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SUBJECT: Responds to NRC 871231 ltr re violations noted in Insp Repts  
 50-528/87-40 . Corrective actions: method of posting modified  
 to elevate rope permitting entry w/o removing barricade &  
 walkdown conducted.

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## Arizona Nuclear Power Project

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102-00594-EEVB/TDS  
February 1, 1988

NRC Document Control Desk  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Subject: Palo Verde Nuclear Generating Station (PVNGS)  
Unit 1  
Docket No. STN 50-528 (License NPF-41)  
Response to Notices of Violation: 50-528/87-40-01  
50-528/87-40-02  
File: 88-056-026

Reference: Letter from R. A. Scarano (NRC) to E. E. Van Brunt, Jr. (ANPP),  
dated December 31, 1987; NRC Inspection Reports 50-528/87-40,  
50-529/87-39, 50-530/87-41

Dear Sirs:

This letter is provided in response to the inspection conducted by Messrs. H. North and G. Cicotte on November 16-20, 1987. Based upon the results of the inspection, two violations of NRC requirements were identified. Because of the similarity in the root causes and the corrective actions that are being implemented one response is being submitted to address both Notices. The violations are discussed in Appendix A of the referenced letter.

The violations and ANPP's response are provided in the attachment to this letter. If you have any questions regarding the response, please contact Mr. Timothy Shriver of my staff at (602) 393-2521.

Very truly yours,

E. E. Van Brunt, Jr.  
Executive Vice President  
Project Director

EEVB/TDS/kj

cc: O. M. DeMichele (all w/a)  
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APPENDIX A  
NOTICE OF VIOLATION

Arizona Public Service Company  
Palo Verde Nuclear Generating Station Unit 1

Docket No. 50-528  
License No. NPF-41

During an NRC inspection conducted on November 16-20, 1987, two violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C (1987), the violations are listed below:

A. 10 CFR 20.203, "Caution signs, labels, signals and controls" states, in part:

"(b) Radiation areas. Each radiation area shall be conspicuously posted with a sign or signs bearing the radiation caution symbol and the words:

"CAUTION<sup>1</sup>

"Radiation Area

"...<sup>1</sup> Or 'Danger.'"

Contrary to the above, on November 17, 1987, radiation areas within the West Mechanical Penetration Access Room of the Auxiliary Building were not conspicuously posted in that no sign bearing the radiation caution symbol and the words "Caution, Radiation Area," was visible.

This is a Severity Level V violation (Supplement IV).

B. Technical Specification (TS) 6.12, "High Radiation Areas," states, in part:

"6.12.1 In lieu of the "control device" or "alarm signal" required by paragraph 20.203(c)(2) of 10 CFR Part 20, each high radiation area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a high radiation area...."

Contrary to the above, on November 17, 1987, and again on November 19, 1987, the West Mechanical Penetration Access Room of the auxiliary Building had two small areas where the intensity of radiation measured between 100 and 800 millirem per hour and were not barricaded and conspicuously posted as high radiation areas.

This is a Severity Level IV violation (Supplement IV).



RESPONSE TO NOTICES OF VIOLATION

I. REASON FOR VIOLATION

ANPP has reviewed the circumstances surrounding the events described in the Notices of Violation. The review identified the root cause in each instance to be personnel errors contrary to approved procedural controls. The evaluation required to determine the necessary corrective action had not been initiated prior to the identification of the similar issue on the following day. In each instance the required postings had been made but were subsequently removed, presumably by authorized workers requiring access to the areas. Although this assumption can not be substantiated, there were authorized work activities being conducted in the areas discussed in the Notices. As discussed above, the root cause is considered to be personnel error. However, in the specific cases cited the method of posting is considered to be a contributing cause. During that time period the posting method utilized consisted of establishing a barricade with rope and securing the required warning signs to the barricade. The rope was positioned such that it had to be removed to permit access and then repositioned. In cases such as these there are no specific instructions or cautions provided to remind individuals to replace the barrier.



II. CORRECTIVE STEPS WHICH HAVE BEEN TAKEN AND RESULTS ACHIEVED

The posting methodology discussed above increased the probability that individuals would be placed in a situation where procedural errors could be committed. It is recognized that this potential exists with any activity. However, it is incumbent upon the responsible management to minimize this probability whenever possible. Subsequently, as a result of the identified concerns, the method of posting has been modified to elevate the rope where possible to permit entry without having to remove the barricade yet have the warnings remain conspicuously posted. The postings in the specific areas identified have been modified.

Additionally, a walkdown has been conducted and the postings modified where possible. ANPP believes that these actions are adequate to prevent recurrence. However, as discussed in section III additional measures are being taken to enhance the overall program performance.

III. CORRECTIVE STEPS WHICH WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

The remedial corrective actions discussed above are considered adequate to prevent recurrence of the specific type of events described in the Notices of Violation. However, it is not ANPP's intent to react to individual events as they are identified but, rather, to evaluate the



entire scope of the Radiation Protection Program and implement any enhancements which may improve the overall performance and prevent errors from occurring. As a result, an evaluation was conducted which overviewed program adequacy, management involvement, training, and field implementation. During the evaluation QA Audits, QA Monitoring Reports, NRC Inspection Reports, NRC Notices of Violation, INPO recommendations, and comments provided during inspections were considered. Based upon the evaluation several conclusions were drawn and appropriate actions have been initiated.

ANPP believes that the existing programmatic and procedural controls that are in place meet ANPP's regulatory commitments. This conclusion is based on the fact that each quality-related procedure is reviewed for regulatory compliance prior to implementation. As an additional measure the Quality Systems/Engineering Department will conduct a comprehensive review of the programmatic controls governing the activities associated with the Radiation Protection Program for compliance with regulatory commitments and industry practices.

As previously discussed in ANPP's response to a NRC Region V concern (ANPP letter 102-00572-EEVB/TDS dated December 31, 1987), management attention in the Radiation Protection area has been reviewed by executive level management. ANPP believes that the recent



reorganization will provide more management involvement in field activities and should provide the necessary supervision to produce an increased level of attention to detail. However, ANPP believes that the Radiation Protection Management should have taken more aggressive action in identifying the contributory cause associated with these events and initiating the necessary corrective actions to eliminate the potential for repetitive errors. The programmatic controls at Palo Verde Nuclear Generating Station were not established to regulate compliance without regard for the impact on the daily activities of the employees. The intent was to establish controls which would ensure compliance in such a manner that they would assist the employees not hinder them in their efforts to achieve compliance. In these cases it is believed that the responsible management should have recognized that the posting techniques utilized made it difficult for the employees to comply and therefore increased the probability for errors to be committed. In an effort to ensure the proper sensitivity is established in the Radiation Protection Department a copy of this response will be required reading for not only the management but each technician in the Radiation Protection Department. The intent is to create an attitude such that potential improvements, such as modifying the posting techniques, are identified to the appropriate levels of management for evaluation and implementation.



The overview of the training in this area was divided into two (2) different aspects. The first was the training available to the Radiation Protection technicians involved with field activities and the second was the general training provided to employees working in radiological controlled areas.

The RP Technician training has been recently accredited by INPO and is considered by ANPP to provide sufficient training to ensure the responsible technicians are capable of performing their assigned tasks. However, a preliminary assessment of the actual classroom hours attended by the technicians indicates that the Radiation Protection Departments are not fully utilizing the available training time. A meeting has been held with the responsible Unit Radiation Protection, Central Radiation Protection, and Training management to address this area. As a result, the current program will be reviewed by the line organizations for possible revision and the feedback provided to the training department for evaluation. Additionally, increased management attention will be directed to utilization of existing training courses.

The existing training provided to the general employee is considered adequate. To ensure the training remains current, the Training Department reviews industry events and events particular to PVNGS and implements revisions as necessary. Additionally, recommendations provided by other departments are considered during the revision process. Coincidental to this review a revision was made to the Radiological Work Practices (RWP) course and will provide training relevant to recently identified concerns.

The overview of the field implementation identified various weaknesses with procedural adherence. The identified deficiencies did not represent a trend indicative of a specific weakness in training, procedural adequacy, or management involvement. However, a conclusion has been drawn as discussed below.

The overview conducted did not identify a specific weakness in any particular area. The root causes of previously identified deficiencies were varied and inconclusive in identifying a particular corrective action or actions which would have prevented other apparently related events. Based upon this it was concluded that the management involvement, training, and procedural controls were adequate and the weakness existed, not specific to the Radiation Protection Department, but with the general employee attentiveness to standard radiological safety practices. As discussed in section I, the warning signs were posted and the proper surveys were conducted. However, the barriers were taken down and not properly replaced. Other instances of improper frisking and improper segregation of protective clothing indicate that the employees involved in work activities within radiological controlled areas were not sufficiently sensitive to the established controls or the necessity of safe radiological work practices. Based upon this conclusion, an aggressive program is being initiated to upgrade the awareness and increase the overall sensitivity of radiological work practices by each employee responsible for the overall program implementation. This program includes:



- a) A letter will be issued to each ANPP employee from the Executive Vice President which stresses that ANPP's number one priority of safety includes radiological safety.
- b) The production of a video tape by Executive Level management which will include reinforcement that ANPP is committed to safe radiological work practices. All ANPP employees will be required to view the tape.
- c) An issue of the "Reactor" (a monthly project publication) will include a section stressing the importance and necessity for safe radiological work practices.
- d) Accelerated disciplinary action for individuals who violate established radiological work practices.

Because of the extensive scope of the proposed program the effectiveness will be evaluated approximately six months after full implementation. Additional actions will be implemented if necessary based upon that review. ANPP believes that this aggressive approach will be successful in not only addressing the specific deficiency identified in the Notices of Violation but will be successful in upgrading the entire Radiation Protection Program.



IV. DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved upon restoration of the barrier. The following schedule has been established for the implementation of the remaining actions:

1. The review of the programmatic controls is scheduled for completion by February 29, 1988.
2. The training program review is scheduled for completion during the first quarter of 1988.
3. The revision to the RWP course is scheduled for implementation in the first quarter of 1988.
4. The letter to all ANPP employees is scheduled for issue in February, 1988.
5. The production of the video tape is scheduled to be completed in the second quarter 1988. ANPP employees will be scheduled based upon availability.
6. The article addressing radiological safety will be included in the next available edition of the "Reactor".



7. Copies of this response will be forwarded to the Responsible Radiation Protection Management for distribution the first week in February, 1988.
  
8. Disciplinary action will be initiated as the need is identified.

