



Arizona Nuclear Power Project

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U. S. Nuclear Regulatory Commission
Region V
1450 Maria Lane - Suite 210
Walnut Creek, CA 94596-5368

Attention: Mr. D. F. Kirsch, Acting Director
Division of Reactor Safety and Projects

Subject: Final Report, Revision 1 - DER 84-13
A 50.55(e) Reportable Condition Relating to HVAC
Acceptance Criteria
File: 85-019-026; D.4.33.2

Reference: A) Telephone Conversation between P. Johnson and
T. Bradish on March 13, 1984.
B) ANPP-29229, dated April 5, 1984, (Interim Report)
C) ANPP-31454, dated December 12, 1984, (Final Report)

Dear Sir:

Attached for your informatin is Revision 1 to our final written report under 10CFR50.55(e) referenced above. The updated information provided by this revision includes correction of numerical errors in the Condition Description Section and a re-evaluation of the safety implications based upon calculations performed to determine the impact of supports that were not inspected.

Very truly yours,

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

EEVB/PJC/rlm

Attachment

cc: See Page Two

cc: Richard DeYoung, Director
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FINAL REPORT - DER 84-13
DEFICIENCY EVALUATION 50.55(e)
ARIZONA NUCLEAR POWER PROJECT (ANPP)
PVNGS UNITS 1, 2, 3

I. Description of Deficiency

As a result of an investigation by The Waldinger Corporation (TWC), it was discovered that there are two generic problems which preclude the installed HVAC ducts from complying with the Bechtel-established TWC acceptance criteria for seismic conditions as follows:

- A. Insufficient detail on Bechtel design drawings. Examples of these deficiencies are:
- Maximum size of datum plates not specified on Drawing 13-C-00C-011, Detail 4.
 - Extension of duct band ears is shown "as required" with no maximum given (Ref: FCR #20, 756-C).
- B. Incorrect interpretation of the Bechtel design drawings and Field Change Requests (FCR's) by TWC. Examples of these deficiencies are:
- Knee brace angle does not conform to slope as specified on Drawing 13-C-00C-011, Note 5.
 - Misinterpretation of DCN #2 on Drawing 13-C-00C-032 by TWC concerning the installation of longitudinal bracing to work points.

The root cause of this deficiency was failure to provide sufficient detail on engineering drawings and failure during installation to correctly interpret engineering requirements shown on the drawings.

In order to identify individual installed supports which do not comply with seismic acceptance criteria, Bechtel Engineering initiated a walkdown program to inspect "Q" and "R" HVAC supports and potential hazard conditions (Class "S" supports over Class "Q" and "R" systems). The potential hazard condition walkdown is for Units 2 and 3 only since a seismic hazards walkdown for Unit 1 had previously been conducted and FCR's 34, 189-P and 39, 873-P). In addition, the walkdown was limited to existing supports at the time of the inspection and which were physically accessible and not covered by fire-proofing.

Bechtel Engineering developed acceptance criteria and Design Change Packages ISM-HA-030, HD-009, HF-014, HC-040, and HJ-035 were initiated to perform the walkdown inspection in Unit 1. A summary of the results of the Unit 1 walkdown are given below:

No. of supports inspected that meets engineering drawing/criteria requirements	=	2060
No. of supports inspected that do not meet requirements but are acceptable by calculations/analysis (use-as-is)	=	445
No. of supports inspected that did not meet acceptance requirements and were dispositioned as "Rework" and reworked	=	<u>73</u>
Total No. of supports inspected	=	2578 (91%)
Total No. of supports not inspected	=	256 (9%)
Total No. of supports	=	2834 (100%)

As a result of the 256 supports not inspected in Unit 1, it was necessary to determine the impact of those supports on the evaluation. Calculations were consequently generated for fourteen (14) of the seventy-three (73) supports inspected that were dispositioned for rework in Unit 1. The calculations show that those fourteen (14) supports, even if no rework had been performed, meet all design criteria. Based on a statistical analysis performed by the Reliability and Risk Assessment Group, it was concluded that, with a 95 percent statistical level of confidence, greater than 99 percent of the Unit 1 HVAC duct supports including the 256 supports not inspected meet design criteria and therefore are acceptable even if no rework has been performed for the identified 73 supports. (Ref: Calculation 13-CC-ZS-010).

II. Analysis of Safety Implications

The condition described herein does not affect any safety-related HVAC installations and will not prohibit any installation from performing its intended safety function during or after a Safe Shutdown Earthquake.

III. Corrective Action

Deficiencies identified during the Unit 1 walkdown were documented by Nonconformance Reports MA-2303, MC-2304, MG-2305, MR-2306, and MJ-2330.

The comprehensive walkdowns for Units 2 and 3 are currently being accomplished by Design Change Packages 2SM and 3CM-HA-030, HD-009, HF-014, HC-040, and HJ-035. The resulting deficiencies will be analyzed and will be documented and corrected by issuance of Nonconformance Reports. These Nonconformance Reports will cross-reference this DER.

This corrective action plan will be completed prior to Operating License in each unit.

In order to prevent recurrence of this condition, all engineering drawings for HVAC supports have been revised to provide sufficient details to assure proper installation and to prevent misinterpretation by TWC.