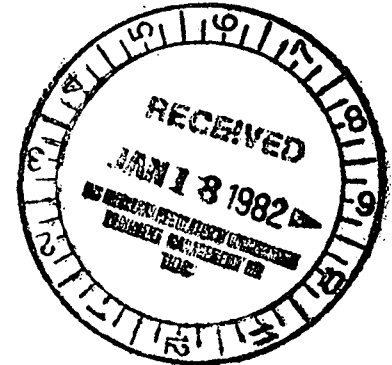




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January 8, 1982

Paul O'Connor, Project Manager
Operating Reactors
U.S. Nuclear Regulatory Commission
Washington D.C. 20555



Subject: SEP Topic III-6, Seismic Considerations
Dresden Unit 2

NRC Docket 50-237

In response to SSRT concern regarding the remote-operated valves on small piping, a study has been performed on various small piping subsystems containing large valves with centers of gravity off the centerline of the pipe to determine the impact of modeling the valve's C.G. on pipe stresses.

All remote-operated valves in safety related lines below 4" in line size, were identified in the P&ID's. All accessible valves were field checked to determine the actual field geometry. A total of nine piping subsystems (small lines) that include twelve valves were accessible during the survey. Out of the nine subsystems, three subsystems which include four valves were considered by engineering judgment to be the worse cases.

Based on field sketches, a computer analysis of each valve and its associated piping was performed. Each valve was represented by three elements in a triangular shape with a node located at each end of the valve and at the valves estimated center of gravity. Piping adjacent to each valve was considered up to the nearest anchors or to where sufficient piping supports would reflect results had the entire system been included. Piping remote from the valves would not experience valves induced pipe stresses.

Weight and seismic loadings were considered for each valve. Valve weights were conservatively estimated to be 120 lbs.

A response spectra method was used to determine stresses due to a seismic event. The response spectrum were chosen from the original Blume Report - Dresden Seismic Analysis Combined Reactor and Turbine Buildings (1969), based on valve's location with respect to the buildings. A maximum of 20 modes of vibration were considered, X, Y and Z excitation responses were combined by the maximum of (X + Y) and direction (original criterion). Service Level C earthquake response was assumed two times the Service Level B earthquake response.

Stresses for the cases considered varied based on pipe routing, pipe support configuration, the valve orientation and building response spectrum. Anchors, fittings and valves were considered as socket welded connections with a stress intensification factor of 1.3 (ANSI B31.1-1967).

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The results of the analyses using the original design value indicate that the piping stresses were found to be significantly below the code allowables at the location of three of the valves and marginally with the code allowables at the location of the fourth valve. However, if Edison were to use the new SEP seismic input values considerable more margin could have been shown.

Please address any questions you may have concerning this matter to this office.

One (1) signed original the thirty-nine (39) copies of this transmittal have been provided for your use.

Very truly yours,



T.J. Rausch
Nuclear Licensing
Administrator
Boiling Water Reactors

NPS/kg
0531a

cc: RIII Resident Inspector, Dresden