

May 3, 1988

Docket No. 50-412

Mr. J. D. Sieber, Vice President
Duquesne Light Company
Nuclear Group
Post Office Box 4
Shippingport, PA 15077

Dear Mr. Sieber:

SUBJECT: BEAVER VALLEY UNIT 2 - DIFFERENTIAL SETTLEMENT OF BURIED PIPES
(TAC 62885)

Your letter dated October 26, 1987 provided a response to our Request for Additional Information (RAI) dated June 2, 1987. However, that response was not complete. The enclosed RAI describes our information need to complete this action.

Please respond within 60 days of receipt of this letter.

The reporting and/or recordkeeping requirements contained in this letter affect fewer than ten respondents; therefore, OMB clearance is not required under P.L. 96-511.

Sincerely,

original signed by

Peter S. Tam, Project Manager
Project Directorate I-4
Division of Reactor Projects I/II

Enclosure: As stated

cc w/enclosure: See next page

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Mr. J. Sieber
Duquesne Light Company

cc:

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Beaver Valley Power Station
Units 1 & 2

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Post Office Box 3321
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BEAVER VALLEY POWER STATION UNIT NO. 2

REQUEST FOR ADDITIONAL INFORMATION

REFERENCES:

1. Letter dated October 23, 1986 from J. J. Carey, Duquesne Light Co. (DLC), to H.R. Denton, NRC, Subject: Beaver Valley Power Station Unit 2 Response to SER Confirmatory item 2
2. Letter dated March 9, 1987 from J.J. Carey, DLC, to NRC, Subject: Beaver Valley Power Station Unit No. 2 Response to SER Confirmatory Item 2.
3. Letter dated June 2, 1987 from P. S. Tam, NRC, to J. J. Carey, DLC, Subject: Beaver Valley Unit 2 Effects of Differential Settlement against buried pipes.
4. Letter dated October 26, 1987 from J.J. Carey, DLC, to NRC, Subject cited above

The licensee has compared the calculated pipe stresses with the allowable pipe stresses at three different locations. At the first location between the intake structure and the valve pit, the computed differential settlement at the most critical section of the pipeline is 5.7 in. in a pipe length of 30 ft. (Ref. 4). The maximum calculated pipe stress due to this differential settlement is 49548 psi against the allowable stress of 52,500 psi. While the computed pipe stress at the first location is only about 5 percent less than the allowable stress, the computed pipe stresses at the second and third locations (i.e. near the Safeguards building and Auxiliary building) are approximately 60 percent and 90 percent less than the allowable stresses respectively. Thus there is very little margin of safety at the first location, while there is ample margin at the other two locations.

In view of the fact that the computed pipe stress of 49548 psi at the first location is very close to the allowable pipe stress of 52,500 psi, it is necessary to critically examine the pipe design criteria and the actual calculation of both the differential settlement and the pipe stresses, even though the staff has generally approved the analysis procedures outlined in the FSAR.

- a) Provide a summary of the detailed calculations along with a summary of the soil data to substantiate the differential settlement of 5.7 inches at the most critical section of the Service Water System (SWS) pipes running north from the valve pit to the intake structure shown in Reference 4.
- b) Is the dynamic seismically induced settlement (including the effects of wave travel and wave reflection) considered in determining the maximum differential settlement of buried pipes? If so, provide the magnitudes of both static and dynamic settlements due to different loadings separately.