has also been expressed by the NRC, as discussed below. By so doing, operation of PVNGS-2 inevitably lessens the distance to that threshold of harm, wherever it may lie.

26. The generalized, prevasive nature of questions of management competence and character make it difficult to specify what new facts might be uncovered by a hearing, or indeed by the requested special inspection activity. Assuming some basis for the claim

of management shortcomings, however, it is, logically, highly probable that such facts would emerge. Additionally, expertise not normally utilized in routine NRC technical and regulatory activities - e.g., insights from the various social, behavioral and managerial scientific disciplines which deal with questions of organizational and systems behavior - could be brought to bear. Finally, as the discussion below indicates, additional examples of management shortcomings would be elicited.

STATEMENT OF FACTS

27. In 1976, construction permission was granted for Palo Verde Nuclear Generating Station, Units 1, 2 and 3. Construction was financed by a consortium of utilities, the Arizona Nuclear Power Project. Arizona Public Service - a medium-sized utility with no previous nuclear operating or construction experience - was chosen project manager. According to the chief executive officer of Salt River Project (SRP), the other Arizona utility ultimately participating in the PVNGS project, the choice of project manager was based on a coin flip between the two Arizona partners. (See "Exhibit D," attached and fully incorporated by reference.)

28. In 1982, Atomic Safety and Licensing Board hearings on PVNGS Units 1, 2 and 3 were conducted in Phoenix. Two contentions, regarding the availability and quality of emergency water supplies and anticipated transient without SCRAM capability, were heard. Several additional contentions previously filed by the intervenor Palo Verde Intervention Fund were withdrawn before ASLB hearings. A third contention regarding the financial qualifications of the

managing utility, APS, was not heard, due ultimately to the initial elimination of the financial qualification review rule shortly before the commencement of said hearings. During the hearings, various worker allegers surfaced, resulting in NRC inspection activites culminating in a special Construction Assessment Team (CAT) inspection of the PVNGS construction project in 1983 and the imposition of two civil penalties against project manager APS.

29. PVNGS Unit 1 was issued a low power operating license and the fuel loading process was begun on January 7, 1985. Initial criticality was achieved, May 25, 1985, and full power authorization was granted, May 30. The ASLB conducted limited hearings on a West Valley Agricultural Protection Association water contention affecting Units 2 and 3 during June, 1985. In October, 1985, the NRC proposed a $50,000 civil penalty against ANPP for errors involving the PASS radiation monitoring system at Unit 1. The penalty was not contested and the fine was subsequently paid by ANPP. "Notice of Violation and Proposed Imposition of Civil Penalty," October 8, 1985, NRC Docket No. 50-528. On December 9, 1985, the NRC issued a low power operating license for PVNGS-2.

30. The PVNGS-2 operating license enumerates several limitations. Palo Verde Unit 2 Operating License (Preliminary) No. NPF-1. In addition, prior to receipt of said license, on November 20, 1985, the licensee informed the NRC of the following special measures:

. . . . .

> ANPP will implement the following measures during the performance of NRC required power ascension testing on PVNGS Unit 2 to assure the opportunity for management and staff attention to PVNGS Units 1 and 2.
>
> i) PVNGS Unit 2 activities will progress only when adequate resources are available to assure that these activites are conducted properly.
>
> ii) Ascending mode changes (e.g., Mode 2 to Mode 1) will not occur unless the other unit (either Unit 1 or Unit 2) is in a stable operating condition.

Attachment 3, Correspondence from VanBrunt (ANPP) to Knighton (NRR) November 20, 1985, "Unit 1 Power Ascension Testing."

31. While these limitations are indicative of concerns raised by the NRC and discussed below regarding the risk of overburdening ANPP management resources through simultaneous operation of Units 1 and 2 as immature plants, the petitioner maintains (see discussion below, "Discussion of Issues") that they do not, by themselves,provide adequate assurance that sufficient management resources will be available to conduct simulataneous operations properly and safely.

32. Shortly after issuance of the PVNGS-2 operating license, the NRC released its annual Systematic Assessment of Licensee Performance (SALP) Report on PVNGS for 1985. SALP Report Nos. 50-528/85-36, 50-529/85-38 and 50-530/85-28, December 19, 1985. The SALP Board recommendations in the "Plant Operations" category concluded:

> Although site management involvement in plant operations, particularly Unit 1, has been adequate, while a relatively high tempo of operational activity continues on Unit 1, the licensee should ensure that site management and technical support resources do not become overly burdened, as Palo Verde 2 enters the operational phase.

SALP, supra, p. 6. (Emphasis added.)

33. Relatedly, in the Board Recommendation on "Startup Testing," the SALP Report recommends:

> The licensee should maintain a slow, conservative approach toward the remainder of the power ascension test program.

SALP, supra, p. 30.

34. The NRR Input to SALP Report (Appendix 1) ranked ANPP at level 2 in each of its seven performance criteria areas,* resulting in an overall ANPP performance rating for licensing activities at the Category 2 level. In discussing this Category 2 overall rating, NRR notes:

> This performance rating of ANPP is the same as for the last SALP reporting period (March 1, 1983 through March 31, 1984). ANPP's continued performance at this level is attributed to the following; (1) the transition from construction to operation for Palo Verde Unit 1, (2) ANPP is concurrently involved with operation of one unit and the construction and testing of two other units at the site, and (3) Palo Verde Unit 1 is the first CESSAR System 80 plant to operate and is ANPP's first nuclear facility.

SALP, supra, Appendix 1, p. 2. (Emphasis added.)

35. Finally, as regards possible indications in SALP of NRC concerns related to possible strain on management resources related to the question of simultaneous Unit 2 startup - Unit 1 first-year operation, in the Analysis of PVNGS Training, the following observation is made:

> The initial operator training efforts resulted in sufficient licensed personnel for six shift operation at Unit 1. Recent efforts have also supported a six shift operation at Unit 2. The staffing level of licensed and non-licensed personnel is considered minimal for maintaining six shift operation when considering losses of personnel through transfers and attrition.

SALP, supra, p. 20. (Emphasis added.)

36. Similar concerns more informally expressed by NRC representatives have also been reported. According to a November 8, 1985, report in the Arizona Republic, Licitra commented during a meeting of the Advisory Committee on Reactor Safeguards on the need to avoid overburdening ANPP resources:

> ...[H]e would not look "very favorably" at having two units in a start-up mode at the same time.
>
> "We don't want to overtax management on two competing issues (units)," he said.

Arizona Republic, November 8, 1985, p. G-1; and:

> As Licitra, the NRC's project manager [sic] at Palo Verde, said during the meeting, he would not look "very favorably" at having two units in a start-up mode at the same time.
>
> ..."Actually, they don't want to overload Bynum," one NRC source said. Joe Bynum is plant manager for Palo Verde.

Arizona Republic, November 24, 1985, p. E-2. (See Exhibit E.)

37. In more general terms, Licitra was quoted as generally critical of ANPP management performance at Palo Verde during Unit 1 startup:

> Manny Licitra, the NRC's project manager for Palo Verde, said recently in Bethesda, Md., "I wouldn't hold Palo Verde up as a shining example. They're about average. Good operators, good housekeepers. But management, well..."

Arizona Republic, November 24, 1985, p. E-1.

38. Returning to the SALP Report, which covers the period April 1, 1984 - September 30, 1985, it does not directly assess overall management and administrative performance, management competence or character. However, some of the nineteen performance areas analysed, along with the aforementioned NRR assessment and supporting data, reflect fairly directly on at least some aspects

of management performance. Compared to the previous SALP review period, ANPP performance was judged to have improved in two areas (Preoperational and Startup Testing) and to have declined in one area (Emergency Preparedness). However, it should be noted, that those areas in which improvement was judged to have occurred since the last SALP rating period were still ranked Category 2, "adequate" but not indicative of a "high level of performance." SALP, supra, pp. 2-3. In the Emergency Preparedness category, performance declined, also, to level 2. Overall, three of the nineteen categories were judged level 1 (the highest level), or just under 16%, while the remainder were all ranked Category 2 (84%). Inasmuch as Preoperational and Startup Testing was ranked at level 3 during the previous SALP period, some improvement overall was evident. However, a decline in overall performance can also be inferred on a percentage basis. While there were no Category 3 ratings in the current SALP, approximately 21% of all functional areas had received the highest (Category 1) rating in the previous SALP. Systematic Assessment of Licensee Performance, Docket Nos. 50-528, 50-529, 50-530, June 11, 1984. Various interpretations of this data are possible, and precise comparisons are impossible due to significant changes in the functional area categories. However, one reasonable interpretation is that weaknesses have become less severe and concentrated, but more pervasive.

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39. Within the most recent SALP reporting period, performance was judged to have declined in the area of Emergency Preparedness. The Report noted: "...[P]erformance should be improved in the areas of surveillance, emergency preparedness, security, and subcontractor quality assurance, due to observed weaknesses or a declining trend." SALP, supra, p.3. ANPP performance in the Quality Program and Administrative Controls "was considered by the Board to be a marginal Category 2 rating, with significant difficulties." SALP, supra. (A Category 3 rating would have been indicative of licensee resources that are "strained or not effectively used." SALP, supra, p. 2. ANPP's marginal performance in this area was judged to have been consistent throughout the reporting period; i.e., little or no improvement was noted. SALP, supra, p. 17.

40. In assessing the meaning of the mariginal Category 2 rating in this area, the Regional Administrator, John B. Martin, addressed root causes:

> The quality program and administrative controls area was evaluated to be marginally Category 2. The Board considered that the quality weaknesses observed were not directly related to the quality assurance department, but rather reflected insufficient acceptance of the importance of quality by various production departments, as well as some lack of definition of clear responsibility for quality performance by senior management.

SALP, supra, cover letter p. 1. As discussed in greater detail below, this conclusion corresponds closely to the assessment made by the petitioner following its initial examination of PVNGS-1 startup performance on November 1, 1985:

. . . . .

> ...[R]ecent incidents raise concerns that go beyond technical questions affecting specific plant systems to the broader issue of overall organizational capabilities and attitudes of Palo Verde plant management;

and:

> These... incidents, suggest a pattern of recurring deficiencies in critical areas of management controls, personnel procedures and prompt and reliable reporting of problems.

CREE Statement, November 1, 1985, pp. 4, 1. (See Exhibit B.) It is of particular concern to the petitioner that the functional area given the lowest rating by the current SALP Report, Quality Program and Administrative Controls, is the one most directly related to CREE concerns about management competence and character, and that the causes of the marginal performance in this functional area are attributed to inadequate delegation of responsibility by senior management and inadequate inculcation of the importance of quality throughout the project organization, which is also a management function. CREE regards the latest SALP Report, in this and other functional areas, as confirming its preliminary diagnosis of the root cause of a significant portion of PVNGS-1 startup difficulties as rooted in the issue of management competence.

41. If there is a difference between CREE's November assessment and that of the SALP Board, it is in the seriousness each attaches to similar findings of recurring instances of inadequate managerial and administrative procedures and managerial performance. In part this possible discrepancy may be attributed to the analytical structure employed by the SALP study. As discussed in greater detail below ("Discussion of

Issues"), the establishment of analytical categories is a determining factor in the final assessment. Researchers normally see only what there analytical models prepare them to see. The division of the SALP Report into "functional areas" makes it less likely that consistencies in performance from one to another functional area will be identified. But, in its November statement and since, it is precisely the consistency of a recurring pattern of managerial and administrative lapses affecting a variety of plant systems and functional organizations that has concerned CREE. Exhibit B. In fact, a similar pattern of errors affecting a wide range of functional areas and rooted in inadequate or unresponsive management can be identified within the separate analyses for various functional areas in the SALP Report. These inadequacies include:

- continuing inadequacies in communications between Operations and other plant departments (SALP, supra, p.5);
- repeated shortcomings in Technical Specification compliance (p. 5);
- need for additional effort to ensure that management and support resources are not "overly burdened" by Unit 2 operation (p.6);
- "a breakdown in the control of technical work" in the radiological controls area and "weak" response to NRC identified issues in this area (p. 6);
- regarding the difficulties with the automated Post Accident Sampling System (PASS) and Radiation Exposure Management (REM) System (affecting both PVNGS-1 and -2): "These problems are representative of a poor management involvement in the development of these support systems" (p. 6);
- temporary modifications bypassing the design change process "in some cases" (p. 8);

- "repeated failure to observe some Technical Specifications (particularly surveillance)" (p. 9), and the need to maintain intensified corporate and site management involvement in the surveillance testing area until demonstrably improved performance is achieved (p. 10);
- need to improve the management of the training part of the emergency preparedness program (p. 12);
- problems associated with the training/emergency planning interface (p. 12);
- need to improve adminstrative methods for tracking the training status of emergency response personnel (p. 13);
- need to reevaluate ANPP's program for identifying weaknesses and deficiencies in the plant security program and applying timely corrective measures (p. 14);
- overdue responses to corrective action requests "in many instances" at all three units (p. 16);
- "repetitive violations regarding submittals of late LERs" and other timeliness problems in response to deficiencies, indicating the need for increased management effort (p. 16);
- a "relatively large number of Technical Specification violations" (p. 16);
- weaknesses in the licensee's subcontractor administration (p. 17);
- "questions on whether the licensee was sufficiently involved in the review process" for plant modifications (p. 17);
- "Technical Specification compliance problems indicated the need for both procedural improvements and greater attention to detail" (p. 17);
- recurring instances of incomplete or inaccurate reporting to the NRC (pp. 18-19);
- two incidents in particular (the PASS incident and problems involving the Auxiliary Pressurizer Spray System [APSS], initial identification of which coincided with the close of the SALP review period) indicative of "a lack of proper management attention" (p. 18); and
- "In addition, these events, coupled with other events during the reporting period, appeared to reflect, in some instances, that there was insufficient thought in

the preparation of test procedures and in system design (e.g., electrical distribution reliability) (p. 19);

- in the area of Licensing Activities, "Additional management attention is also warranted to understand events, including root causes, and to establish effective corrective actions to prevent similar occurrences" (p. 20);
- need to increase overview of Bechtel engineering evaluations and decisions to ensure compliance with NRC commitments (p. 23) (Same rating as previous SALP period, when NRC noted that "the management system for assuring quality particularly in QC effectiveness appears to have declined" - SALP '84, supra, p. 10);
- in the Piping Systems and Supports area, " a weakness in resident engineering's ability to timely and adequately evaluate identified deficiencies and perform accurate reviews of completed work" and "performance... not consistent" in the area of management overview of engineering evaluations (p. 24) (Same rating as previous SALP: "Management's attention to training and qualification effectiveness appears to have reduced" - SALP '84, supra, p. 12);
- in the specific functional area of Safety Related Components - Mechanical, continuing "concerns expressed in the last two SALP reports regarding licensee overview of subcontractor work" (p. 24) (Same rating as previous SALP);
- in Auxiliary Systems, continuing difficulties with subcontractor administration ("a greater effort by the licensee is needed because problems in this area persist") (p. 26) (Same rating as previous SALP); and
- in the Electrical Equipment and Cables area, violations rooted in "a failure of Field and Quality Control Engineers to properly interpret and follow procedural requirements," considered "significant;" and the recommendation "that the licensee take measures to assure personnel training in this area is adequate, and to restress the importance of procedural adherence (p. 27) (Same rating as previous two SALPS: "a need to improve performance in training and qualification effectiveness... greater management involvement in assuring quality is required" - SALP '84, supra, p. 15).

The petitioner considers it particularly disturbing that relatively little measurable improvement was recorded, particularly in areas involving the need for greater management involvement to assure

quality, from the previous SALP reporting period. The general lack of improving trend during the current SALP period - even though it was an extended (18 month) period - is also indicative of an overall failure by ANPP management to ensure the correction of previously identified weaknesses of a programmatic nature. Also, CREE concludes that the examples cited above are representative of the overall pattern of weaknesses at PVNGS, in that the majority of weaknesses are traceable to lapses in management control, procedures, internal communication, and inadequate stress on the importance of quality in all areas of plant construction and operation.

42. CREE's assessment that PVNGS problems are rooted primarily in areas directly related to management competence and character is supported by SALP Table B: Synopsis of Reportable Licensee Event Reports for PVNGS-1. SALP, supra, p. 40. Of 56 LERs analyzed therein, 25 (or 44.6%) were attributed a root cause involving "personnel error." Another 12 (21.4%) were attributed to "defective procedures." Thus, a total of 66% of all Licensee Event Reports (LERs) during the most recent SALP reporting period were due to personnel or procedural errors. By comparison, the combined total for "hardware" ("design, manufacturing or installation errors," "component failure" and "other") problems was only 33.9% (19 of 56).

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43. Equally of concern is that nature of the functional area which received the lowest rating during the current SALP rating period: Quality Program and Administrative Controls Affecting Quality. Although this area was not examined during previous SALPs, the 1984 SALP in particular diagnosed many of the instances of unsatisfactory or marginally satisfactory performance recorded during that period as rooted in quality assurance deficiencies. (See above.) Marginal quality performance reflects directly on management competence. South Texas, supra. Any time there is a widespread or recurring pattern of failures for which the utility is responsible, there is a question as to the ability or willingness of that utility management to remedy the situation and assure that the job is done right. Houston Lighting and Power Co., supra. This question is amplified by the fact that, in the instant case, the pattern of failures pertains to areas which are themselves directly managerial or administrative in nature (administrative controls, procedures, training, communications, promptness of response, utility technical understanding and/or candor, corrective actions, quality assurance and organizational interface problems). SALP 1983 (May 10, 1983) stressed organizational interface problems and quality assurance deficiencies. SALP 1984 (supra)stressed quality assurance deficiencies. Both recur in SALP 1985, and quality assurance is ranked "marginal." Increased management involvement is evidenced in several functional areas in SALP 1985, and in the area of organizational interface problems related to

plant operations, improvement is noted. However, while this improvement may indicate the path that future ANPP efforts to improve Palo Verde performance should take, the fact that examples of such improvement over the previous SALP are scarce indicates that management efforts to date have been inadequate. Moreover, the pervasive nature of the managerial deficiencies, arising in a number of different functional areas, raises the question of whether most of the significant areas of deficiency have been identified, or whether the recent SALP findings are only the tip of the iceberg. It is a common characteristic of both quality assurance deficiencies and managerial, organizational and administrative inadequacies that they necessarily raise this question. In any event, the fact of repeated failures by PVNGS plant management and ANPP to significantly improve performance in areas identified by last years SALP, and to demonstrate an upward trend in marginal areas during the current SALP period, logically suggests one or more of the following: inadequate NRC enforcement activity to date; strained management resources; and/or an unwillingness by ANPP to take agressive action.

44. Importantly, Quality Program and Administrative Controls Affecting Quality is specifically rated only "marginally Category 2." SALP, supra. Category 3 indicates strained management resources, raising to a point of urgency the question of the likelihood that the attempt to operate Unit 2 before a clear resolution of Unit 1 management difficulties will overburden ANPP resources.

45. Important in determining the likely ability of ANPP to cope with simultaneous Unit 2 startup/Unit 1 commercial operation is an assessment of the resources and experience of the managing utility. As noted, ANPP has no previous nuclear operating experience. While the experience of PVNGS-1 startup necessarily has increased ANPP "experience," strictly defined, it is important to note that ANPP also has no previous experience in dealing with the rigors of multi-unit operation, particularly when both units involved are immature. (See discussion below.) As noted above, the latest SALP expresses concern that the first year of PVNGS-1 commercial operation is likely to remain a period of stress for ANPP management. Also (above) SALP discusses the impact of maintaining two distinctive programs (startup and construction) as a possible factor in marginal performance. That factor is certain to increase once ANPP resources are further subdivided among three separate programs (PVNGS-1 operation, PVNGS-2 startup and power ascension testing, and PVNGS-3 construction and preoperational testing). Significantly, most of the significant plant shutdowns and NRC enforcement actions at PVNGS-1 occurred during the third and fourth quarters of 1985 (see below) - the period during which Unit 2 was entering intensive preoperational testing and turnover. The lack of improvement in most functional areas during the SALP 1985 review period is significant. There is little evidence that ANPP has gained significantly through its experience during Unit 1 startup.

46. Questions of quality assurance and, particularly, of management competence and character and adminstrative inadequacies are not like ordinary technical problems. The latter are precisely isolatable and narrowly definable, and specific corrective actions can be easily identified with a considerable degree of confidence. The human and organizational problems comprehended under the phrase "management competence," on the other hand, are much more pervasive and difficult to address. They are not restricted to a single plant system or production unit. As evidenced by the pattern of their repeated appearance in diverse functional areas in the latest SALP Report, they run like a thread throughout plant operations. They control the manner in which the plant manager responds to problems that may, in themselves, be minor. But, as has often been remarked, the human response to technical plant problems often makes all the difference between a "minor" and a "serious" incident. See, e.g., Report of the President's Commission on the Accident at Three Mile Island; The Need for Change: The Legacy of Three Mile Island, Washington, D.C., October, 1979. An example of this tendency of inadequate or incompetent performance by plant management to worsen an otherwise "minor" plant problem is provided by the history of the PASS problems at PVNGS-1.

47. In the accompanying letter to the PASS Notice of Violation and Proposed Imposition of Civil Penalty, October 8, 1985 (supra), the Regional Administrator John B. Martin notes:

. . . . .

> The violation also appears to be the result of a management failure to establish a system to ensure that this type of work is appropriately performed, reviewed and documented. This represents, in our view, a significant concern regarding the adequacy of work undertaken by your staff and contractors. The inspection also identified the need for you to give more attention to procedures and training in the post accident samplng area.

PASS Violation, supra, cover letter p. 1. (Emphasis added.)

48. The inspection effort that culminated in the imposition of a $50,000 fine in this instance was conducted from June 24 through July 12, 1985. NRC Inspection Report No. 50-528/85-22, August 2, 1985. It identified numerous instances of management failure, in several instance prolonged and repetitive, that led to improper locating of the PASS sampler at Unit 1 in violation of the Technical Specifications. Repeated notice was made of training inadequacies, and instances of inadequate or improper document control and approval, inadequate guidance in written procedures, utilization of unapproved source terms estimates, failure to perform required evaluations and drills in a timely manner, quality assurance failures, and failures to ensure compliance and accuracy of reported information were also identified in the course of the inspection. PASS Violation, supra, pp. 2-17. The inspectors noted:

> The licensee's failure to establish procedures containing information unique to sampling containment atmosphere under accident conditions including details of valve alignment, sampling connection points, sample purge time and other important information is considered a significant inadequacy.

PASS Violation, supra, p. 16. (Emphasis added.) And the inspectors conclude:

. . . . .

> All levels of management including the Chemical Services Manager, Radiation Protection Manager, Plant Manager, Nuclear Engineering Manager, Licensing Manager and the Assistant Vice President were aware of the 0737 requirements, problems with the PASS at PVNGS and industry experience with other PASS systems. No detailed independent technical review of compliance with the NUREG 0737 criteria, specifically GDC-19 for the containment air sample point was made prior to submission of the June 13, 1985 letter. This is considered a lack of adequate technical work and indication of inadequate management involvement to assure accurate presentation in correspondence to NRC. [See below.]

PASS Violation, supra, p. 17. (Emphasis added.) The report then continues:

> Although schedule pressure and preoccupation with development of the PASS liquid sample capability may have been a factor, no facts were revealed which would cause the inspectors to believe the apparent violation was deliberate, involved willfulness, careless disregard or an intentional false statement.

PASS Violation, supra, p. 17. (Emphasis added.)

49. It should be noted that the "evidence" relied upon for the determination that reporting inadequacies to the NRC were not deliberate is purely negative (i.e., no specific evidence to the contrary was disclosed), the alternative assumptions are scarcely comforting, particularly in light of the concerns raised in this petition. "All levels of management," including the PVNGS Plant Manager, the ANPP Nuclear Engineering Manager, and the APS Assistant Vice President, were aware of the relevant information, yet inaccurate reporting to the NRC occurred, under oath, on more than one occassion. The logical alternative suggested by the NRC - that ANPP management lacked technical awareness and/or was insensitive to the importance of the issue - is particularly disturbing in light of repeated apparent occurrences in other

areas, both before and after the inspection in question. Also, "schedule pressure" and "preoccupation" with other issues also "may have been a factor." (See discussion below.) It is precisely the probability of additional schedule pressures and preoccupation with competing issues arising from Unit 2 startup that this petition seeks to avoid.

50. As discussed below (see "Discussion of Issues"), besides its possible reflection on management character, accurate and efficient communication is essential to the proper functioning of any complex, technically sophisticated management organization; and communication inadequacies within ANPP, both internally and to the NRC, have not been limited to the PASS incident. (See below.) The cover letter to the PASS Violation notification from John Martin underlines the importance the NRC should attach to this sort of failure:

> ...[W]e are concerned that as a result of the deficiencies noted above, inaccurate information regarding the operability of the PASS system was submitted to the NRC. We emphasize that failures to adequately control evaluations and reviews of changes made to required systems can result in violations involving the reporting of inaccurate information to the NRC.

PASS Violation, supra, cover letter p. 2.

51. As noted, the NRC assumes that these reporting inadequacies reflect inadequate review procedures, lack of technical sophistication, and/or inadequate sensitivity to the importance of quality and proper procedures in some areas. Needless to say, all are relevant to the overall issue of management competence. All raise the significant possibility that ANPP procedures,

technical sophistication and sensitivity to quality issues will be overtaxed by simultaneous operation of Units 1 and 2, absent additional NRC enforcement action and demonstrable improvement in ANPP management capabilities. The contention, made by the petitioner, that ANPP is not adequately sensitive to such issues is further supported by recent incidents involving the Auxiliary Pressurizer Spray System (APSS) at PVNGS-1 and subsequent discussions before the Advisory Committee on Reactor Safeguards (ACRS).

52. Like the PASS, the APSS represents a significant unresolved equipment problem at PVNGS-1 and -2 for which only interim measures have as yet been implemented and which constitutes conditions which will have to be met under the provisions of the operating license. Apparently, ANPP's diagnosis of the nature and extent of the APSS difficulties reflected in early submittals to the NRC was inaccurate or inadequate. Although this incident occurred near the end of the recent SALP review period, the Report offers rather strong priliminary conclusions on ANPP's handling to that time of the APSS issue. Specifically, the Report cites it, along with the PASS incident, as one of two issues "which appear to indicate a lack of proper management attention" in the Licensing Activities area. SALP, supra, p. 18. In fact, the Category 2 rating assigned to this functional area is attributed to:

> ...(1) the two issues (PASS and the auxiliary pressurizer spray system) which appear to indicate a lack of proper management attention, (2) the extended amount of time required to resolve issues and the large number of last minute FSAR changes, and (3) the incomplete reporting of the September 12, 1985 [APSS] event....

SALP, supra, p. 19. (Emphasis added.) All three factors cited by SALP relate, rather directly and obviously, to the issue of overall management competence. The reoccurence of inadequate reporting to the NRC in the APSS context is particularly significant.

53. SALP raises several concerns related to management competence in this context:

> The licensee had stated in two letters dated November 3, 1983 and July 28, 1984 that the auxiliary spray system was a safety grade system. However, during an unsuccessful loss-of-load test at Palo Verde Unit 1 on September 12, 1985, the resulting plant performance showed that not all components of the system are safety grade and that the system is vulnerable to single failure. The staff's acceptance of the auxiliary spray system design was based, in part, on its understanding that the system was safety grade. As a result, the staff has issued a 50.54(f) letter to the licensee requesting the licensee to submit a program and schedule for bringing the auxiliary spray system into conformance with its licensing base.
>
> In addition, the licensee's reporting and analysis of the above event were incomplete and lacking information. Specifically, the licensee did not recognize the safety significance of losing the charging pumps as they relate to the reliability of the auxiliary pressurizer spray system. In addition, the post-trip review process did not focus on the importance of the auxiliary spray system for mitigating a steam generator tube rupture accident, nor did it specifically address how the plant performed in the initial natural circulation cooldown mode that resulted during the event.

SALP, supra, pp. 18-19. (Emphasis added.)

54. Again, the incident may reflect a more pervasive cause for concern. Although SALP is generally approving of ANPP's post-trip response during the review period, other reporting and anaysis deficiencies were noted. For example, the AEOD Input to SALP Review for Palo Verde 1 sample of 15 Licensee Event Reports

(LERs) arrived at an average score for LER texts of 6.8 out of a possible 10 points, which is marginal performance. SALP, supra, Appendix 2, p.4. Indeed, PVNGS-1/ANPP's performance in this context was eleventh out of sixteen licensees surveyed. Specifically, AEOD found: "The LERs were generally very deficient in the area of assessing safety consequences and implications." SALP, supra, p. 4. The AEOD assessment goes on to note:

> Corrective actions is another area that should be addressed and discussed thoroughly in each LER because by doing so many future events can be avoided. Obviously corrective actions are only as good as the determination of the root cause but if the root cause of an occurrence is adequately determined the proper implementation of corrective actions can greatly enhance future operation. Four of the 15 LERs evaluated did not adequatly address corrective actiions....

SALP, supra, p. 5. Moreover, twelve of 15 LER titles did not indicate root cause. SALP, supra, p. 6.

55. Obviously, management's capability to improve its technical sophistication and learn from experience is largely dependent on it willingness to learn and to take the time and make the effort required to do so. The Advisory Committee on Reactor Safeguard's initial reaction to the APSS and other incidents at PVNGS-1 cast ANPP's willingness to do so into serious doubt. According to reports:

> During the [November ACRS] meeting, Jesse Ebersole, committee chairman, recalled that four years ago, the committee made the recommendation that "system interaction" be studied, meaning the exchange of technical experience between operators of Units 1 and 2.
>
> "Have you made a systems interaction study?" Ebersole asked Haynes, APS vice president for nuclear production.
>
> "I don't think so," Haynes replied.
>
> "Do we just idly make recommendations?" Ebersole asked.

ARIZONA REPUBLIC, November 8, 1985, p. B-1 (Exhibit E). In light of the ultimate approval by the ACRS of ANPP's PVNGS-2 licensing plan and lack of enforcement actions, Chairman Ebersole's question continues to hang in the air.

56. Subsequent reports on ACRS discussions continued in a similar vein:

> "We suggest that they carry out a systems-interaction and reliability study," said Jesse Ebersole, chairman of the Nuclear Regulatory Commission's advisory committee on reactor safeguards (sic).
>
> "If they had done that (in 1981)the problems may have been discovered...."
>
> The panel urged the study in 1981, but it was not done.
>
> ...."They say they don't have to do these things because they do them in the normal course of their work," one of the 15 members complained.
>
> Another member later said, "We're finding out that people like Arizona Public Service don't look closely at these things."
>
> Ebersole said that if the systems-reliability study had been done, "maybe they would find some of these snakes."

Arizona Republic, November 10, 1985, p. B-1 (Exhibit E). (Emphasis added.)

57. The ACRS also expressed concern over the interim technical fix to the APSS proposed by ANPP:

> The new [interim APSS] system received apparent approval, but Saturday the committee concluded, as Ebersole put it, "It was a patchwork design. I think they have a lousy design they are patching up."

Arizona Republic, November 10, 1985, p. B-1 (Exhibit E).

58. As a ratepayers' organization, CREE has obvious concerns about the prudency of APS/ANPP's apparently willful disregard of recommendations from the most prestigious technical sub-body within the NRC structure. However, we are at least as concerned

about the implications of this incident for the risks posed to the public health and safety by PVNGS. Of course, we are concerned about the ambiguous nature of the status of the APSS at PVNGS, and CREE urges that that situation should lend added weight to our request for a suspension of the Unit 2 operating license. However, our main concerns do not involve plant hardware, which in any event appears to be far superior to the management competence and character of ANPP. It is not hardware but people problems at Palo Verde that concern the petitioner, particularly problems at all levels of plant management. CREE contends that the discussions before the ACRS cited above support that concern, obviously, as to management competence, and also as to management character. Management character involves not only an avoidance of <u>deliberate</u> deception and laxity - i.e., malfeasence. Management character also involves the willingness of the utility to put the public safety first, to exert itself beyond minimum or marginal standards to improve quality and performance, to judge prudently and accept responsibility fully for plant performance. It is those qualities on the part of ANPP that recent ACRS comments call into question.

56. However, other questions also remain about ANPP's integrity, notwithstanding the reluctance of the NRC to find specific evidence of deliberate deception. As an organization actively involved for several years in the public discussion and reporting of energy issues in Arizona, CREE must conclude that the candor, if not the honesty, of APS/ANPP remains open to serious doubt. This issue has been reviewed at some length in an earlier CREE petition filed with

the Commission. (See CREE Show Cause Petition, May 6, 1985.) These concerns are widespread in local community, and have been brought to the Commission's attention by prominent local citizens as long ago as August 24, 1983, at a public meeting with Region V Regional Administrator John B. Martin. (See May 6 Petition Exhibit 1.) It remains to be noted, however, that the situation has not significantly improved during the first year of Palo Verde operations. As noted in our earlier Petition:

> A leading metropolitan daily, the Phoenix Gazette, editorially expressed its disapproval of the failure [by APS/ANPP] to inform the public of the MIC situation (two PNOs issued in March, 1985, were not released to the media, and eventual utility disclosure failed to reveal the full extent of the MIC, until the PNOs were released to the press by the Coalition), and of the potential impact on plant costs and safety....

Phoenix Gazette, March 28, 1985; CREE Petition, supra, Exhibit 4. More recently, ANPP's handling of public information on the APSS incident and other matters has again raised questions regarding the utility's candor, at least in dealing with the general public. Although the NRC has indicated its belief (above) that ANPP's early incomplete or inaccurate reporting of the situation to the Commission reflected inadequate technical understanding of the issue rather than deliberate deception, such a case is more difficult to make regarding the utility's handling of public information on the problem. NRC documents indicate that ANPP had been apprised of the technical significance of the problem no later September 16, 1985, via telephone conversation with the NRC. Yet, news of the significance of the problem (which contradicted

earlier ANPP characterizations) did not appear until September 19, and then were based on information given to the media by the NRC. Arizona Republic, September 19, 1985, p. A-1 (Exhibit F).

57. Of course, the NRC is not responsible for the manner in which utilities deal with the press and the public's right to know in a legal, regulatory sense. Recent NRC "guidance" on handling of PNOs seeks to transfer all responsibility for such matters in that context to the utility. But the NRC cannot and should not abdicate its responsibility to be cognizant of its licensee's attitudes toward public awareness, for at least two reasons. (1) The public's sense of the trustworthiness of a licensee, by affecting its assessment of the credibility of information in crisis situations, can affect the seriousness of that situation, as, e.g., numerous studies of the Three Mile Island-2 accident demonstrate. See Report of the President's Commission, Commission Findings §H, "The Public's Right to Public Information," supra, item 1 of which states:

> The quality of information provided to the public in the event of a nuclear plant accident has a significant bearing on the capacity of people to respond to the accident, on their mental health, and on their willingness to accept guidance from public officials;

and item 5 of which states:

> Met Ed's handling of information during the first 3 days of the accident resulted in loss of its credibility as an information source with state and local officials, as well as with the news media. Part of the problem was that the utility was slow to confirm "pessimistic" news about the accident.

(Emphasis added.) (2) It is an unavoidable common sense

assumption that management's candor with the NRC is to some extent at least related to its candor with the public. If "damage limitation" and "plausible deniability" become management goals in dealing with the general public and the media, at least the potential for conflict in its processing - and indeed its willingness to recognize - potentially damaging information to the NRC is automatically set up. Management character and integrity are not readily subdivided into separate components marked: "For Public Consumption" and "NRC: Eyes Only."

58. Whatever else may be concluded about ANPP's candor in dealing with the media, the general public, and the NRC, the evidence from the first year of PVNGS operations indicates a clear pattern of communications lapses, not only in the form of inaccurate and incomplete submittals but also tardy reporting to the NRC, and not only externally in communications with the NRC but internally. As noted above, these problems were noted by SALP. Further specific instances will be outline below. Minimally, it can be concluded that ANPP communications internally and with the NRC, on the one hand, and with the media and general public, on the other, appear to follow parallel lines. To date, ANPP performance in this regard must be considered indicative, minimally, of confusion and uncertain technical understanding of a number of issues (as well as inadequate procedures in some cases), such as reflects on management's technical and administrative competence. At worst, it may be indicative of a lack of candor and reluctance to deal with "pessimistic" news, that reflects on

management character.

59. Communications inadequacies on the part of ANPP at PVNGS have also been examined by CREE, along with other instances of management insufficiency and administrative error. Starting in October, 1985, CREE initiated its own effort to systematically monitor and analyze identified deficiencies at PVNGS, based primarily on a review of NRC inspection reports. This work is on-going, and not all 1985 inspection reports have been fully analyzed to date. However, all 1985 inspection reports have been subjected to a preliminary screening and relevant incidents isolated for detailed analysis. This on-going work formed the basis for the November 1 CREE statement (above) and subsequent comments by the petitioner. Originally, the project was initiated in response to several factors: (1) a perceived increase in the number and severity of PVNGS-1 plant shutdowns and other problems during the June-September period and beyond; (2) recognition of repetitive error patterns in specific areas such as subcontractor control, emergency and radiation protection training, quality assurance and plant security, some of which had been identified by the NRC, CREE, or the Palo Verde Intervention Fund as much as a year and a half earlier; and (3) concern about ARS/ANPP candor. The analysis was and continues to be primarily dependent on NRC description and diagnosis of incidents, as contained in inspection reports and other documents. No effort was made to perform detailed, technical engineering analyses. Rather, the methodology emphasized the social, behavioral, organizational, statistical and economic skills of the

CREE staff and consultants, including Power Plant Analysts, to attempt to bring new forms of analysis to bear on the data. Accordingly, in dealing with both technical and human factors issues, the initial effort was to seek identifiable regularities or consistencies in the data, in an effort to identify possible patterns. Generally, the approach was synthesis-oriented rather than narrowly analytic in the atomistic sense. Therefore, patterns readily emerged and recurring behaviors affecting diverse systems and segments of the division of labor were quickly identified. It became apparent that certain behaviors occurred frequently, in a number of different "functional areas," to borrow from the language of SALP. Moreover, the majority of these recurring patterns involved management functions or matters of administrative procedures and intra-organizational interfaces. In simple terms, a surprising number of Palo Verde problems appeared rooted in management inadequacies. Subsequently, a system of administrative error categories was established, and the attempt was made to chart various incidents within this scheme, with results that are discussed, in part, below. These categories and other aspects of CREE's analysis reflect insights gleaned from the social and behavioral sciences, particularly social psychology, organizational sociology, group dynamics and general systems theory. The results of CREE's analysis are markedly reinforced by the specific findings in the latest SALP report, although CREE unquestionably attaches greater significance to many of the various managerial and administrative errors or inadequacies. No doubt, this reflects

the social and behavioral emphasis of CREE's analysis, in contrast to the technical-engineering approach of the NRC. Communications difficulties are an example of a recurring behavior pattern identified by both the NRC and CREE, to which CREE attaches considerably greater significance than does the SALP Report. Understandably, the NRC's concern with adequate communications is, first of all, functional: The NRC relies on accurate licensee reporting and "self-regulation" to a significant extent. CREE's analysis, on the other hand, views communications breakdowns as symptomatic of underlying organizational dysfunctions, and, therefore, as highly significant.

60. The importance of communication to organization structure and function is supported by the several theories that regard all social organizations as mechanisms for the transfer and storing of information. E.g. Systems Thinking, F.E. Emery, ed., Middlesex, 1969. In more practical terms, accurate communication is functionally important, not only to the early and accurate identification of problems by both the licensee and the NRC, but also as a method for improving discipline and increasing attention and awareness of important issues at all levels of plant operations and management. During 1985, problems occurred in the flow of information at PVNGS both in the notification of events to upper management levels and the NRC and in the processing of information on procedural changes, regulations and other matters from administrative to operational levels. Social psychology identifies the most common form of failure to transmit "bad" news as bottom-

up. However, instances also occurred at PVNGS of hierarchically superior personnel failing to act on or process such information received from lower organizational levels, as the following incident illustrates.

61. At 9:50 AM, August 15, 1985, Unit 1 Control Room alarm systems indicated unauthorized repositioning of the 125V DC "D" Battery Charger Disconnect Switch in the equipment room. Operators discovered the switch mis-positioned and no personnel in the room. No work associated with the switch had been authorized. The event was identified as a possible tampering incident to site management on the afternoon of August 16, 1985. Personnel interviews were not conducted for another 3-4 days (4-5 days after the incident). No conclusive determination was made as to the cause of the switch being mis-positioned. The inspection report comments:

> The inspector informed licensee management that in view of the recent Remote Shutdown Panel incident [Unit 2], as well as several other ongoing investigations of a similar nature at Units 2 and 3 licensee efforts to determine the cause of the mis-positioned switch were not considered timely. Specifically, site management was not notified of the event until the afternoon of August 16, 1985....
>
> Licensee management concurred with the inspector that notification of site management should have been quicker, but stated that completion of the investigation was prioritized with other significant work. The inspector reiterated that future notification of possible tampering events were expected to be provided to site management in a more timely fashion, and sensitivity to these occurrences should result in a full investigation into the circumstances of the situation being carried out expeditiously.

NRC Inspection Report No.50-528/85-26, October 4, 1985, pp.12-13.

62. Instances have occurred of inadequate communication from management regarding procedures, including failure to issue read

notices due to a high pace of procedural changes and incomplete information communicated, which have resulted in repetitive errors or violations, as in the PASS incident and in the following case.

63. LER 50-528/85-24 identified failures to adequately surveil fire doors in April, 1985, at Unit 1.

> The procedure was revised immediately by a procedure change notice (PCN) to include the above doors. On April 17, revision 2 to 14ST-1ZZ24 was issued which should have included the PCN. However, due to an apparent administrative error, the PCN was not fully incorporated into the revised procedure, resulting in the repetitive violation of Technical Specification 3.7.12 [in August].

NRC Inspection Report No. 50-528/85-26, October 4, 1985, p. 3. (Severity Level IV Violation.)

64. Both in SALP and at an August 8, 1985, enforcement conference, notice was taken of the frequency, incompleteness and tardiness of LERs. (See above.) NRC Enforcement Conference Minutes, August 28, 1985. On August 8, 1985, ANPP was cited for a Level V for failure to submit an LER on Fuel Building Ventilation Monitor inoperability, identified on April 23, 1985, within the 30 days required by 10 CFR Part 50.73. The LER (85-32) was ultimately submitted to the NRC on June 14, 1985. NRC Inspection Report No. 50-528/85-21, August 8, 1985.

65. One of the regularities observed by CREE of particular importance is the tendency of particular categories of admnistrative/management error to affect a variety of functional areas over time. This is the case as regards the repetitive occurrence of communications problems at PVNGS, which affected the following SALP functional areas: Plant Operations; Radiological

Controls; Maintenance; Surveillance; Fire Protection; Security; Quality Program and Administrative Controls; Licensing Activities; and Training. What this trans-systemic tendency suggests is diagnosis of root causes and effective enforcement actions are rendered more difficult, becauses patterns of performance may escape the net of routine observation. Obviously, it also suggests that certain managerial problems are widespread, affecting various work areas pervasively, and therefore likely work their way down from fairly high up in the organizational hierarchy, to pervade plant operations. In short, many of these problems appear to be system-wide in nature, probably reflecting patterns of behavior, attitude, and/or procedural deficiencies.

66. Of course, even some administrative errors affecting multiple systems may be rooted in a single identifiable cause which is subject to technical fixes. An example of the following may be recurring inadequacies of the retraining of both emergency and fire team personnel? This problem appears rooted in inadequacies in the computer tracking system, may have limited or no safety significance, and should be easily corrected by technical fixes. NRC Inspection Report 50-528/85-21, August 8, 1985, pp. 8-10.

67. More often, however, the most that can be identified is the recurrence of patterns of administrative error affecting various systems over time. Because these errors likely involve primarily human behavioral factors in an organizational context, they may not be amenable to quick, technical fixes. What may be most necessary is to install an increased attitude of self-discipline

and attention to proper procedure. Such attitudinal changes are not likely to be created through the issuance of additional procedures alone, nor through isolated NRC enforcement actions which, to date, appear to have produced, at most, isolated results. Nor are additional staffing changes and realignment of organizational flow charts, such as have occurred frequently at PVNGS during the past two years, likely to suffice. (See,e.g., VanBrunt to Kirsch, "Improvement of Palo Verde 1 Operations," August 29, 1985.) SALP indicates that analysis of organizational interface problems and increased management involvement and meetings have improved matters in some functional categories, notably Plant Operations, while proving less effective in others. SALP, supra.

68. Other forms of analysis, such as functional-structural organizational analyses and information flow/feedback analyses appear indicated. But the likelihood that many of the problems are rooted in management behavior, attitude and experience, suggests that many of the problems can best be addressed through practice. At the same time, it appears likely that simultaneous operation of multiple units will necessarily increase the demands upon management, possibly to the point of overburdening management resources, leaving little additional time and resources to devote to improving performance. What appears most needed is a period of consolidation, for ANPP to demonstrate improved performance and implement improved procedures under close NRC guidance, without the strain of competing issues. And that is precisely

what this petition requests.

69. As noted previously, the pressure of competing issues was identified by both NRC and ANPP as a factor in errors related to the PASS incident and the failure to respond quickly to possible tampering at PVNGS-1. The NRC specifically cited "schedule pressure" as a possible factor in PASS errors at PVNGS-1. PASS Violation, supra. Other possible instances of schedule pressure have been identified. Two inspections, reported in October, 1985, identified multiple instances of excessive overtime authorized by low level supervisors or otherwise in violation of proper procedure. NRC Inspection Reports Nos. 50-528/85-26, October 4, 1985 (Level IV Violation) and 50-528/85-33, October 17, 1985. ANPP initiated procedural changes designed to prevent recurrence.

70. These instances are significant in two respects. First, while the root cause of the specific incidents appears to have been improperly written procedures, the error is one of delegation of authority that suggests upper management insensitivity to the need to retain control over such matters. Delegation has been defined as "the primordial organizational act, a precarious venture which requires the continuous elaboration of formal mechanisms of coordination and control." "Foundations of the Theory of Organizations," P. Selznick, American Sociological Review, vol. 13, p. 25. The concern here is "the elaboration of formal mechanisms of control" only occurred upon the initiative of the NRC, and such initiatives are necessarily limited without extraordinary inspection and enforcement actions, such as this

petition requests.

71. Secondly, there appears to be an intuitively obvious link between possible schedule pressures and instances of excessive overtime which to date appears inadequately investigated.

72. Other suggestions of schedule pressure have arisen. In 1983, the NRC initiated the investigation of allegations of a "bean count" system affecting construction phase quality assurance practices at PVNGS. (The investigation did not prove this allegation, although other allegations by the worker were substantiated in whole or in part.) Recently, similar allegations have been reported indirectly to CREE, and have been the subject of a recent FOIA. (See Exhibit C .) Specifically, it has been reportedly alleged that electrical crews were ordered to make improper installations due to schedule pressures on multiple occassions. CREE has been unable to investigate these adequately. They may or may not be substantiable. However, particularly in light of the concern over pressure from competing issues raised in other contexts, they should be investigated.

73. In addition to concerns about the pressure of the attempt to operate Units 1 and 2 simultaneously (see "Discussion of Issues"), other factors should be recognized. ANPP has experienced repeated difficulties in meeting established target dates for completion of Unit 1 startup and power ascension testing during the last quarter of 1985. See Exhibit G and November 20, 1985, letter, supra, which called for completion of 100% power testing on December 19, 1985. In fact, as noted in SALP, the third

and fourth quarters of 1985 were marked by an increased frequency and duration of plant shutdowns at PVNGS-1, a pattern which has continued to the present time, with Unit 1 currently shutdown in the midst of 100% power testing. Occurring at such a late date in the power ascension process, such continuing and apparently accelerating difficulties should be a matter of considerable concern. According to a Nuclear Information and Resource Service (NIRS)/Phoenix Gazette analysis, resolution of PVNGS-1 shutdown problems has taken longer, on average, than other startup projects in the same time frame, with the sole possible exception of Fermi-2. See Exhibit I, attached and incorporated.

74. While CREE is on the public record as regarding such inter-plant comparisons as (largely) trivial and non-informative, APS/ANPP public relations initiatives early in the startup process indicate that the utility takes them seriously. In addition to the political/public relations pressure thus occurring, the NRC should be aware of sources of financial pressure on APS/ANPP that increase with additional schedule delays and do not appear certain to disappear upon Unit 2 startup.

75. CREE requests that the financial qualification of APS/ANPP to safely operate PVNGS-1 and -2 at this time be included among the issues for examination in the requested discretionary hearing. CREE is cognizant of the fact that the NRC last year eliminated the requirement, in 10 CFR 50.57(4), that operating license applicant be financially qualified. In fact, CREE opposed that rule change. Comments of the Coalition for Responsible Energy

Education on the NARUC Financial Qualification Survey, 1984. In its comments, CREE noted an increasing level of state regulatory pressure on APS to complete PVNGS construction and operate the units at desired performance levels. Comments, supra, pp. 7-10. Subsequently, those pressures have increased. A four-state regulatory commission plant construction prudency audit has been initiated, with auditors frequently on site and at APS corporate headquarters, Arizona Corporation Commission scrutiny of construction and operating practices generally has intensified, and construction and operating performance incentives have been imposed by the Arizona Corporation Commission on APS and PVNGS. In response to CREE expressions of concern, the Arizona Corporation Commission requested that its incentive plan for PVNGS be analyzed for potential safety impacts, and CREE subsequently filed a show cause petition with NRR along the same grounds. CREE: Petition, December 18, 1984. Subsequently, the Director determined CREE's concerns relative to potential adverse affects on plant safety "have been reviewed and were satisfactorily resolved prior to issuance of the full power license for PVNGS Unit 1." Director's Decision Under 10 CFR 2.206, DD-85-12, August 9, 1985, p. 4. However, in response to the Arizona Corporation Commission request for review of the APS PVNGS incentive plan, Harold Denton stated:

> We have not investigated the possible effects of your plan in detail; however, we do have some general observations. The Palo Verde Unit 1 incentive plan appears to reinforce and, to some extent, augment the inherent economic incentives that have affected utilities in the past....

> ...As we stated previously, the NRC staff is now studying, on a generic basis, the possible effects that incentive plans could have on nuclear power plant safety. This study is expected to be completed near the end of this year. At that time, we will be better able to provide a judgement as to the effect that incentive plans, such as the Palo Verde plan, may have on plant safety.

Denton to Wayne E. Ruhter, Utilities Division, Arizona Corporation Commission, April 9, 1985, pp.3 and 4. (Exhibit J, attached.) (Emphasis added.) Recently, the NRC has issued its generic analysis of nuclear plant incentive programs, concluding that such plans may have direct and indirect negative (or "perverse") impacts on plant safety. (See Exhibit K .) Accordingly, and the Director's Decision on the CREE petition, supra, notwithstanding, the possible pressures resulting from incentive regulation of the entire PVNGS project have not been adequately weighed by the NRC.

76. The Coalition does not seek, through this Petition, to reopen this previously decided issue affecting PVNGS-1. For better or worse, PV-1 and the Palo Verde incentive plan are both (more or less) operating realities. Moreover, although Commission rules allow for financial qualification reviews in specific cases where warranted by special circumstances, CREE is not seeking to mount a financial qualifications challenge to the operation of any reactor at this time (however warranted that might or might not be, have been, or become in the future). In fact, in this petition, the Coalition is not seeking to prevent the eventual operation of PVNGS-2 for any reason whatsoever.

. . . . .

77. Rather, CREE contends the following: (1) The possible effects of incentive regulation and other forms of regulatory and financial pressure on all three PVNGS units has not been adequately examined by the NRC; (2) some indications of possible negative effects on ANPP performance due to schedule pressures have arisen; (3) any such pressures can be anticipated to interact synchronistically with perceived manangement, administrative and organizational inadequacies to decrease the level of licensee performance; (4) in general, management character and, particularly, management competence are reasonably open to question; (5) management resources appear marginal (SALP) or close to strained, particularly in the critical area of quality assurance and administrative controls affecting quality; (6) simultaneous operation of Units 1 and 2 prior to demonstrable improvements in overall management competence is likely to add additional strain to management resources.

78. Accordingly, CREE requests that the following actions be initiated by the NRC:

- issuance of show cause order suspending the PVNGS-2 operating license temporarily pending completion of the actions requested below;
- immediate hearings on the issues of ANPP management competence and character, and the financial qualification of APS/ANPP as affects PVNGS-2 at the present time;
- immediate initiation of a Special Management Inspection and Oversight Team of the NRC to remain active at PVNGS until the licensee has demonstrated improvements in the areas of management competence and administrative controls sufficient to ensure that the issues raised in this Petition have been addressed;
- require completion of a systems-interaction and

reliability study and such organizational studies and procedure changes as may be deemed appropriate, prior to reinstatement of the PVNGS-2 operating license;

- require acceptable permanent resolution of all outstanding APSS issues, prior to reinstatement of the PVNGS-2 operating license; and
- any other inspection and enforcement actions as may be deemed necessary.

79. It should be noted that what the Coalition is requesting in this Petition, largely, is that the NRC act agressively on the concerns that it, itself and through the ACRS, has raised regarding ANPP management competence and performance. As noted by CREE's analysis of PVNGS violations, deficiencies, and other matters (see, e.g., Exhibit A), as well as SALP's analysis of PVNGS-1 LERs, a majority of ANPP's difficulties during the first year of nuclear operations at Palo Verde appear rooted in managerial, administrative and personnel deficiencies. This finding clearly raises the issue of ANPP management competence, as does the "marginal" Category 2 rating applied to quality controls in the recent SALP, quality assurance being held to reflect quite directly on management competence. As CREE's analysis also demonstrates, identified administrative/management errors cut across functional area categories established in SALP and affect diverse systems. This species of recurrence of failings, across categories, is particularly disturbing; as is the phenomenon of repetitive errors, identified in numerous incidents at PVNGS-1. Perhaps most disturbing of all is the pattern of recurrences of the same sorts of problems (notably, in the area now designated Quality Program and Administrative Controls Affecting Quality) identified in the

two previous SALP reports. The citizens of Arizona have lived for over two years with piece-meal NRC enforcement actions and repetitive reassurances from APS/ANPP, with only marginal - if any improvement apparent. PVNGS-1 startup provided APS/ANPP an opportunity to demonstrate its management competence to operate the largest commercial nuclear complex in the United States. In our judgement, it has failed to do so.

DISCUSSION OF ISSUES

80. Because of the a-characteristic, essentially non-technical nature of this Petition, some additional theoretical discussion of the issues raised is in order.

81. First of all, as noted above, ANPP has agreed to certain limitations on PVNGS-2 low power operation. In particular, Unit 2 initial criticality will not occur until completion of 100% power testing at PVNGS-1, and mode changes will not occur simultaneously. While these are reasonable precautions, they fail to adequately address the day-to-day pressures to be anticipated from simultaneous operation. In particular, they appear to understate the rigors of the first year of commercial operation at PVNGS-1. It should be noted, for example, that the accident at Three Mile Island 2 occurred virtually one month to the day into the first year of commercial operation. Less spectacularly, but perhaps even more significantly, research by Komanoff Energy Associates, Power Plant Analysts, and others, clearly demonstrates a statistically significant trend for low reliability performance and high shutdown and outage time rates during the first several years of

commercial operation, particularly the first year. (See Exhibit L.) There simply is no empirical support for the conclusion that the first year of commercial operation is any "easier" than power ascension testing.

82. Therefore, CREE maintains that the need for cautious conservatism during PVNGS-1 testing remains in effect throughout its first year of commercial operation, and any restrictions deemed avisable during Unit 1 testing should be deemed equally applicable to initial commercial operation.

83. The second point that needs to be addressed involves both the seriousness and the nature of the problems of overall management competence and character this Petition addresses. Not only has the NRC recognized the importance of the management competence issue, particularly in the South Texas case. The impact of a notable failure to recognize and address that issue has been identified by the President's Commission on Three Mile Island, among others:

> In a number of important cases, General Public Utilities Corporation (GPU), Met Ed, and B[abcock] & W[ilcox] failed to acquire enough information about safety problems, failed to analyze adequately what information they did acquire, or failed to act on that information. Thus, there was a serious lack of communication about several critical safety matters within and among the companies involved in the building and operation of the TMI-2 plant. A similar problem existed in the NRC.
>
> * * *
>
> ...The GPU Service Corporation (GPUSC) had final responsibility for design of the plant. However, by its own account, it lacked the staff or expertise in certain areas to discharge that responsibility. Once construction was complete, GPUSC turned the plant over to Met Ed to run, but Met Ed did not have sufficient knowledge, expertise, and personnel to operate the plant or maintain it adequately. ...Responsibility for management decisions was divided among the TMI site, Met ed, and GPU. GPU recognized in early 1977 that integration of operating responsibility

> into one orgaization was desirable. A management audit by Booz, Allen, and Hamilton completed in the spring of 1977 recommended clarifying and reevaluating the roles of GPUSC and Met Ed in the design and construction of new facilities; strengthening communications between GPUSC and Met Ed; and establishing minimum standards for the safe operation of GPU's nuclear plants. However, integration of management did not occur until after the accident.
> ...The Met Ed management systems, procedures, and practices did not provide Met Ed a firm understanding of TMI's operations, nor were effective systems of checks and balances in use.
> ... Met Ed had a plan for quality assurance that met NRC requirements. The NRC requirements, however, were inadequate because they did not require quality assurance programs to be applied to the plant as a whole, but rather only to systems classified as "safety-related...."
> ...Met Ed's implementation of its own quality assurance plan was found to contain significant deficiencies....
> ...Met Ed did not go beyond NRC requirements....
> ...Utility management did not require attention to detail as a way of life at Three Mile Island....
> ...Management did not assure that Licensee Event Reports (LER) met basic NRC requirements. A review of TMI-2's LERs disclosed repeated omissions, inadequate failure analyses, and inadequate corrective actions....

Report of the President's Commission on Three Mile Island, supra, Commission Findings: "The Utility and Its Suppliers."

84. The not dissimilar, as to character, type of problems disclosed within ANPP during PVNGS-1 startup share a common characteristic with the majority of those noted at TMI-2. They tend to be system-wide in their effect. Because they effect the entirety of plant operations, they make themselves felt unpredictably at different times, affecting different systems and cutting across functional areas such as those established for study in the current and previous SALPs. As suggested above, because of their pervasive effect, standard diagnostic categories capture only a portion of these performance patterns at one time, and therefore probably underestimate their extent.

85. In order to accurately measure the significance of these behavioral patterns, it is necessary to employ a methodology that examines the totality of ANPP responses and seeks to identify observable regularities and recurring patterns. CREE has attempted to do this, and has determined that such patterns do exist and raise significant doubts as to management competence. However, much more of such analysis needs to be done, and can best be done through ongoing first-hand observation in the field, such as is envisioned in CREE's request for a special management inspection team. Such a team should also serve as a valuable management tool for rapidly and substantially improving performance.

86. Patterns such as CREE has identified clearly do exist at PVNGS. To a great extent, this conclusion is verified by recent NRC findings. The seriousness and extent of these patterns of poor management remain to be fully determined and, therefore, constitute an unreviewed safety problem.

87. Returning to the TMI example, however, it can readily be seen that many of the patterned behaviors are identical or analogous to those identified at PVNGS. Poor LER performance, deficient or marginal implementation of quality assurance programs, demonstrated weaknesses in internal communication and communications to the NRC and the general public have all been clearly established. It appears that utility management has not made attention to detail a way of life at PVNGS, and has insufficiently emphasized the importance of quality and procedural exactitude to all departments. Weaknesses in technical understanding have also been recognized by

the NRC:

> Numerous recent LERs (involving) failure to observe the Technical Specification requirements... indicate misunderstanding of the Specifications, or inadequate review of prior to changing modes.

NRC Enforcement Conference (August 8, 1985) Minutes, August 28, 1985. (See also, above.)

85. Less obviously, GPU's difficulties establishing an organizational unit for TMI-2 may have analogies at APS/ANPP. A 1980 internal APS task force determined that an adequate management and staffing organization was already in place for PVNGS. See Exhibit M. However, a 1983 internal memo, titled "APS Nuclear vs. Corporate" disclosed serious interface problems between project management and overall utility management. See Exhibit N. Following the CAT finding of a loss of management control, extensive reorganizational and interface analyses by APS occurred, culminating last year in the official designation of ANPP (rather than APS) as plant manager. The continuing pattern of staffing problems (see SALP, supra) and organizational changes within ANPP in 1985 suggests that this process has not yet achieved completion with the establishment of a competent, settled management-operations organization at PVNGS.

86. Commenting, prior to the disclosure of significant management difficulties at PVNGS in 1983, on the importance of management competence, Arizona Governor Bruce Babbitt, a member of the President's Commission on Three Mile Island, reiterated that panel's stress on the critical importance of this issue:

. . . . .

> The plain fact is that nuclear utilities have not achieved a culture of technical excellence. Too many nuclear utilities still operate in an environment of technical indifference and careless management. It is the careless management, not reactor design, that is the chief source of risk in the nuclear industry.
>
> * * *
>
> [NRC should make an initial determination whether a utility has the management strength to even enter into the nuclear-licensing arena.

Arizona Republic, July 15, 1983, p. A-12 (Exhibit O). (Emphasis added.)

CONCLUSIONS OF LAW

87. 42 U.S.C. §2236(a) and 10 CFR 50.100 provide that a license or permit may be revoked, modified or suspended because of "conditions which would warrant the Commission to refuse to grant a license on an original application...."

88. 42 U.S.C. §2236(a) and 10 CFR 50.100 also provide that a license or permit may be revoked, modified or suspended "for failure to construct or operate a facility in accordance with the terms of the construction permit or license...."

89. The existence of considerable prima facie evidence impugning the management competence and character of APS/ANPP, indicating a recurring pattern of error for which management is immediately responsible, and calling into question the technical competence of ANPP in several areas, fulfills the conditions of the Atomic Energy Act and Chapter 10 of the Code of Federal Regulations as set forth in paragraphs 38 and 39, supra, for suspension of a license or permit.

90. As discussed supra, the instant case meets the criteria for intiation of formal hearings.

RELIEF REQUESTED

91. WHEREFORE, Petitioners pray that the Director, pursuant to 10 CFR 2.202(a), Order the Arizona Public Service Company, et al./ Arizona Nuclear Power Project, to show cause as to why License No. NPF-41 for Project 2 should not be suspended pending adequate completion of a Special Management Team Inspection and appropriate corrective actions, and such other enforcement, inspection, and corrective action measures as may be appropriate, as discussed above; and

92. Initiate hearings on this issue, under 42 U.S.C. 2239(a).

RESPECTFULLY SUBMITTED this 17th day of January, 1986, by:

Barbara S. Bush

BARBARA S. BUSH
Executive Director

Myron L. Scott

MYRON L. SCOTT
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EXHIBIT A

SAMPLE CREE PALO VERDE MONITOR SHEETS

Page 1: PASS summary Sheet P.1
2: PASS summary Sheet P.2
3: sample Master Sheet work sheet
4: sample Master Sheet work sheet
5: Administrative Errors Codes key

DATE	UNIT	DESCRIPTION OF EVENT (TITLE)	(SUB-)SYSTEM(S) AFFECTED	ADMINISTRATIVE ERRORS*: A	B	C	D	E	F	G	H	OTHER	NRC ACTION	FOLLOW-UP	NRC DOCUMENT CODE
9/27/84	1	Erroneous sworn statement to NRC (VanBrunt)	RE: PASS	X	?									see Master Chart sheet	Insp. Rep. 50/528/85-22 (8/2/85)
12/5/84	1	Erroneous statement to NRC (VanB)	RE: PASS	X	?						X			"	"
June '85	1	Failure to Issue Read Notice on Procedure Changes	RE: PASS		X		X	X						"	"
6/6/85-	1	Failure to Ensure Sampling Requirement per Tech Specs above 5% power*	PASS	X	X		X	X	X(4)	X	X		Violation (L.III) & Civil Penalty 10/8/85 Enf. Conf. 8/8/85	"	"
6/13/85	1	Inaccurate assertions to NRC (Van Brunt)	PASS	X										"	"
7/1/85	1	Failure to provide training for sampling under accident conditions	PASS/radiological control team				X	X						"	"
7/1/85	1	Failure to establish procedures & evaluate to ensure compliance with Tech Specs	PASS					X	X		X	document errors		"	"
7/1/85	1	Failure to install properly PASS equip.	PASS									installation error		"	"
7/1/85	1	Failure to schedule timely test of interim system	PASS							X	X			"	"
7/1/85	1	Use of improper source term estimates	PASS								X	calculation error		"	"
7/1/85	1	Failure to establish (review) conservative analytical assumptions	PASS/ Health Physics Dept.					X		X	X			"	"
7/1/85	1	Failure to establish procedure to review document	PASS					X						"	"
7/1/85	1	Minor procedural/equipment inadequacies during test	PASS					X						"	"

PASS Sheet - P.1

DATE	UNIT	DESCRIPTION OF EVENT (TITLE)	(SUB-)SYSTEM(S) AFFECTED	ADMINISTRATIVE ERRORS*: A	B	C	D	E	F	G	H	OTHER	NRC ACTION	PERS FOLLOWUP	NRC DOCUMENT CODE
7/1/85	1	Inadequate PASS sampler fittings, valves	PASS									NONE (equipment)	see P.1	see P.1	see P.1
7/11/85	1	Identified: "Inadequate mgt. involvement to assure accuracy of submittals" "Poss. schedule pressure" *	PASS	X	?			X	X		X	time mgt.? poor mgt. resource allocation			
7/11/85	1	Identified: "Lack of adequate control of tech. work"/"No detailed independent tech. review of compliance *	PASS		?			X	X		X	administrative controls no feedback loop			

* indicates generalized or summary assessment

DATE	UNIT	DESCRIPTION OF EVENT (TITLE)	(SUB-)SYSTEM(S) AFFECTED	ADMINISTRATIVE ERRORS*: A	B	C	D	E	F	G	H	OTH	NRC ACTION	APS FOLLOW-UP	NRC DOCUMENT CODE
7-11-85 8:30 AM	I	Unusual Event Unidentified coolant leak rate (Terminated at 9:28 PM leakage calculated w/in Tech. Spec.)	Reactor Coolant System											refine calculation methodology for H20 balance inventory in RCS	NRC In Rep. (1 & 2 Aug 8'85 (50-528/85-21; 50-529/85-22) p.3-4
7-12-85		Potential to violate NRC Records Keeping Requirements for Equip. Leaving Radiation Controlled Area.	Survey Records										open item 50-528/85-22-03	agree to review (disputed interpretation)	NRC IN. REP. (1-3) Aug 2'85 (50-528/85-22) pp. 18-19
7-12-85		Failure of Procedures to address all Bioassay Sampling Requirements	Bioassay Analysis					✓					open item: 50-528/85-22-02	pend. review	NRC IN. Rep. (1-3) Aug. 2 '85 50-528/85-22, p. 18
7-12-85	II+III	Inadequate Posting of Employee Protection Signs (not violation due other signs & CORR Action Commit.)							✓					relocate signs	NRC IN. Rep. (1-2) Aug. 2 '85 50-529/85-23; 50-530/85-17. pp. 20-21.
7-14-85	I	Leak "corrects itself" & plant restarted.													
7-17-85	I	Shutdown (H.S.B.) Circuit board malfunction (Total power interruption)													
7-17-85	I	Reactor trip due faulty memory load in Control Element Assembly Calculator #2	Core Protection Calculator												NRC IN. REP. (1+2) Aug 8'85 (50-528/85-21; 50-529/85-22) p.4.
7-22-85	I ?	Turbine Condenser tube leak													
7-22-85 7:05-8:30	I	Load reduction to mode 2 (2-3 % power)	circulating water leak into main condenser												
~~7-23-85 AM~~	~~I~~	~~unidentified leakage in~~	~~excess of Tech Spec (cold shutdown~~												
7-24-85 6:54 A.M.	I	Cold Shutdown re-current primary cooling system leak (one (1 gal. per minute)	July 24, 6:54 AM) - RCS effected Reactor Coolant System A Charging Pump to non-engineered safety features sump (Aux Bldg. - Liquid radwaste system)											Packing replaced leakage surveillance	NRC IN. REP. (1 & 2 Aug. 8'85 (50-528/85-50-529/85-22) p.4

* additional 7-23 & 7-24 p. 10

1.12

DATE	UNIT	DESCRIPTION OF EVENT (TITLE)	(SUB-)SYSTEM(S) AFFECTED	ADMINISTRATIVE ERRORS*: A	B	C	D	E	F	G	H	OTHER	NRC ACTION	APS FOLLOW-UP	NRC DOCUMENT CODE
8-12-85	I	Restart delayed -additional testing													
8-15-85		Control Switch associated w/125VDC "D" Battery Charger Disconnect Switch had been repositioned from the "remote" position to "local/remote" position	Electrical		✓ (PV)			✓ (PV)					NONE	will monitor any future possible tampering as part of normal inspections	NRC INS. REP. (1+2) Oct. 14, 1985 (50-528/85-24 & 50-529/85-24)
8-19-85	I	allowing lower level mang. to approve overtime worked (200 of 24 hr.) by Unit Staff who performed safety related functions in excess of overtime guidelines						✓ (APS)					Violation (Level III)		NRC INS. REP. (1+2) Oct 4, 1985 (50-528/85-26; 50-529/85-27)
8-20-85	I	Restart delayed Corrected LPSI Valve (error due improperly adjusted)	ECC System												
8-23-85	I	Restart delayed -additional testing													
8-26-85	I	Restart (July 24 shutdown - 34 days)													
9-2,3-85	I	Power reduction due High Steam Generator Conductivity	Heater Drain System Leaking Tube											Tube Plugged	NRC IN. Rep. (1+2 Oct 4-'85 (50-528, 85-26; 50-529/ 85-27) pp. 1-2
9-4-85	I	Power Reduction correct imbalance of Chlorine in Steam system,													
9-5-85	I	B Diesel Generator Oil Spill (500 gals) Technician erroneously removed temperature detector	B Diesel Generator									operator error		clean-up + restart	NRC INS. REP. (1+2) Oct. 4 '85 (50-528/85-26; 50-529/85-27) p. 2

ADMINSTRATIVE ERRORS codes:

A: Inaccurate information submitted to NRC

B: Inaccuracy or delay in internal communication (APS operations/site management)

C: Delay in reporting/event notification to NRC

D: Training error/inadequacy

E: Personnel procedure implementation/administration error

F: QA/QC error (If BPC/vendor, so indicate. If recurring, indicate number of incidents)

G: Failure to conduct test/testing error

H: Failure to follow-up corrective action or related commitment to NRC

OTHER: (e.g.:) design error; manufacturing error; installation error; equipment failure; operator error; record or test falsification; calculation error; failure to monitor; fitness for duty violation; apparent/confirmed tampering; etc.

EXHIBIT B

CREE PRESS CONFERENCE
NOVEMBER 1, 1985
by
CREE INTERVENTION COORDINATOR MYRON SCOTT

The Coalition for Responsible Energy Education (CREE) called today's press conference to assess the performance of Palo Verde Unit 1 and its implications for the pending fuel load of Unit 2, to respond to APS' public relations campaign to minimize its problems at Palo Verde, and to update the public on CREE's on-going and planned actions on behalf of power plant safety.

We chose November 1 to issue this statement because today is the date Arizona Public Service proposed to the Nuclear Regulatory Commission as its Unit 2 fuel load and low power licensing target date, and because APS had announced it hoped to reach the 100% power level at Unit 1 by this date.

In fact, Unit 1 is currently idled by a failed electrical component, and Unit 2 fuel load is on hold. Throughout Unit 1 start-up, Arizona has experienced repeated demonstrations of the the wide range of problems that can affect Palo Verde safety and efficiency - problems CREE has long warned of.

We will release today information on the two latest NRC violation citations issued against Palo Verde. These citations, together with other incidents, suggest a pattern of recurring deficiencies in critical areas of management control, personnel procedures and prompt and reliable reporting of problems.

APS has not been candid about these problems. The Nuclear Regulatory Commission has dealt with these events in piece-meal fashion without adequately weighing what they reveal about overall plant management, and has largely allowed APS to set its own speeded-up startup schedules.

Therefore, we are urging the Nuclear Regulatory Commission to review these repeated problems and conduct such special inspections as are necessary to ensure APS' competence to operate Palo Verde 1 safely and in accordance with NRC regulations.

We urge the NRC to delay fuel load and low power operating permission for Unit 2 until it can assure the public that APS is competent to operate Unit 1 safely.

Currently, the public has no assurance that Palo Verde is a safe plant or that APS is able to operate Palo Verde with the seriousness, attention to detail, and reliable assessment and reporting of problems that are essential to provide such assurance.

OCTOBER 4 VIOLATIONS

Since beginning nuclear operations in May, Arizona Public Service has been cited by the NRC for violations in a wide variety of areas:

- failure to inspect electrical pull box installations;
- failure to report an inoperable iodine sampler within the required time;
- failure to review temporary fire protection procedure changes in the required time on six different occassions;
- failure to train emergency personnel on emergency preparedness procedures;
- failure to test a reactor coolant system pump before acceptance as part of the boron injection system;
- a May violation of security regulations, witheld as a classified document;
- failure to test and maintain the control room essential ventilation system;
- failure of APS quality control to detect improper vendor welds on heating, ventilation and air conditioner (HVAC) components;
- repeated failure of APS inspectors to detect a misplaced air sampler.

The air sampler errors, of course, led the NRC to propose a $50,000 fine for "inadequate and informal" review procedures by plant management - the third such civil penalty, and the largest, assessed against the plant. In assessing the first two fines in 1983, the NRC cited a "breakdown in management control" over plant construction activities. Commenting on those problems early in 1984, NRC Regional Director Jack Martin asked APS: "How do we know this is not the tip of the iceberg?" Since then, Unit 1 has been licensed and started up and APS is preparing to start up Unit 2. Yet the NRC is still complaining about "inadequate and informal" management of Palo Verde. And we now ask the NRC: How do we know the problems at Palo Verde are not the tip of the iceberg?

CREE is not suggesting that every weld, valve and pump in such a complex power plant should be expected to function perfectly every time. Far more important to safe operation than most specific technical

problems is how the utility responds to problems. It is critical that APS demonstrate that it is able to identify problems promptly, respond to problems promptly, proceed with overall activities conservatively and thoroughly, and learn from its mistakes. It is critical that APS maintain a high state of readiness to deal with the unexpected: nuclear emergencies; fire protection; plant security. In any complex system, the ability to process and communicate vast amounts of information is fundamental.

Far too often, events at Palo Verde 1 have demonstrated APS failures to conduct follow-up testing and inspections accurately to identify problems, to set up and follow reliable administrative review procedures, and follow through on its corrective action commitments. Too many problems have occurred in the areas of plant security (at all three units), fire protection, and post-accident emergency training. Recent NRC violation citations and inspection reports have repeatedly noted APS failures to inform the NRC of problems promptly and to communicate accurate information. The NRC chief resident inspector recently expressed concern that "site management was not notified" promptly of problems at both Units 1 and 2. And APS, on repeated occasions, has failed to notify the press and public accurately about plant problems.

On October 4, a new indication of the communications breakdown at Palo Verde was revealed. The NRC cited the Arizona Nuclear Power Project for a Level IV violation involving inadequate surveillance of four fire doors at Unit 1 during August. The NRC inspection report on the error reveals that a similar incident involving those doors and twelve other fire doors occurred in April, following which APS revised its fire protection surveillance procedures in an effort to meet license requirements. Due to "administrative error," the four doors, (one-fourth of the total) were overlooked, leading to "the failure to implement effective corrective action to prevent a repetitive occurrence" that resulted in the October 4 citation.

The inspection report further notes that APS statements to the NRC regarding the corrective action were "not fully accurate," and cautions: "The inspector informed the licensee that additional care and verification should be taken on submittals to the NRC which detail corrective actions."

Similarly, the NRC's notice of violation and civil penalty of October 8 on the air sampler incident noted: "...We are concerned that as a result of the deficiencies [in post-accident procedures and training and inspections], inaccurate information regarding the operability of the PASS [air sampling] system was submitted to the NRC. We emphasize that failures to adequately control evaluations and reviews of changes made to required systems can result in violations involving the reporting of inaccurate information to the NRC." (Emphasis added.)

Several other incidents of inaccurate or untimely reporting to the NRC have come to light in other areas, including plant security.

The second violation cited on October 4 involved excessive overtime for workers performing safety-related functions at Unit 1, and suggests a possible overemphasis on speedy startup.

AREAS OF CONCERN

These and other recent incidents raise concerns that go beyond technical questions affecting specific plant systems to the broader issue of the overall organizational capabilities and attitudes of Palo Verde plant management. The pattern of administrative, procedural, personnel and communications lapses, and the repetitive nature of some errors, suggests, in plain words, that APS does not have a handle on Unit 1 operations.

If APS is unable to stay on top of routine testing, inspection, and reporting tasks at Unit 1, how will it react if non-routine problems occur?

If APS doesn't have a handle on Unit 1, how can it be trusted to operate Unit 2?

It is commonly recognized that Palo Verde has experienced significant difficulties with plant security, particularly at Units 2 and 3. One would expect APS to take the problem seriously, beef up its investigative capabilities, and ask itself whether plant security is adequately staffed. Instead, APS has tried to explain away the numerous incidents of apparent tampering as (to quote a Phoenix Gazette editorialist): "...the Three Stooges running around the nuclear power plant 'sticking rags' here and there and bumping into important

switches...." This week, the NRC chief resident inspector revealed that the same failure to promptly report and act on problems that has occurred in other areas has been reflected in recent incidents of possible sabotage at both Units 1 and 2. The pattern of APS response to many problems suggests the Keystone Kops chasing the Three Stooges.

The communications problems have reached such a state that even internal communication to plant management has been affected.

It is particularly disturbing that some of the areas most affected to date have included fire protection, security and emergency and post-accident preparedness, those areas designed to cope with crisis situations. The concentration of significant organizational problems in these areas may indicate an attitude that serious problems can never happen - as though APS has come to believe in its own p.r.

The recurring inability of APS to report accurately to the NRC and to follow up on its corrective action, surveillance testing and quality control commitments also indicate that APS may be overwhelmed by the complexity of plant operations. That situation is made even more overwhelming by a startup philosophy which emphasizes speed and the minimizing of downtime.

APS p.r. has attempted to divert attention from plant problems to irrelevant comparisons to the speed of other nuclear plant start-up programs. But nuclear plant safety is not a horse race, with prizes awarded for those finishing win, place or show. In fact, some plants, such as the McGuire nuclear plant, with greater downtime during startup, are turning out to be the best operating plants -- because the utility took the time to test them thoroughly and correct problems. An undue emphasis on speed during startup can compromise safety.

Nonetheless, APS is projecting an even briefer startup period for Unit 2. On September 27, it requested permission from the NRC to test systems involving nonconforming items prior to final resolution of the problem under some circumstances at Unit 2. We oppose such further telescoping of testing and quality assurance procedures necessary for safety.

NRC RESPONSE

The problems we have become concerned over are administrative and procedural in nature, not technical. They reflect directly management

attitudes and competence. They are not unique to nuclear power, but can affect any endeavor in which management has moved too quickly or overextended itself. Yet, they are the kind of human systems problems which the Nuclear Regulatory Commission is least well-equipped to handle. That is especially disturbing when one reflects on the fact that the majority of nuclear plant accidents are caused by human or procedural error.

The NRC has recognized the existence of some of these problems at Palo Verde. At an August 8 Enforcement Conference, the NRC stressed the need for APS to improve its quality control organization, its record for compliance with plant technical specifications, and the accuracy of its submittals to the NRC.

Yet APS' only concrete response was to assign Don Karner temporarily to the site to seek ways to improve the compliance record.

Moreover, one month later, APS was requesting permission to shortcut its Unit 2 quality assurance and testing procedures.

More is required of to correct the kind of administrative and organizational problems evidenced at Palo Verde 1 than shuffling names on an organizational flow chart and speeding up Unit 2 testing.

The NRC should undertake a systematic review of APS' compliance record and an analysis of the totality of APS' Palo Verde administrative and procedural programs, with special emphasis on reporting, training and quality assurance functions, before allowing Unit 2 testing. It should, if necessary, perform independent reinspections of particular problem areas. In particular, it should require APS to demonstrate overtime that it has significantly improved its internal communications and reporting performance.

This factor is particularly important - despite APS attempts to dismiss such errors as "mere paperwork problems." Regrettably, the NRC relies primarily on utility self-regulation. The NRC, by its own estimate , actually inspects less than five percent of the safety-related activities at the average plant.

THE NEED FOR CANDOR

Throughout Unit 1 startup, APS has consistently dismissed malfunctions as "minor," "normal," or "non-problems." But APS' credibility and candor are open to question. In March, APS witheld information on bacteria corrosion problems until CREE released it to the

media and the public.

More recently, when problems with the auxiliary spray system were implicated in the September 12 Unit 1 reactor trip, APS continued to characterize the shutdown as insignificant and the result of testing procedure error until September 19. Nonetheless, NRC documents reveal that APS knew as of September 16 that the NRC regarded the problems as significant and possibly requiring design changes. APS witheld that information from the media as long as possible. As a result, news coverage of the incident for one week was seriously misleading.

APS' casual attitude regarding this problem seems to have been mirrored by the utility's attempt to minimize the problem to the NRC. But Harold Denton, head of the NRC's Office of Reactor Regulation, observed that the shutdown "would be a problem if the plant were at full power."

As Unit 1 approaches full power, the NRC has temporarily accepted interim APS procedures changes in this regard, but the broader problems of APS' attitude and management competence have not been addressed.

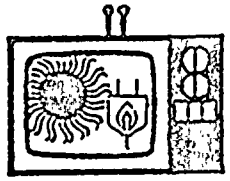
It is small wonder that, were APS' name revised to reflect the general public's most common perceptions, it would be known as Arrogant Profits and Secrecy Company.

APS freely chose to build Palo Verde, an over-sized, experimental nuclear power project. It so doing, it assumed an enormous responsibility to operate the Palo Verde experiment with extreme caution and simple candor - something it has failed to do to this point.

During Palo Verde's tenth shutdown, a local television phone poll showed a majority favoring shutting down Unit 1 until <u>all</u> outstanding problems were corrected. Now, in the midst of the twelfth Unit 1 shutdown, in light of an emerging pattern of organizational inadequacies and carelessness, CREE must generally concur. Until APS is made to demonstrate improved administrative capabilities and attitudes, we must oppose the startup of Unit 2 - and cast a vote of "no confidence" in APS, and very little in the NRC.

Coa EXHIBIT C
Responsible
Energy
Education

VALLEY OF THE SUN GRAY PANTHERS • ARIZONA FEDERATION OF TEACHERS LOCAL 2050
TRI-CITY NATIONAL ORGANIZATION FOR WOMEN • PALO VERDE INTERVENTION FUND
ARIZONA FARM WORKERS UNION • ARIZONA A.C.O.R.N. • PALO VERDE TRUTH FORCE
ORGANIZATION FOR RENEWABLE ENERGY • PALO VERDE ALTERNATIVES COMMITTEE
BIG MOUNTAIN LEGAL DEFENSE COMMITTEE-ARIZONA SOLAR ENERGY ASSOCIATION
WOMEN'S INTERNATIONAL LEAGUE FOR PEACE AND FREEDOM-COALITION FOR PEACE
PALO VERDE TRUTH FORCE • CITIZENS FOR A NON-NUCLEAR FUTURE
SAGUARO ALLIANCE • ARIZONA MOBILIZATION FOR SURVIVAL
COMMITTEE FOR A NON NUCLEAR FUTURE



315 W. RIVIERA DRIVE • TEMPE, AZ 85282 • (602) 968-2179

January 10, 1986

Director
Office of Administration
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

FREEDOM OF INFORMATION ACT REQUEST

To Whom It May Concern:

Pursuant to the Freedom of Information Act, 5 U.S.C. 522, as amended, the Coalition for Responsible Energy Education (CREE) requests the following documents regarding reported allegations concerning Palo Verde Nuclear Generating Station (PVNGS).

Please conisder "documents" to include reports, memoranda, correspondence, notes and summaries of conversations and interviews, including telephone notes, meeting notes, meeting minutes, working papers, graphs, charts, diagrams, studies, test results, computer records, and any other forms of written communication, including internal NRC Staff memoranda.

Pursuant to this request, please provide all documents prepared or utilized by, in the possession of, or routed through the NRC related to:

1. A report to the NRC from a [redacted] of allegations made to [redacted] by Palo Verde workers concerning pressures from superiors to speed up or improperly complete work activities at Palo Verde Nuclear Generating Station Unit 2 (and possibly Unit 3). The allegations reputedly were made during or about the first week in September, 1985, and reported to the NRC Region V Information Officer Greg Cook on or before the first week in October, 1985. The allegations were made by six electrical workers (four anonymous) at PVNGS, apparently employees of Bechtel Power Corp (BPC). The allegations reportedly dealt with multiple instances during the spring and summer of 1985 in which said electricians were instructed by supervisors or foremen to make installations in a manner they (the electricians) deemed improper. When they complained, the workers were allegedly told that it was necessary to make the installations as-is in order to complete work according to schedule, and assured that quality inspectors would subsequently identify and red-tag the improperly completed work. On at least one occassion, the workers reportedly know that work so installed was subsequently red-tagged by inspectors.

CREE is not aware of the manner (telephone conversation, written memo or letter, or direct communication) by which this information was reportedly communicated to Mr. Cook, nor of what if any action was subsequently taken. (CREE does not consider itself at liberty to divulge the source of its information.) Accordingly, CREE requests any and all documentation relating to the possible reporting of such information to Mr. Cook, as well as any and all subsequent inspection, investigation and/or enforcement activity related thereto.

2. Similar information regarding a reported allegation during the same time frame and originating from two electricians and one engineer and/or quality assurance inspector referring to improper installation of a transformer bus plate, reportedly in the main switchyard, at PVNGS. Allegedly the plate was received from the sub-contractor vendor lacking proper silver coating. Workers were allegedly ordered to install as-is, because manufacturer has gone out of business and, therefore, replacing would be expensive and require too much time. Workers allege transformer as installed will work for a while and then go out of service. Report of allegation if any may have been to Greg Cook, Office of Inspection and Enforcement or PVNGS Resident Inspector's Office. Of course, information from any NRC sub-division regarding this reported allegation is requested.

3. All documentation related to follow-up inspection and/or investigation conducted in response to report, by CREE to PVNGS Resident Inspector, of anonymous allegation to CREE of alleged MIC contamination of Unit 1 (or 2) diesel generator heat exchanger, reported in April, 1985.

In our opinion, it is appropriate in this case for you to waive copying and search charges, pursuant to 5 U.S.C. 552 (a)(4)(A) "because furnishing the information can be considered as primarily benefiting the general public." The Coalition for Responsible Energy Education is a non-profit organization providing information to the general public and intervening in rate case and other proceedings involving PVNGS and affecting the general public.

These requests should be deemed, where appropriate, to be continuing in nature.

Sincerely,

Myron L. Scott
Intervention Coordinator

cc: File

AZ. REP. 3-2-85 A-1

Palo Verde nuclear plant a mistake, SRP, APS admit

Top managers blame political climate, miscalculations

Jack Pfister
"Nuclear power has fallen from grace in this country."

By JOHN STAGGS
Arizona Republic Staff

The decision to build the Palo Verde Nuclear Generating Station has turned out to be a mistake, the chief executive officers of two Arizona utilities said Friday.

The assertion first was made by Jack Pfister, Salt River Project general manager, in an address to a Valley Leadership class. It later was seconded by Mark DeMichele, president and chief operating officer for Arizona Public Service.

APS is in charge of overseeing the construction of the plant.

In his address, Pfister said, "If I knew in 1973 what I know now, there's no chance I would have participated in Palo Verde. I wish it wasn't there."

He added that a coal-fired plant should have been built instead.

Program officials, saying the meeting was intended to be private, ordered a reporter to leave the session after he identified himself in asking a question.

Pfister's statement was made during Valley Leadership's 1985 Energy Day Program, attended by 42 people at the Valley Bank Center. The program, in its sixth year, brings together potential community leaders to identify and discuss Valley problems and solutions.

Pfister said that because of the accident in 1979 at the Three Mile Island nuclear-power plant in Pennsylvania, "nuclear power has fallen from grace in this country."

"No utility executive in his right mind would commit to a new nuclear plant today," Pfister said.

DeMichele, contacted late Friday, said that he agreed with Pfister's comments regarding the controversial plant.

"As I recall," DeMichele said, "what he (Pfister) said was that if he had the benefit of perfect 20-20 hindsight, we would not have gone into it. That's absolutely correct. But his point is that we did go into it and now we have to complete it. It's that simple."

DeMichele also said that in reporting Pfister's comments, *The Republic* had violated a 7-year-old agreement between the newspaper and Valley Leadership that comments made in the organization's classes were not for attribution.

In his remarks, Pfister said, "Going back to the early 1970s, it appeared the (nuclear) technology was sound. The estimates were that costs would be high for the nuclear plant, and the fuel costs would be relatively low, so the capital costs for fuel and operating would provide a 'bust bar' cost. That's the final cost as it goes off the transmission lines of the power plant," Pfister said.

"The bust-bar cost is very competitive with coal, particularly with the ratcheting that was going on with weather and air-quality requirements for the coal-fired plants. And, finally, one of the very attractive features of nuclear power was that it had little or no impact on the environment.

"Yes, there was radioactive waste being produced in the fuel cycle,

— *Mistake, A2*

EXHIBIT D

Pfister, cont.

Saturday, March 2, 1985

Mistake

Continued from A1

but the experts in the area felt that was a technological problem that would be resolved, but they didn't understand the political implications of technological problems," Pfister said.

The SRP owns 23.1 percent of the nuclear plant, 50 miles west of downtown Phoenix. Arizona Public Service Co. owns 29.1 percent; El Paso Electric Co. owns 15.8 percent; Southern California Edison Co., 15.8 percent; Public Service Co. of Mexico, 10.2 percent; and Southern California Public Power Authority, 5.91 percent.

Unit 1 of the triple-reactor plant has completed fuel loading and is expected to be operating at 100 percent capacity by the last quarter of this year. Unit 2 is expected to be operational next year, with Unit 3 a year later.

The $9.3-billion plant will be the biggest nuclear facility in the nation and the second-largest in the world. The largest is just outside Leningrad in the Soviet Union.

Pfister said, "Another reason SRP and APS were interested in nuclear power was that in the period from 1960 to 1973, we were growing at a rate of 11 percent annually. Our projections suggested that growth would go on indefinitely.

"So we began an aggressive campaign of additional coal-fired units. We were really concerned that perhaps we wouldn't meet the load (demand) as it developed in the area."

That was the environment in 1973 when APS and SRP made the decision to build three 1,270-megawatt nuclear units.

"Why did we make that decision? First of all, we had a water supply, and water is a key ingredient in the generation of electricity. One obvious water supply is the effluent that comes from the 91st Avenue sewage-treatment plant, and SRP and APS felt that would be an ideal water supply for a nuclear plant," Pfister said.

"It was an excellent site out there, from the geological standpoint. This area generally is a low risk for earthquakes."

Another major reason for selecting Palo Verde was the economics. All the studies that APS and SRP did at that time clearly demonstrated the choice was nuclear power. It was far more economical than coal-fired generation, and the prices were far more predictable at that time than coal because of the "environmental" controversy, particularly in Western states," Pfister said.

Reliability, a major issue with any power plant, was another factor, he added.

"Other units were being sold by Combustion Engineering, so we would be the ninth or 10th unit of this size and model to go on line, and we thought we could learn by the technological evolution that comes about.

"Interestingly enough, those other units were canceled, so Palo Verde is the first of this model to come on line," Pfister said.

"But in 1973, when we made the commitment, it looked to us that we would be using an experienced product rather than the state-of-the-art product that we find ourselves with.

"Well, SRP and APS had a lot of competition as to who would be project manager and operating agent for the Palo Verde plant. And guess who lost? APS," Pfister said.

APS got the job.

Pfister later said, "But with 20-20 hindsight, if only I had known in 1973 what I know now, I never would have participated in Palo Verde. There's just no doubt about it. But I can't go back and make that decision. Palo Verde is there, its first unit is 100 percent complete. We've spent over $4.5 billion in the ground out there already. It needs to be completed. I wish it wasn't there, I really do, but there's nothing I can do to push it away."

In answering a question from his audience, he stated that in hindsight, he would prefer "a large, coal-fired generating station" in place of Palo Verde.

"Then the (1973) Arab oil embargo came and completely changed the dynamics in the electric-utility business," Pfister said.

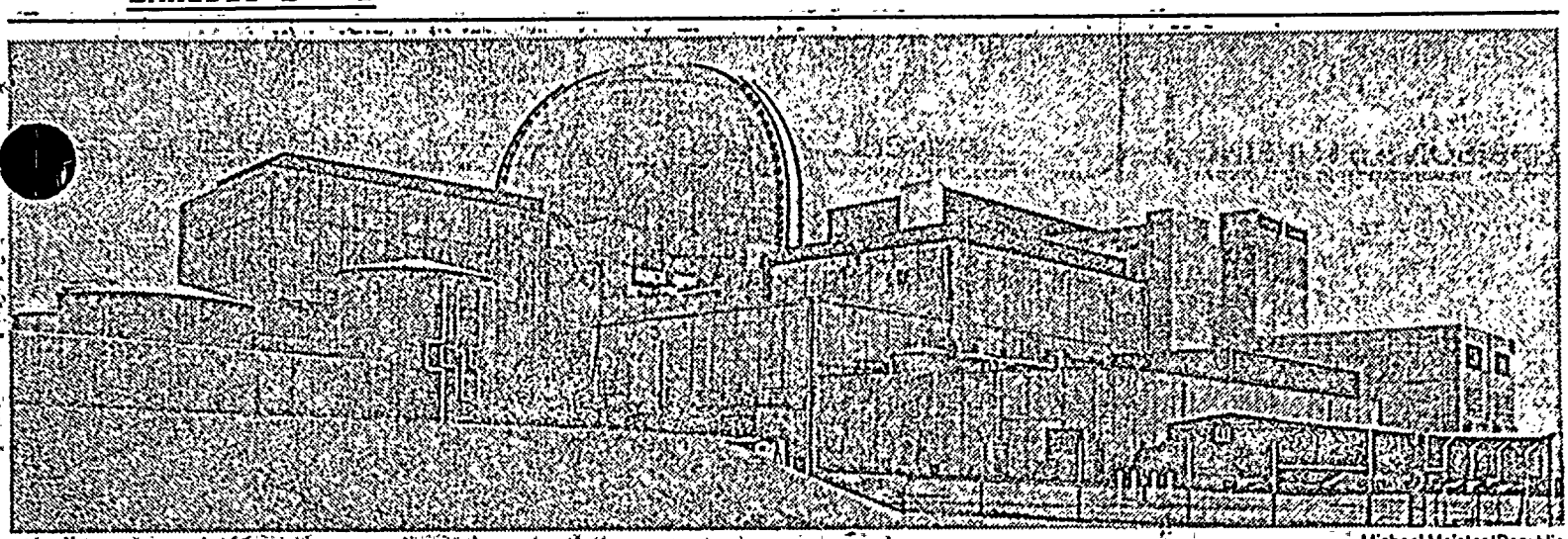
"We had thought before that electricity price was inelastic. People would continue to use electricity no matter what the price. We found that concept was in error.

"Just like any other product in society, electricity does have price elasticity, and when prices go up, demand begins to go down," the SRP official said.

As a result of energy price increases due to the oil embargo, Pfister said, "our customers started using less, and we went from a load growth of more than 11 percent to one of less than 5 percent."

"Until 1979, things were looking good, until the accident at Three Mile Island. That was, I believe, the turning point in public acceptance of nuclear power," he said.

EXHIBIT E - 1



Michael Meister/Republic

Palo Verde's Unit 1 reactor must have been running at 95 percent capacity or more for 100 continuous hours before March 1, the Arizona Corporation Commission has said. Plant operators would be penalized for any delays caused by "imprudent" decisions.

NRC wary about Palo Verde management

Analysis

By JOHN STAGGS
Arizona Republic Staff

The Nuclear Regulatory Commission is unhappy with management and design problems at Palo Verde Nuclear Generating Station.

During a series of meetings two weeks ago last week in Washington, it became clear that NRC officials and members of the Advisory Committee on Reactor Safeguards regard Palo Verde management as lacking in experience.

Manny Licitra, the NRC's project manager for Palo Verde, said recently in Bethesda, Md., "I wouldn't hold Palo Verde up as a shining example. They're about average. Good operators, good housekeepers. But management, well. . . ."

Jesse Ebersole, the chairman of the NRC's reactor-safeguards panel, said of one safety system: "It was a patchwork design. I think they have a lousy design they are patching up."

Another member of the committee echoed, "We're finding out that people like Arizona Public Service don't look closely at these things."

Palo Verde is administered on a day-to-day basis by the Arizona Nuclear Power Project, a separate entity created by the seven utilities that own the plant, of which one is APS.

Officials of APS, which the other utilities picked to be project manager, withheld comment on the advisory panel's meeting.

The panel meets monthly to discuss the status of nuclear power plants around the country. When its members feel it is necessary, they send a letter to the NRC recommending action.

The NRC does not have to act on the advice, but indications are that the panel's recommendations are taken seriously.

Greg Cook, an NRC spokesman, said, "A tremendously negative report can influence the NRC in licensing matters."

On Nov. 9, after detailed discussions, the reactor-safeguards panel decided to put off issuing a letter concering Palo Verde, which probably will recommend a redesign of part of the safety system in question, until its December meeting.

The recommendations could wind up costing Palo Verde's owners a lot. According to Neal Beets, an attorney for the Arizona Corporation Commission, a $2.86 billion spending cap has been placed on APS' involvement in Palo Verde.

"Presumably, delays in the future are going to cost money, but it's an issue that's going to have to be addressed at the time," Beets said.

The time, if it does come, will be after March 1. That's the Corporation Commission's deadline by which Unit 1 must run at 95 percent capacity or above for 100 continuous hours.

Also in place is an incentive program, "which is designed to protect the ratepayers," Beets sid.

The program would penalize Palo Verde operators for delays caused by "imprudent" decisions that might prevent the station from becoming operational by March 1.

The plan also provides for rewards for work done ahead of time.

Plant officials could escape penalties if they could prove either that the delays were unavoidable or that they were caused by "acts of God."

"There's pretty strict language on what qualifies for acts of God," Beets added.

Henry B. Sargent Jr., executive vice president and chief financial officer of APS, outlined the company's agreement with the Corporation Commission.

If the March 1 deadline is missed, Sargent said, APS could not put any of the Palo Verde costs into the rate base, and its earnings would suffer.

He explained that the stockholders would start to feel the effects of the financing expense as profits fall, and "it would be several million dollars per month."

Under the incentive plan, "We have to operate at 60 percent of capacity for the first year," Sargent said.

If the unit operated below that capacity and APS has to get power from other sources, 50 percent of costs would be charged to ratepayers and 50 percent to stockholders.

But if the plant operated at 75 percent capacity for the first year, the savings also would be split 50-50.

There is a sliding scale of costs and savings for lower or higher power generation.

The savings come from not having to purchase power from other sources.

If the NRC advisory committee insists on

— NRC, E2

ARIZONA REPUBLIC
p. E-1 Nov. 24, 1985

NRC

Continued from E1

extensive changes, that could cause Unit 1 to miss its March 31 deadline.

Meanwhile, Palo Verde's numerous stoppages and delays have been anticipated because Unit 1 has been in its testing start-up phase, the station's management says.

However, as the company's target for 100 percent operation of Jan. 1 approaches, the possibility arises that the date might be missed. Throughout the year, the plant's officials have never expressed any reservation that the unit would be operating at 100 percent capacity on Jan. 1.

But recent problems dampen that optimism.

Safety designs have proved to be faulty, defects have been revealed in electrical components, and even bolts have been found to be of the wrong technical specifications. Hundreds of bolts are involved.

As it stands, technicians at the plant will be spending the next two to three weeks tightening bolts on pipe supports in Units 1 and 2. No power will be generated until the job is finished.

Brad Parker, a spokesman for the Arizona Nuclear Power Project, said late last week, "January 1 is no magic number for the utilities concerned. It is a self-imposed deadline."

Only two weeks ago, Palo Verde decided not to contest a $50,000 fine proposed by the NRC after it was discovered that an area that was to be used to take air and water samples in the event of an accident could have exposed sampling personnel to unhealthy amounts of radiation.

The NRC's assistant director of licensing, Tom Novak, told the committee that the commission has five requirements that it wants Palo Verde management to meet before a low-power license will be issued for Unit 2.

Three of the requirements deal with mechanical systems at the plant. A fourth is certification by APS that design, construction and testing of Unit 2 conform to NRC requirements.

And, in what could have the most serious implications of all, the NRC's fifth requirement insists on completion of testing through 100 percent operation at Unit 1 before starting up the nuclear reactor in Unit 2.

As Licitra, the NRC's project manager at Palo Verde, said during the meeting, he would not look very favorably" at having two units in a start-up mode at the same time.

"We don't want to overtax management on two competing issues (units)," he said.

In other words, don't expect to get a low-power operating license for Unit 2 until it's proven to the NRC that Unit 1 is up and reliable.

"Actually, they don't want to overload Bynum," one NRC source said. Joe Bynum is plant manager for Palo Verde.

The advisory committee suggested in December 1981 that a study be carried out to determine how well various safety system interact and how reliable they are. Ebersole said that if the study had been made, perhaps various problems could have been detected and resolved earlier.

In New York last week, after a briefing on a preliminary audit of construction costs of Palo Verde, utility regulators from four states agreed more study is needed.

After a private briefing Tuesday during a meeting in Phoenix of the National Association of Regulatory Utility Commissioners, Arizona commission Chairman Renz Jennings said, "There are enough concerns in several areas that make it important for us to conduct a full study."

Jennings' counterparts from California, New Mexico and Texas — which have utilities in the consortium that is building Palo Verde — would not discuss the briefing. They designated Christopher Kempley, attorney for the Arizona commission and spokesman for the regional group, as their spokesman.

"There was a consensus among all of the commissioners that attended that there is enough evidence in the preliminary report to warrant our moving ahead with a full study," Kempley said. He would not discuss details of the preliminary audit.

Jennings said the report will be released this week and the state agencies will make a formal decision in December on whether to proceed with the full audit.

Despite the criticism of management, most utilities in the consortium remain generally supportive of APS management.

Officials at the Los Angeles Department of Power and Water, which has a 5.7 percent ownership in Palo Verde, the smallest share, have no reservations about management.

"From a construction viewpoint, it's the best job in the country," declared Dan Waters, a spokesman for the project.

"As a matter of fact, we were the latest purchaser. We bought in in 1981. And no, we have not even thought about selling any part of Palo Verde.

"They did have some (management) problems between construction and start-up. That was in March '84. But APS corrected the situation at the management level."

Waters was speaking of the appointment of Ed Van Brunt as executive vice president and director of the Arizona Nuclear Power Project.

"When they hired Van Brunt, that solved the situation," Waters said. Van Brunt has been with the project since 1972, previously having worked on the start-up of the St. Lucie nuclear project in St. Lucie County, Fla. The units are a little more than half the size of Palo Verde.

In addition, Jerry Haynes, Palo Verde's vice president in charge of nuclear production, was hired in July from the San Onofre Nuclear Generating Station near San Clemente, Calif.

According to Haynes' presentation to the advisory committee, the project is six weeks behind schedule. In the past, Palo Verde officials have said that the start-up schedule allows for breakdowns and delays.

Evidently, the Los Angeles utility and APS are observing different timetables.

"They are probably three, four months ahead of schedule," Waters said. "We're not counting on power until April."

According to the NRC's Licitra, although Van Brunt and Haynes apparently are the strong suits on Palo Verde's management team, more needs to be done.

Although the Los Angeles utility is a strong supporter of Palo Verde and its management, some other owners admit that their earlier decisions to get involved have caused problems for them and their customers.

Henry Quintana, a spokesman for El Paso (Texas) Electric Co., which owns 15.8 percent of Palo Verde, said the utility has a rate-increase request pending in Austin, the state capital.

"We did try to sell a one-third interest of our share" in the plant, he said, "but the City Council wouldn't go along with our proposals."

Quintana said the rate hike, if granted by the Texas Public Service Commission, would take effect Jan. 1 and would total "about $67 million.

"That's about a 25 percent increase," he said, adding that the average monthly residential electricity bill in El Paso is $48 and will

go to $60 if the rate hike is approved.

Quintana said the rate hike, if approved, would last for one year. If necessary, power officials would ask the Public Service Commission to continue the hike.

"We'll also be asking for rate hikes as the other units come on line," Quintana said. Those figures are undecided.

Another 15.8 percent owner in the plant is Southern California Edison. A spokesman, Dave Barron, said, "We've counted on that power resource for quite awhile."

But he added, "We also have not expressed any desire to purchase any extra interest."

Barron said Edison management would have no comment on the safeguards-committee meeting immediately.

Edison holds a 75 percent interest in the San Onofre station, which is slightly smaller than Palo Verde.

Becky Sordelet, also speaking for Edison, said, "We already filed a rate-request hike back on May 31 for $99 million" relating to the start-up of Unit 1.

The California Public Service Commission has not ruled on the petition.

However, "Now it looks like it may be offset in fuel savings," Sordelet said. "Using nuclear fuel is much cheaper than oil or fossil fuel."

The $99 million would increase the average monthly residential bill by about 80 cents, she said.

"We're going to be filing a rate-hike request for Unit 2" probably after January, she said, but the amount is unknown at this time.

Mary Zimmerman, a spokeswoman for Public Service Co. of New Mexico, which owns 10.2 percent of Palo Verde, said, "When we committed ourselves, all the forecasts indicated that we would need that power. We were projecting an increase in consumption."

However, growth of the customer base failed to keep pace with expectations, and demand slackened for a variety of reasons.

"We think we'll need it in the 1990s," Zimmerman said.

In the meantime, Zimmerman said, the New Mexico utility is trying to lessen the impact of "rate shock."

Under one proposal, $400 million worth of the utility's Palo Verde investment would be sold to investors and leased back from them, she said.

Hearings on that proposal began before the New Mexico commission on Nov. 12, she said.

With another proposal, "We have a concept called inventorying," which is selling excess power to other utilities. Zimmerman said inventorying "was approved last year and was put into effect last July."

Under the lease-back venture, the utility would "have no gain or loss," she said. "The $400 million would include all of PNM's ownership of Unit 1 and up to a third of our 10.2 percent interest in Palo Verde's common facilities."

The New Mexico utility would retain two-thirds of its 10.2 percent ownership of Units 2 and 3 of Palo Verde.

The owner of another small piece of Palo Verde, the Southern California Public Power Authority, tends to agree with Waters, of the Los Angeles Department of Power and Water.

"They admitted they had some problems back then (in 1984), but by and large, they solved them," said Art Devine, a spokesman for the Southern California authority.

The authority is a group of 10 utilities that combined to buy a small portion of the output of Palo Verde, 5.91 percent. That translates into 225 megawatts.

Although the authority's demand is around 6,000 megawatts, "they (the authority) will always need it (Palo Verde power) because they're trying to get off oil," Devine said.

Oil-generated power is the most expensive in use today by utilities.

The Salt River Project, the only other Arizona utility investing in Palo Verde besides APS, owns 17.4 percent of the installation.

The SRP sold a small portion, 5.7 percent, to the Los Angeles power agency, but has no intention of selling any more, a spokesman said. The SRP has no other nuclear-energy properties.

Spokesman Larry Crittenden said that despite critics, "We are still confident that APS is doing a good job of managing Palo Verde, and we still think Palo Verde has a good record."

The triple-reactor plant, begun in 1976, was expected to cost $2.7 billion. Over the years, the cost rose to $5.8 billion, and with financing costs added, will now cost $9.3 billion.

When completed and fully operational in 1987, it will be the largest nuclear power plant in the nation, second-largest behind a nuclear plant in the Soviet Union.

EXHIBIT E - 2

Nod given for system at A-plant

But panel is critical of safety 'patchwork'

By JOHN STAGGS
Arizona Republic Staff

11-10-85
B-1

WASHINGTON — A government panel decided Saturday to recommend that the Nuclear Regulatory Commission grant interim approval to what it called a "patchwork" safety system at the Palo Verde Nuclear Generating Station.

"We suggest that they carry out a systems-interaction and reliability study," said Jesse Ebersole, chairman of the Nuclear Regulatory Commission's advisory committee on reactor safeguards.

"If they had done that (in 1981), the problems may have been discovered," he said, referring to faults that led to redesigning a pressurized auxiliary-spray system, which would be used only in a major emergency.

The panel urged the study in 1981, but it was not done.

The full committee met Saturday to discuss exactly what its letter to the NRC should contain. The committee decided to delay the issue and will discuss it at the next regular meeting in December.

Greg Cook, an NRC spokesman, said last week that a "tremendously negative" report from the advisory committee, which is made up of technical experts, can influence the NRC regarding a commercial license for Unit 1.

Faults in the auxiliary-spray system, which is used to help cool the reactor, were discovered during a Sept. 12 test at the plant.

A gauge on a water tank indicated that the tank contained water when, in fact, it did not. Also, a switch that would have released water automatically from a secondary tank failed.

The switch could not be operated from the control room, and an operator had to leave the controls and open the valve on the secondary tank.

Arizona Public Service Co. officials Thursday explained the redesigned system under questioning by the committee.

The new system received apparent approval, but Saturday the committee concluded, as Ebersole put it, "It was a patchwork design. I think they have a lousy design they are patching up."

Ebersole and other members of the committee generally were critical of Palo Verde management.

"They say they don't have to do these things because they do them in the normal course of their work," one of the 15 members complained.

Another member later said, "We're finding out that people like Arizona Public Service don't look closely at these things."

Ebersole said that if the systems-reliability study had been done, "maybe they would find some of these snakes."

— A-plant, B5

A-plant

Continued from B1

In response to the problems with the spray system, Palo Verde officials said they would visually inspect water levels daily instead of weekly. In addition, operators will be able to control the valves on the secondary tank without leaving the control room.

Charles Wylie, a committee member, said resignedly, "Now they tell us the two valves are on the same electrical circuit. If that circuit fails, they say the operator has time to go and close the valves."

The 15 members of the panel are appointed by the NRC to four-year terms. The committee's function is to provide an outside source of technical expertise to the NRC.

The panel's decisions are nonbinding but generally followed.

Advisers to NRC criticize Palo Verde

G-1
11-8-85

By JOHN STAGGS
Arizona Republic Staff

WASHINGTON — A federal committee Thursday was highly critical of some aspects of the start-up of the Palo Verde Nuclear Generating Station, but the complaints do not appear serious enough to delay commercial licensing of Unit 1 or fuel loading of Unit 2.

"The way I interpreted the meeting was that the committee was in support of continuing the licensing process," said Tom Novak, assistant director of licensing for the Nuclear Regulatory Commission.

Members of the NRC advisory committee on reactor safety frequently interrupted Arizona Public Service Co. Vice President Jerry Haynes as he outlined progress on the yearlong start-up of the first of the three reactor units being built at the power plant west of Phoenix.

Although the panel members expressed a wide range of concerns, they zeroed in on three main areas — the post-accident radiation-sampling system, the emergency core-cooling system and the auxiliary spray system.

The advisory committee is made up of 15 members from outside the NRC who provide technical expertise. Its recommendations to the NRC are not binding.

Drawing most of their attention was the spray system, which is used to help cool the reactor in emergencies.

The system malfunctioned during a test Sept. 12 in what NRC safety official Harold Denton said at the time was a "significant failure."

According to the NRC assessment of the failure, a valve indicator did not read properly, indicating there was fluid in the spray-system tank when there was none.

In addition, a backup switch that would have automatically released water from the secondary tank failed. The switch could not be operated from the control room and an operator had to leave to open the valve.

APS officials assured the panel that corrective measures have been taken, including visual inspection of the fluid level on a daily basis, rather than weekly.

Also, they said, plant operators now are able to view the level and operate the backup switch from the control room, and two extra pumps have been installed in the spray system as additional safety measures in case of failure.

However, panel member Charles Wylie complained that it was "not clear that the operator can respond quickly enough in the event of an equipment malfunction."

APS officials also told panel members that problems with the two other major areas of concern have been corrected.

The sampling system, which is used to take radiation samples in different areas of the plant in the event of a major accident, came under fire because one of the testing devices was located in an area subject to high radiation levels, which could have prevented someone from collecting data from it.

Plant officials, who Thursday agreed to pay a $50,000 fine imposed by the NRC for placing the device in an unauthorized location.

— Advisers, G2

A-plant owners won't contest fine

By FRANK TURCO
Arizona Republic Staff

The Arizona Nuclear Power Project said Thursday it will pay rather than appeal a $50,000 fine levied against it last month by federal authorities for a safety violation at the Palo Verde Nuclear Generating Station.

"After examining our options, we have decided it is a prudent management decision for ANPP to pay the fine rather than engage in a lengthy and costly appeals process," said Ed Van Brunt, executive vice president of the consortium of seven Western utilities involved in construction of the plant.

It marks the third time the federal Nuclear Regulatory Commission has issued fines for violations at the $9.3 billion, triple-reactor power plant being built west of Phoenix.

In 1983, the Arizona Public Service Co., construction manager for the plant, paid a $20,000 fine for a breakdown in quality assurance at the site, and Bechtel Power Corp., the general contractor, paid a $40,000 fine for failing to properly maintain electrical-system-installation records.

The latest penalty was assessed by the NRC in October, after a three-month investigation into the placement of a radiation-monitoring device inside the reactor-containment building of Unit 1.

NRC inspectors charged that the testing device was located in an area that would be subject to high radiation under certain accident conditions and that plant operators would be severely limited or even precluded from getting close enough to it to collect information.

Van Brunt said the device was moved to another location after plant officials learned of the NRC concerns, even though he maintained the device would have worked properly at the other site.

"We feel that PASS (post-accident sampling system) was capable of performing its function under plant conditions," he said.

He said the system is not involved in the daily operation of the plant but comes into use only in the event of a major accident.

"At no time was the health and safety of the public ever jeopardized," he said.

Meanwhile, plant technicians continue to ready Unit 1 for a possible restart within the next several days, according to plant spokesman Dan Canady.

The unit, which has been undergoing tests since May, has been out of commission since Oct. 24 when the reactor shut itself down during a test. Operators were ready to restart it again Oct. 29, but an electrical problem developed, delaying the start-up process.

"We're hoping to begin the process of returning the unit to operation over the weekend or early next week," Canady said.

The operators hope to have the unit in commercial operation before the end of the year.

— Fine, G2

Advisers

Continued from G1

said the measuring device has been relocated to an approved area.

The problem with the emergency-core cooling system is of a more legal nature, according to Novak.

He said the technique for ensuring that the temperature of the reactor does not exceed 2,200 degrees Fahrenheit in the event of an accident was miscalculated by Combustion Engineering, the firm that built the reactor, and the result would be a slightly higher reactor temperature.

Technical adjustments will be made to bring it into compliance, he said, adding, "This is a small change, and I'm sure they'll resolve it."

The temperature must be controlled to prevent the melting of fuel coverings.

The commmittee plans to meet again Saturday to review the situation and draft recommendations that will be made to the NRC.

Although its recommendations are not binding, Greg Cook, an NRC spokesman, said a "tremendously negative" report can influence the NRC regarding a commercial license for Unit 1.

The target date for commercial operation is Dec. 31. A low-power operating license for Unit 2 could be held up if the license for Unit 1 was delayed past that date.

Fuel loading for Unit 2 had been scheduled by APS for Nov. 1, but a spokesman for Palo Verde said that would have been the date "if everything had gone exactly right."

During the meeting, NRC safety official Manny Licitra said he would not look "very favorably" at having two units in a start-up mode at the same time.

"We don't want to overtax management on two competing issues (units)," he said.

However, he said during an interview later that there would be no objection to loading fuel into Unit 2 while the NRC was studying improvements to Unit 1.

During the meeting, Jesse Ebersole, committee chairman, recalled that four years ago, the committee made the recommendation that "system interaction" be studied, meaning the exchange of technical experience between operators of Units 1 and 2.

"Have you made a systems interaction study?" Ebersole asked Haynes, APS vice president for nuclear production.

"I don't think so," Haynes replied.

"Do we just idly make recommendations?" Ebersole asked.

Novak said the commission will make recommendations and require commitments on the matter.

During the presentation, Haynes used a slide to show the projected start-up schedule for Unit 1 and compared it with what actually took place during the past year.

The result was a wide disparity between the two.

Unplanned outages and "numerous deficiencies," Haynes said, have resulted in the unit's being six weeks behind schedule.

The unit has experienced seven unplanned reactor shutdowns, he said, "not a large number, but certainly more than what we would like to see."

Fine

Continued from G1

EXHIBIT E-3

EXHIBIT F - 1

NRC orders Palo Verde officials to meeting over safety failure

By JOHN STAGGS
Arizona Republic Staff

9-19-85
A-1

A safety-system failure at the Palo Verde Nuclear Generating Station last Thursday "raised all sorts of questions" at the Nuclear Regulatory Commission, and the panel Wednesday told plant operators to attend a meeting to discuss the plant's safety.

Questions about the plant's safety stem from a test at Palo Verde last Thursday. They will be discussed with Arizona Public Service Co. officials Friday at the NRC's headquarters in Bethesda, Md.

According to the NRC, during the test, one safety-system misled operators into believing water was available in the main water-storage tank of a secondary cooling system, but there was none.

A switch that would have released cooling water from a second tank failed because switches could not be opened from the control room. An operator finally had to leave the control room and open the valve on a second tank manually.

The cooling system is used to reduce pressure on one of the reactor's steam lines by cooling the steam.

"A valve indicator failed to read properly," NRC spokesman Greg Cook said. "It said there was fluid in the tank when there was none. The event has raised all sorts of questions with us."

The failure came during a load-rejection test that was designed to determine if the unit would switch to a backup power system when it lost its main source. During that procedure, a reserve power system that was supposed to supply energy to the Unit 1 water pumps didn't work, and the reactor shut itself down.

On Monday, the test was per-

—NRC, A12

NRC

Continued from A1

formed successfully. However, the unit has remained out of service for further testing. APS officials said it could be restarted in "a couple of days."

On Wednesday, Palo Verde operators sent the NRC a letter in which they proposed asking Combustion Engineering of Windsor, Conn., to reanalyze the secondary cooling system.

Cook said the NRC sent a letter to Palo Verde's operators directing them to ensure their "commitment that the design of this system is resolved to the satisfaction of the NRC staff."

"If we can't settle the question (on design of the safety system) or agree on a schedule for resolving it, they would have to shut down," Cook said.

He said that if Combustion Engineering, which designed and built the reactor, decides the system "needs to be safety graded, the designs will be ready."

Safety grading means making the parts of a given system redundant, so that if a part fails, another is available to perform its function, making the system, as Cook phrased it, "virtually duplicate. You could not lose that system."

"They have 30 days to come back to us," he said, referring to possible design changes by Combustion Engineering. "For the interim, they have proposed to change procedures. They will increase the frequency of preventive-maintenance procedures. It was monthly; now it will be weekly."

Dan Canady, a spokesman for Palo Verde, said that he thinks Jerry Haynes, APS vice president for nuclear production, will attend the meeting at NRC headquarters.

APS is project manager for Palo Verde, which is owned by a consortium of seven Southwestern utilities. The plant is 50 miles west of downtown Phoenix.

EXHIBIT F - 2

Cooling-test failure at Palo Verde called significant by NRC expert

9-21-85 A-1

By JOHN STAGGS
Arizona Republic Staff

BETHESDA, Md. — The Nuclear Regulatory Commission's top reactor-safety expert said Friday that a "significant failure" occurred at the Palo Verde Nuclear Generating Station on Sept. 12.

Harold Denton, who is in charge of regulating safety features for the commission, said the failure of a cooling system during a test "indicates that the system we're relying on in Combustion Engineering plants didn't work properly."

"In this case, it wasn't a safety implication, because the plant was at 55 percent power," he said. "But it would be a problem if it were at full power."

Denton's comments came during a meeting at NRC headquarters Friday.

The commission had ordered Palo Verde operators to appear at the meeting to explain why the cooling system in Unit 1 had failed.

The failure prompted the NRC to order that the reactor not be restarted until after the meeting.

Brian Sheron, chief of the NRC's reactor planning branch said the order was issued because "we didn't feel comfortable that the plant could be operated safely."

During the meeting, operators of the plant agreed to implement four recommendations from the commission before restarting the Unit 1 reactor, which has been out of operation since Monday.

NRC officials noted there were more than the normal number of people in the Unit 1 control room the night of the test because it happened while a shift change was about to occur.

"You may want to make it (that number of people) permanent," one NRC official said.

NRC officials at the meeting intensely questioned senior reactor operator Dennis Swan about his actions after it was discovered that valves involved in the auxiliary steam-cooling system had frozen when power to Unit 1 was cut off as part of the test.

In addition, a faulty fluid indicator on a wafer tank that is part of the cooling system led plant operators to believe there was an adequate amount of water in the tank when, in fact, there was not.

Swan was in charge of the control room in Unit 1 the night of the test.

Other Palo Verde officials attending the meeting were Jerry Haynes, Arizona Public Service Co. vice president for nuclear production; Richard Gouge, day-shift supervisor for Unit 1; and T.F. Quan, APS nuclear-licensing supervisor.

The cooling-system failure has raised questions about the safety design of not only Unit 1 at Palo Verde and two other units still under construction, but three other plants as well, according to NRC

— NRC, A2

NRC

Continued from A1

officials.

Those are the Unit 2 and Unit 3 reactors at the San Onofre plant at San Clemente, Calif., the Waterford plant near Taft, La., and the Washington Public Power Supply System's Unit 3 reactor at Satsop, Wash.

NRC officials said Friday that all of those plants along with the manufacturer of their reactors, Combustion Engineering Inc., are being re-examined.

The test at Palo Verde was rerun successfully Monday.

At Friday's meeting, plant officials explained in detail how the valve problem occurred.

The system in question is called the auxiliary spray system. Its function is to help cool a pressurized steam chamber in emergencies. It is one of several systems that would be used to prevent overheating.

At one point during the meeting, plant officials attempted to downgrade the importance of the system, noting that other nuclear plants use alternate methods to cool reactors and decrease pressure.

"I feel very uncomfortable with an operator telling me a system isn't needed," Sheron said sternly.

Haynes responded, "We think the design is as good as any and better than most."

Shortly after Friday's meeting with the NRC, Palo Verde spokesman Dan Canady reported the plant should be in operation again sometime over the weekend.

"We've already begun the process to restart the plant," he said.

After the reactor is restarted it will be taken to 80 percent power. Unit 1 is in its power-ascension phase during which it is raised to various power levels and taken down and inspected for faults. Its schedule calls for it to reach 100 percent power by year's end.

The NRC recommendations plant officials agreed to implement are:

- To monitor the volume of water in the backup cooling system daily rather than weekly. Palo Verde officials have been checking it monthly, but after the failure, the NRC suggested the more frequent checks.
- To look for ways to improve review procedures.
- To review start-up testing procedures.

"Because it is a new design, we suggest you look at your programs to see whether there is enough vendor (equipment supplier) input. Should you get additional information from the people closer to the plant?" the NRC asked.

- To review staffing in the control room.