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Dalwyn R. Davidson
VICE PRESIDENT
SYSTEM ENGINEERING AND CONSTRUCTION

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June 29, 1981



Mr. James G. Keppler
Director of 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
Interim Report on Socket Weld
Fit-Ups for Safety Class CRD
Piping
[RDC 29(81)]

Dear Mr. Keppler:

This letter serves as an interim report as required by 10CFR50.55(e) concerning piping socket welds of the Control Rod Drive System for Unit 1. This was first reported by W. J. Kacer of The Cleveland Electric Illuminating Company to L. McGregor of your office on June 3, 1981.

This report includes a description of the deficiency, an analysis of the safety implication, and the corrective action to be taken.

Description of Deficiency:

Perry Site Quality Control Inspection identified that a significant number (approximately 50%) of socket welds for the control rod drive piping spool pieces, shipped to the Perry Site, do not have an axial gap between the inserted pipe end and the bottom of the mating fitting in the as-welded condition. Figure NC-3673-2(b)-3 Sketch F and Figure NC-4427-1 of ASME Section III, 1974 Edition through Winter 1975 Addenda, specify that for Class II socket welds, an approximate 1/16 inch gap before welding shall be left between the end of the pipe being inserted and the bottom of the mating fitting.

Of the total number (350 pieces) for the Unit I Control Rod Drive System, 184 pieces exhibit no axial gap in the as-welded condition.

This material was furnished under our Pullman Power Products' contract (SP-527) for the fabrication and delivery of safety class piping. Piping sizes in question include 1 inch and 1½ inch diameters.

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Analysis of the Safety Implications:

As a result of this condition, there is no assurance that a stress load is not imposed across the weld due to shrinkage of the molten puddle during cooling. The resultant residual stresses may reduce the ultimate strength of the welded joint by an indeterminate amount. This condition could also reduce the fatigue and thermal fatigue resistance of the welded joint.

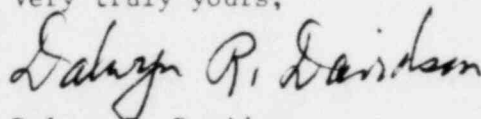
Corrective Action Taken To Date:

A "Corrective Action Request" (GAI CAR-14) was issued to Pullman Power Products to document the fact that a significant number (184 pieces) of socket welds on the control rod drive spool pieces shipped to the Perry Site do not have an axial gap as described in the "Description of Deficiency" section of this report. No further shipments shall be made from Pullman Power Products' shop until the response to CAR-14 is received and evaluated for acceptability. Additionally, Nonconformance Report CQC 2244 has been written at the Perry Construction Site to identify nonconforming material received to date.

The PNPP Project Organization has performed sample fit-up tests which exhibit an approximate 1/16 inch gap between pipe and the mating fitting. Evaluation of these tests indicates that with an approximate 1/16 inch gap prior to welding, the socket welds will still have a gap at the root following standard welding practices.

At the present time, CEI along with our architect engineer (Gilbert Associates) is performing an extensive analysis to determine the significance of this problem. This evaluation should be completed by September 1, 1981, and a final report will then be submitted.

Very truly yours,



Dalwyn R. Davidson
Vice President
System Engineering and Construction

DRD:pab

cc: Mr. J. Hughes - NRC Site

Mr. Victor Stello, Director
Office of Inspection & Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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