

Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

September 12, 1984

ANPP-30484-EVB/WEI

U. S. Nuclear Regulatory Commission  
Region V  
Creekside Oaks Office Park  
1450 Maria Lane, Suite 210  
Walnut Creek, California 94596-5368

Attention: Mr. T. W. Bishop, Director  
Division of Reactor Safety and Projects

Subject: Response to Notices of Violations and Devia-  
tions dated August 8, 1984.

Reference: Letter from T. W. Bishop, Director, Division  
of Reactor Safety and Projects, Region V, to  
Arizona Public Service Company, Attn. E. E.  
Van Brunt, Jr., dated August 8, 1984.

Gentlemen:

The referenced letter transmitted, as Appendix A, a Notice of Violation, dated August 8, 1984, and, as Appendix B, a Notice of Deviation, dated August 8, 1984. Such Notices were the result of the inspection conducted during the period July 9-13, 1984.

Attachments A and B are submitted in response to such Notice of Violation and Attachments C and D are submitted in response to such Notice of Deviation.

The referenced letter requests that information respecting certain unresolved items be furnished. This information will be supplied under separate cover.

If you have questions respecting this response or desire any clarification or verification of any matter discussed in the Attachments, we shall be pleased to respond further as you may request.

Respectfully submitted,

*EE Van Brunt*

Edwin E. Van Brunt, Jr.  
Vice President, Nuclear  
Production

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cc: Richard DeYoung, Director  
Office of Inspection and Enforcement  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555  
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Carl Gross

STATE OF ARIZONA        )  
                                  ) ss.  
County of Maricopa     )

I, Donald B. Karner, represent that I am Assistant Vice President, Nuclear Production of Arizona Public Service Company, that the foregoing document has been signed by me for Edwin E. Van Brunt, Jr., Vice President, Nuclear Production, on behalf of Arizona Public Service Company with full authority to do so, that I have read such document and know its contents, and that to the best of my knowledge and belief, the statements made therein are true.

Donald B. Karner

Sworn to before me this 12th day of September, 1984.

Dora E. Meador  
Notary Public

My Commission Expires:

My Commission Expires April 6, 1987

ATTACHMENT A

RESPONSE TO NOTICE OF VIOLATION DATED AUGUST 8, 1984

Section A.1. Violation.

As a result of the inspection conducted on July 9-13, 1984, the following Notice of Violation dated August 8, 1984 (Notice) was issued:

"A. 10 CFR 50 Appendix B Criterion V, as addressed in Section 17 of the FSAR, states in part, 'activities affecting quality shall be prescribed by documented instructions, procedures, or drawings . . . and shall be accomplished in accordance with these instructions, procedures, or drawings.'

"Honeywell procedures PEP 2.1 Rev. 3 (paragraph 5.3), PEP 2.20 Rev. 14 and Drawing No. HON-JHA-902 Rev. L thru N require that the HVAC instrument HJA-TIC-123 enclosure be mounted on unistruts, with the unistrut nuts seated correctly on the unistruts, and with full thread engagement. Additionally, the correct number and type of washers are required inside the enclosure to secure the terminal strips (blocks) and fuse/switch base plate in the enclosure.

"Contrary to the above, during an inspection on July 11, 1984, of safety-related HVAC instrument 3-J-HJA-TIC-123 in the control room of Unit 3, the following was identified: (1) enclosure mounting unistrut nut (PC 18 on Drawing No. HON-HJA-902 Rev. N) was found incorrectly installed (cocked) on the unistrut such that it did not have full thread engagement with mounting bolt or full load bearing surface contact with the unistrut, (2) the lock washers (associated with a screw, PC. No. 34 on Drawing Nos. HON-ZZ-932-1 thru-9 Rev. D) were not installed in all applicable locations, instead flat washers were installed in some locations. The screw, nut and lockwasher assembly noted above are used to secure terminal strips (blocks) and fuse/switch base plates in the enclosure. This instrument was installed May 5, 1984 and QC accepted May 14, 1984 on an installation data sheet (form No. HM-002).

"This is a Severity Level IV Violation (Supplement II), Applicable to Unit 3."

Section A.2. Cause of the Violation.

A.2.1. The cause of the particular discrepant conditions in the mounting and assembly of the instrument identified in the Notice is attributed to incorrect initial installation by Honeywell.

Discrepant Honeywell installations were initially identified on DER 82-81. DER 84-27 was initiated on April 25, 1984 to document, evaluate and correct deficiencies identified in Unit 2 and 3 where Honeywell-installed instruments were found to be incorrectly installed. At the time the deficiencies were discovered, it was thought to have been caused by modification or removal of instruments after initial Honeywell QC acceptance. DER 84-27 was written to evaluate and correct installation in all three units as necessary. It does not appear that the subject instruments have been modified or removed after Honeywell Inspection. Therefore, it is concluded that the original installation was in error.

APS shares the concern expressed in the Inspection Report that "on-going work should be correctly performed." The need for improved control of the work of some subcontractors has been recognized by APS, Bechtel and NRC. [See May, 1984 Report of the Systematic Assessment of Licensee Performance SALP Report and the APS Response filed July 25, 1984.] The APS Response to the SALP Report (pp. 16-17) described actions taken to provide such improved controls. Such

actions were developed and implemented subsequent to May, 1984, when the instrument identified in the Notice was partially installed.

Section A.3. Response to the Notice.

A.3.1. Corrective Steps Which Have Been Taken and Results Achieved.

The specific problems with the instrument identified in the Notice will be dealt with through the disposition of DER 84-27. The nature, scope and time for completion of the corrective measures for disposition of DER 84-27 are set forth in detail in Section A.2 of APS' Response to the Notice of Violation, dated August 7, 1984, and for the sake of brevity are incorporated herein by reference.

With respect to assuring improved control of ongoing HVAC hardware installations, the program described in APS' Response to the SALP Report has been developed and implemented. Specifically, such program consists of the following:

A. Bechtel Construction QC surveillance of "Q" subcontract documentation and work activities are conducted on a daily basis. When a subcontractor is actively involved in "Q" work, a QCE will be assigned to survey the activities.

B. The Field Subcontracts organization has been instructed to direct the subcontractors to submit and document, via the Supplier Design Deviation Request (SDDR) process, all requests for deviations from specifications.

C. A process has been instituted to review subcontractor documentation for completeness and compliance to the subcontract for all work performed.

D. More emphasis has been placed by QA on surveillance of hardware installations.

E. All new construction subcontract personnel are required to attend a Quality Orientation Program.

A.3.2. Corrective Steps That Will Be Taken To Avoid Further Items of Non-Compliance.

With respect to DER 84-27, see Section A.2 of APS' Response to the Notice of Violation, dated August 7, 1984.

With respect to on-going HVAC hardware installation, APS and Bechtel QA shall conduct periodic surveillances to determine the effectiveness of the program described in Section A.3.1 hereof. Modifications of such program, including increased training, will be made as necessary to achieve proper installation of HVAC hardware and accurate and complete QC inspections and documentation.

A.3.3. Date When Full Compliance Will Be Achieved.

With respect to DER 84-27, see Section A.2 of APS' Response to the Notice of Violation, dated August 7, 1984.

With respect to the implementation of the above referenced improved controls of HVAC hardware installation, the program will continue in whole or in part until satisfactory on-going performance is achieved.

A.3.4. Propriety of Notice of Violation

APS considers the issuance of the Notice to be unwarranted since it is contrary to NRC regulations contained in 10 CFR Part 2, Appendix C, as detailed in Section A.4

of APS Response to the Notice of Violation, dated August 7,  
1984. For brevity the description is not repeated here.

ATTACHMENT B

RESPONSE TO NOTICE OF VIOLATION, DATED AUGUST 8, 1984

Section B.1. Violation.

As a result of the inspection conducted on July 9-13, 1984, the following Notice of Violation, dated August 8, 1984 (Notice) was issued:

"B. 10 CFR 50 Appendix A Criterion 2 states in part, 'Structures, systems, and components important to safety shall be designed to withstand the effect of natural phenomena such as earthquakes, tornadoes, hurricanes, floods, tsunami, and seiches without loss of capacity to perform their safety function . . .'

"Specification 13-MM-650, revision 4 dated March 10, 1982, 'Fire Protection Sprinkler and Spray System,' section D.5.7.2 states in part, 'The piping, supports, anchors and restraints for all sprinkler systems located in safety-related areas shall be designed to withstand Seismic Category IX requirements. . .'. Additionally, section DI.4.4 states in part 'Seismic Category IX structures, systems, and components . . . must be designed to retain structural integrity during and after an SSE but do not have to retain operability for protection of the public. The basic requirement is prevention of structural collapse and damage to equipment and structures required for protection of the public safety.'

"Additionally, Specification 13-MM-650 section D.5.7.9 states in part, 'Contractor (Bechtel) shall review all calculations and designs of supports for these (safety-related) areas and make necessary modifications to meet Category IX requirements.'

"Contrary to the above, the calculations submitted by Viking for fire protection system piping (Bechtel Log No. 13-10407) were accepted, on October 20, 1980, but the calculations do not provide an analysis that demonstrate the Fire Protection piping system has been designed to retain structural integrity during an SSE seismic event. The calculations do not demonstrate that longitudinal system and component loads have been considered or reviewed.

"This is a Severity Level IV Violation applicable to Units 1, 2 and 3."

Section B.2. Response to the Notice.

B.2.1 Cause of the Violation.

A BPC Engineering review revealed that the Specification 13-MM-650 did not provide SSE seismic spectra for buildings. This information is necessary in order to perform analyses of the overall fire protection piping system.

Specification 13-MM-650, paragraph 5.7.7 (for safety-related applications) requires the subcontractor to use the criteria in specification attachment D-3 to determine the spacing of pipe supports and the number required, and specifies that pipe support spacings shall not be exceeded for each respective building. The SSE building response spectra were utilized by BPC Engineering to establish the support spacings and loads given in specification attachment D-3. Additionally, specification 13-MM-650 does specify, for safety-related applications, that pipe supports, anchors, and restraints be designed to Seismic Category IX. The definition of Seismic Category IX is included in the specification.

Calculation M-650-200 prepared and submitted by Viking meets the loading and spacing requirements of Specification 13-MM-650, attachment D-3. However, this calculation does not address the overall piping system by analysis to ensure structural integrity during an SSE seismic event.

The violation is considered to be an isolated event, because specification 13-MM-650 is the only specification involving subcontractor installed piping where support criteria is provided to satisfy Seismic Category IX requirements.

B.2.2 Corrective Steps Which Have Been Taken and Results Achieved.

SSE seismic spectra for buildings have been furnished to Viking. Additional analyses are being conducted by Viking to address the adequacy of the overall fire protection piping system to retain structural integrity after an SSE. Testing data for the hanger components will be included in the analyses. The Viking analyses will be reviewed by Bechtel engineering for adequacy.

B.2.3 Corrective Steps Which Will Be Taken to Avoid Further Items on Noncompliance.

A documented training session(s) will be conducted for project engineering personnel regarding calculation review relationship with specification and licensing requirements.

B.2.4 Date When Full Compliance Will Be Achieved.

Completion and review of the additional seismic analyses and supporting calculations will be completed by October 30, 1984.

Training will be completed by September 22, 1984,  
and attendance records will be maintained in the design  
office training record files.

ATTACHMENT C

RESPONSE TO NOTICE OF DEVIATION DATED AUGUST 8, 1984

Section C.1. Deviation.

As a result of the inspection conducted on July 9-13, 1984, the following Notice of Deviation, dated August 8, 1984. (Notice) was issued:

"A. FSAR Table 3.2-1 states in part, with respect to the Fire Protection System, that: 'Supports and hangers for non-safety related systems are designed to Seismic Category I requirements when failure of the equipment of piping could adversely affect a safety-related system.'

"Specification 13-MM-650 revision 4, dated March 10, 1982, section D.5.7.2 states in part: 'the piping, supports, anchors, and restraints for all sprinkler systems located in safety-related areas shall be designed to withstand seismic Category IX requirements.'

"The specification 13-MM-650 requirement to design fire protection piping supports to Seismic Category IX is contrary to the FSAR commitment to design to Seismic Category I requirements. Per the Project Design Criteria Manual Part II Revision 12 dated September 24, 1982, Seismic Category IX design requirements differ in that Category I items are designed to remain functional within the elastic deformation limits whereas Category IX items are designed not to fail (but may deform)."

Section C.2. Explanation Regarding the Deviation.

C.2.1 Specification 13-MM-650 requires that the Fire Protection pipe supports and hangers be designed to Seismic Category IX requirements. The PVNGS requirements are those stated in the Branch Technical Position APCS B 9.5-1 that "postulated fires or fire protection system failures are not considered concurrent with other plant accidents or the most severe natural phenomena." Therefore, the fire

protection system need not be functional after an SSE, however, it should not "damage equipment or structures required for protection of public safety." The Seismic Category IX requirement meets this criteria and, therefore, Engineering considers this acceptable.

Section C.3. Corrective Action to be Taken.

Note "h" of FSAR Table 3.2-1 shall be revised as follows "supports and hangers for non-safety related systems are designed to Seismic Category IX requirements when failure of the equipment or piping could adversely affect a safety-related system."

Section C.4. Date When Full Compliance Will be Achieved.

A SAR Change Notice will be issued to correct the inconsistency by September 15, 1984.

ATTACHMENT D

RESPONSE TO NOTICE OF DEVIATION, DATED AUGUST 8, 1984

Section D.1. Deviation.

As a result of the inspection conducted on July 9-13, 1984, the following Notice of Deviation, dated August 8, 1984 (Notice) was issued:

"B. The Fire Protection Evaluation Report, Amendment 3 dated April 30, 1982, Section III, part C.10 states, in regards to Quality Assurance requirements; 'Audits should be conducted and documented to verify compliance with the fire protection program including design and procurement documents; instructions; procedures and drawings, and inspection and test activities.'

"Contrary to this commitment, no Quality Assurance audits of design and procurement documents, instructions, procedures, and drawings or inspection and test activities for the spray-on fire proofing work (contract 13-AM-126) were conducted."

Section D.2. Explanation Regarding the Deviation.

D.2.1 NRC Branch Technical Position (APCSB 9.5.1-1)

Section C.3 requires that a QA program be developed for Fire Protection which includes verification of the effectiveness of the QA Program "through review, surveillance and audits." This statement recognizes the use of reviews and surveillance, as well as audits, to verify QA Program effectiveness. This commitment has been met at Palo Verde Nuclear Generating Station. Specifically, with respect to spray-on fire proofing work, the effectiveness of the coating is determined by the type of coating and the thickness of the coating. Both the type and thickness of the coating were specified in the

appropriate contract (13-AM-126) and verified to have been accomplished through review, surveillance and audit. Contract 13-AM-126 specifies:

- a. Use of UL tested and approved material.
- b. An overcoat spray of 1/8 inch thick sanded gypsen.
- c. Subcontract verification of coating every 10 square feet.

Although not documented, the subcontractor's monitoring of thickness has been confirmed by periodic Bechtel Subcontract Coordinator probings. Additionally, Bechtel Engineering conducted the Fire Protection Design Documentation Walkdown Program per I.P. 5.26-04, Attachment 8. This walkdown required verification of spray-on protective coatings. Results of the walkdown did not disclose any discrepancies.

The APS Construction Quality Assurance Department performed an audit (C83-10) of the Fire Protection System. The audit was to determine if the Fire Protection System complied with project requirements and was completed January 13, 1984. The audit examined the coating thickness on structural steel at randomly selected points to verify it complied with the specification 13-AM-126. It also verified that the coating requirements for 13-AM-126 complied with U.L. Fire Resistance Directory. No deficiencies were identified.

Therefore, it can be concluded that a Quality Assurance audit has been conducted to verify effectiveness of the Fire Protection Quality Assurance Program. This audit combined with reviews and surveillance verified the effectiveness of the QA Program with respect to spray-on fire proofing.