

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

August 31, 1979

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Serial No. 700
PSE&C/GLS:jjp/mc
Docket No. 50-281
License No. DPR-37

Dear Mr. Denton:

REANALYSIS OF PIPING SYSTEMS
SURRY POWER STATION UNIT 2

On August 14, 1979, members of the Nuclear Regulatory Commission staff, Ebasco Services, Inc., and Vepco met in Bethesda, Maryland to discuss the pipe stress reanalysis effort at Surry Power Station Unit 2. The staff was particularly interested in any assumptions or criteria which differ from that committed to on Unit 1. The purpose of this letter is to document any such differences.

Ebasco has reviewed the pertinent correspondence regarding the commitments made by Vepco to the NRC with respect to the Reanalysis of Piping Systems, Surry Power Station Unit 2, Docket No. 50-281 under the Order to Show Cause of March 13, 1979. Within their scope of work on Unit 2, Ebasco will meet all previous commitments with the following three exceptions:

1. Ref: Letter Serial No. 458, June 8, 1979, W. C. Spencer to H. R. Denton.

Ebasco is not postulating break points for any analyses within their scope of work. Only the main steam lines outside containment require seismic reanalysis and are subject to the requirements of Appendix D to the Surry Units 1 and 2 FSAR, "Effects of Pipe Breaks Outside Containment." This line is not within the Ebasco scope.

2. Ref: Ibid., Attachment II.

Ebasco is not following the decision matrix set forth by the referenced attachment. At this time we intend to complete any necessary modifications prior to Surry Unit 2 start-up.

3. Ref: "Revised Report on the Reanalysis of Safety Related Piping Systems, Surry Power Station Unit 1," transmittal letter Serial No. 453A, August 1, 1979, W. C. Spencer to H. R. Denton.

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Branch lines are evaluated to assure that sufficient flexibility exists between the run pipe and the first few restraints on the branch piping. The flexibility of the branch pipe will be evaluated separately in each of the three translational coordinates and must be sufficient to prevent overstresses at the branch/run pipe interface due to thermal and seismic displacements imposed on the branch pipe. This procedure is intended to provide a secondary stress check based on run pipe displacements resulting from the current analysis.

The analysis of branch lines is performed using NUPIPE considering seismic anchor movement and thermal expansion. The thermal analysis considers thermal displacements of the run pipe at the branch/run pipe interface and the operating temperature conditions of the branch line. The seismic anchor movement analysis is performed by applying seismic inertia displacements to the branch at the interface. The applicable Stress Intensification Factor at the branch connection is included in the analysis. The stresses from both analyses are combined by absolute sum and compared to the B31.1 code allowable, S_A .

The aforementioned constitutes what we believe to be the salient differences between the reanalysis procedure being used by Ebasco on Surry Unit 2 and that used on Unit 1. Should you require any additional information, please contact us.

Very truly yours,



W. C. Spencer
Vice President - Power Station
Engineering & Construction Services