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MURRAY R. EDELMAN
VICE PRESIDENT
NUCLEAR

January 30, 1984

Mr. James G. Keppler
Regional Administrator, Region III
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

RE: Perry Nuclear Power Plant
Docket Nos. 50-440; 50-441
Pipe Support Shop Welds Supplied
by Power Piping Co. [RDC 83(83)]

Dear Mr. Keppler:

This letter serves as the final report pursuant to 10CFR50.55(e) concerning shop welds on some safety-related pipe supports supplied by Power Piping Company, Pittsburgh, Pennsylvania, for installation at Perry Nuclear Power Plant. This item was originally identified to Mr. P. Pelke of your office on September 21, 1983, by Mr. E. Riley of The Cleveland Electric Illuminating Company (CEI). Our interim report on this subject was submitted on October 18, 1983.

This report contains a description of the deficiency, an analysis of safety implication, and the corrective action taken and evaluation completed.

Description of Deficiency

During fabrication of safety-related pipe supports for installation at Perry Nuclear Power Plant (PNPP), Power Piping Company (PPCo) utilizes Gilbert Associates, Incorporated (GAI) pipe support design drawings to initiate PPCo fabrication drawings which are approved by the GAI Engineer and used for the shop fabrication of supports.

Where the GAI Engineer requires a full penetration weld, on his drawings he uses the weld symbol specified by AWS 2.4, i.e., an undimensioned groove weld symbol. This symbol was correctly transferred to the PPCo drawings. PPCo's standard shop practice was to interpret the symbol shown as a partial penetration weld unless a specific note requiring full penetration was provided. As a result, 132 supports requiring one or more full penetration welds were fabricated for PNPP with only partial penetration welds. Of the 104 shipped to PNPP, sixty-two (62) of these supports had been installed in the field and 42 were awaiting installation. A total of 28 supports in question remained in Power Piping's shop. Please note, these numbers have been corrected from the interim report.

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Corrective Action and Evaluation Completed

Our Design Engineer Gilbert Associates has completed their review of the pipe support designs for the 132 affected supports. The Engineer's review included an evaluation of each support assuming partial penetration welds where full penetration welds were intended. Thirty (30) of the 132 supports require rework or repair for the following reasons:

1) Sixteen (16) of the supports were not acceptable due to violation of the minimum effective throat (te) thickness requirements of ASME Section III, subsection NA, Appendix XVII, Para. XVII 2454. In none of these instances was the weld allowable stress violated. These 16 supports will be repaired to meet ASME requirements.

2) Fourteen (14) of the supports were not acceptable in the as-welded condition because loads could, under certain conditions, result in weld stresses in excess of code allowables. In some cases, postulated loads would result in failure of the supports. These 14 supports will be repaired as directed by the Engineer. Even though the repair will not require full penetration welds, these repaired supports will meet their intended design and code allowables.

The remaining 102 supports have been designated acceptable as-is and require no rework. The welds were found to meet all Code design requirements in the as-welded condition.

Site Nonconformance Report (NR) NDS-024 has been dispositioned to direct rework or repairs as applicable. Supports not yet shipped have been identified on GAI Corrective Action Request (CAR) 17 and Deviation Requests (DR) Nos. 79 and 80. These have been dispositioned as acceptable.

Analysis of Safety Implications

Based on the results of the Engineer's evaluation, the supports described in Item 1 above would not be subject to failure as the allowable stress specified by the Code was not exceeded.

Failure of the supports described in Item 2 of "Corrective Action and Evaluation Completed" above could result in local overstress of piping where adjacent supports are not capable of compensating for the failed support. For purposes of analysis, it was assumed that support failure resulted in failure of the piping. Although the probability of such a failure is very low, it served as a bounding condition. In each case, analysis has determined that postulated failure would not affect our ability to bring the plant to a safe shutdown condition and would not present any hazard to public health or safety. The individual analyses are available for review at PNPP.

It is anticipated that all repair and rework concerning this matter will be completed by June 30, 1984.

Please call if you have any questions.

Sincerely,

Murray R. Edelman

Murray R. Edelman
Vice President
Nuclear Group

MRE:pab

cc: Mr. M. L. Gildner
NRC Site Office

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