Arizona Public Service Company

September 18, 1984
ANPP-30551-TDS/TRB

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 Resident
Reactor Projects and Engineering Programs

Subject: Final Report - DER 84-38
A 50.55(e) Reportable Condition Relating To Improperly Welded Flange In Unit 2.
File: 84-019-026; D.4.33.2

Reference: A) Telephone Conversation between P. Narbut and T. Bradish on May 25, 1984
B) ANPP-29814, dated June 25, 1984 (Interim Report)
C) ANPP-30307, dated August 23, 1984 (Time Extension)

Dear Sir:

Attached is our final written report of the Reportable Deficiency under 10CFR50.55(e), referenced above.

Very truly yours,

EEVanBrunt/TRB

E. E. Van Brunt, Jr.
APS Vice President
Nuclear Production
ANPP Project Director

EEVB/TRB/nj
Attachment

cc: See Page Two

IE-27

cc: Richard DeYoung, Director
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U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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FINAL REPORT - DER 84-38
DEFICIENCY EVALUATION 50.55(e)
ARIZONA PUBLIC SERVICE COMPANY (APS)
PVNGS UNIT 2

I. Description of Deficiency

Pipe support #13-AF-005-H-007, Rev. 1, was installed and accepted in Unit 2 by Field Engineering and Quality Control in November of 1981. The existing documentation required the miscellaneous steel (Item A) to be installed at an evaluation of 85'-0 3/4" and the beam attachment of sway strut (Item 61) to be welded to Item A on the north and south sides (see Figure 1). Documentation was prepared in March of 1984 to partially disassemble this support for piping rework. Upon completion of the piping work and reassembly of the support, two discrepancies in the original installation were noted in NCR PC-8250:

1. The miscellaneous steel (Item A) is installed at elevation 85'-3".

2. The rear bracket (of Item 61) is welded on the east and west sides.

The root causes of the deficiency described herein are (a) the craftsman did not install the pipe support per design drawings and (b) the field engineer and the quality control inspector approved the incorrect installation. A recent investigation revealed that none of the people responsible for this deficiency are presently employed at the PVNGS jobsite.

The results of the inspection conducted in III.B, and the surveillances conducted in accordance with III.E.2 below, did not identify any other similar conditions. Therefore, it has been determined that this is an isolated incident.

II. Analysis of Safety Implications

The change in elevation of miscellaneous steel (Item A) also lengthened the overall dimension from beam bracket to centerline of pipe of sway strut (Item 61) from 2'-8 3/4" to 2'-11". This causes no additional loading or induced stresses in Item A and the existing sway strut length is still within vendor requirements for the design loading condition so the structural integrity of the pipe support is not degraded.

However, with the beam attachment welded on the east and west sides, the bottom flange of Item A will not induce loads to the structural member as intended. This results in exceeding the structural capacity of the bottom flange during a DBE. Once the capacity of the support has been exceeded, piping stresses will reach unacceptable levels. Based upon the above, this condition is evaluated as reportable under the requirements of 10CFR50.55(e); since, if left uncorrected, it would be a significant safety hazard.

This deficiency is evaluated as not reportable under the requirements of 10CFR Part 21, since this piping system had not been released from Bechtel control.

III. Corrective Action

A. NCR PC-8290 will be dispositioned repair to add additional weld on the north and south sides of the beam attachment.

B. As part of the corrective action identified in the response to the NRC Enforcement Letter and Notice of Violations, dated 12/12/83 (Violations II.B.3 and II.B.4), Bechtel Construction initiated a comprehensive reinspection program established under WPP/QCI 543.0. This reinspection program included 2199 pipe suports and pipe racks in Unit 1. All nonconforming conditions noted during the reinspection program were documented on NCRs PX-7370 and PA-7313. The "as-built" calculations indicate that the installed conditions of all welding nonconformances are sufficient to carry the project design loads. Therefore, the installed pipe supports were found to be acceptable without repair.

C. To provide a similar reinspection program for Units 2 and 3, Bechtel Construction has initiated WPP/QCI 555.0 - PCN 1 and WPP/QCI 556.0 - PCN 1. This reinspection program will include 1209 pipe supports per Unit, and will specifically verify all weld locations, sizes, and lengths. Any nonconformance found will cross-reference this DER for reportability disposition.

D. To improve inspection standards in Units 1, 2, and 3, the following training sessions including specialized training by Bechtel's Material and Quality Services (M&QS) on inspection techniques have been conducted with QC and Field Engineering personnel:

1. October 10, 1983 - Instruction of Pipe Support and Welding QCEs by Bechtel M&QS on proper use of fillet weld gauges and on visual weld inspection criteria.

2. October 17, 1983 - Instruction of Pipe Support and Welding QCEs and Welding FEs by Bechtel M&QS on proper use of M&QS weld gauge for skewed fillet welds.

3. December 7, 1983 - Reinstruction of Pipe Support and Welding QCEs by PFQCE on weld reinspection acceptance criteria.

4. December 14, 1983 - Reinstruction of Pipe Support and Welding QCEs by Lead Welding QCE on pipe support accept/reject criteria.

E. To preclude recurrence of identified conditions and improve and direct the Quality Assurance activity relative to the installation and QC acceptance of pipe supports and other key construction activities, the following Quality Assurance program improvements are being implemented.

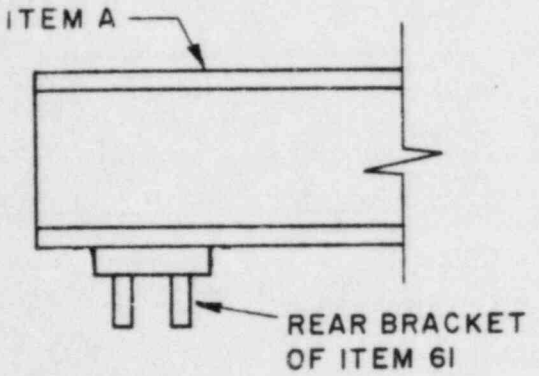
1. A Corrective Action Reverification Program has been established by Bechtel Jobsite QA. The purpose of this program is to reverify the effectiveness of previous corrective actions taken for selected quality problems which:

   a. Were serious enough to have been reported to the NRC (DERs).

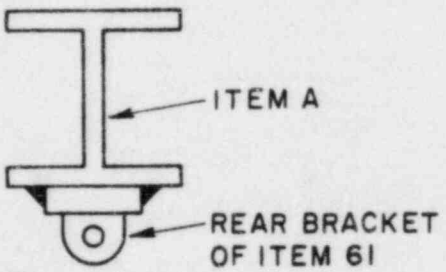
   b. Have a history of recurrence (trends/audit/surveillance CARs).

   c. May be generic (Bechtel Power Division's CIDS computer program).

2. The Field QA Surveillance Program has been upgraded to include a selective sampling of QC-accepted installations on a monthly basis to continually assess effectiveness of the inspection program in vital areas of pipe supports.



PARTIAL SECTION LOOKING WEST
DESIGN CONDITION



SECTION LOOKING NORTH
INSTALLED CONDITION

FIGURE 1