



# Duquesne Light

435 Sixth Avenue  
Pittsburgh, Pennsylvania  
15215

United States Nuclear Regulatory Commission  
Region I  
631 Park Avenue  
King of Prussia, PA 19406

FEB 5 1982

(412) 456-6000

2DLC 4468

ATTENTION: Mr. R. Haynes, Administrator

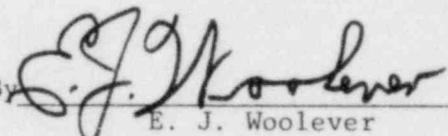
SUBJECT: BEAVER VALLEY POWER STATION - UNIT NO. 2  
Docket No. 50-412  
Pipe Support Beam Attachment  
Significant Deficiency 81-03 - Final Report

Gentlemen:

This letter is the final report concerning Significant Deficiency 81-03.

In our December 4, 1981, letter to you on this subject, we indicated that an interim report would be submitted by February 5, 1982. The evaluation of the beam attachments has gone more quickly than expected and the final report addressing the entire scope of the significant deficiency and its resolution is herewith submitted. This deficiency is, therefore, considered to be closed and no further reports are planned for submittal. If you have any questions on this matter, please contact our staff.

DUQUESNE LIGHT COMPANY

By   
E. J. Woolever  
Vice President

Attachment

cc: Mr. R. DeYoung  
Director of Inspection and Enforcement

Document Control Desk  
Nuclear Regulatory Commission

Ms. Jane Grant  
Licensing

Mr. G. Walton  
NRC Resident Inspector



FINAL REPORT  
ON  
WELDED TYPE BEAM ATTACHMENTS AT  
BEAVER VALLEY POWER STATION - UNIT NO. 2

1.0 SUMMARY

Power Piping Company (PPCO), BVPS-2 pipe support vendor, has supplied HS-142 welded type beam attachments for rigid sway strut sizes 25, 40, 50, 60, and 80 which when loaded at application angles other than vertical, have reduced load ratings which were not originally indicated.

All of the pipe supports using the HS-142 beam attachments were evaluated. Of the 811 supports, most were eliminated as objects of concern because they were not of the affected size categories or they were loaded vertically. Of the remaining 23, one overloaded strut was redesigned for other reasons and the others were found to be loaded within acceptable limits.

2.0 IMMEDIATE ACTION TAKEN

After PPCO indicated that a problem could exist, the NRC was notified and an investigation was undertaken to identify the involved pipe supports and evaluate their loading.

3.0 DEFICIENCY

PPCO's original design calculations for the HS-142 beam attachment consider the direction of loading in a vertical orientation only. However, the beam attachments were used at various angles of application as permitted by the PPCO catalog data. PPCO has determined that the allowable beam attachment load rating at various angles is less than the full rated loads indicated by the catalog and the original calculations. Specifically, PPCO has determined that the weld between the baseplate and pin plates of the beam attachment is the cause of the deficiency. This weld may fail when the beam attachment angle of application is other than vertical and the applied axial load on the strut assembly exceeds the derated load for the particular angle of application.

4.0 ANALYSIS OF SAFETY IMPLICATIONS

Had this design deficiency not been discovered, some pipe hangers could have been inadvertently overloaded resulting in pipe failure. However, all affected supports were found to be loaded to values less than the reduced load ratings.

5.0 CORRECTIVE ACTION TAKEN TO REMEDY THE DEFICIENCY

PPCO performed an analysis to determine the reduced load ratings of HS-142 beam attachments. This analysis was reviewed and determined to be acceptable. The HS-142 beam attachments were reviewed to determine which supports should be evaluated in the light of the reduced load ratings. This evaluation determined that in all cases the actual loads are less than the reduced load ratings. Additionally, PPCO no longer sells the HS-142. This model has been replaced by the HS-146.

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