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December 13, 1999
L-99-183

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

**Subject: Beaver Valley Power Station, Unit No. 1 and No. 2
BV-1 Docket No. 50-334, License No. DPR-66
BV-2 Docket No. 50-412, License No. NPF-73
Response to the Request for Additional Information Regarding the
Response to Generic Letter 96-06: "Assurance of Equipment Operability
and Containment Integrity During Design-Basis Accident Conditions"**

The purpose of this letter is to provide a response to the Request for Additional Information regarding the response to Generic Letter 96-06: "Assurance of Equipment Operability and Containment Integrity During Design-Basis Accident Conditions."

On July 28, 1999, a conference call was conducted between members of the NRC staff and BVPS to discuss the additional information provided in our previous submittals on this subject (Ref. L-99-009 dated February 2, 1999, and L-99-090 dated June 2, 1999). The NRC staff has identified one area where additional information is needed in order for the staff to complete the review of the BVPS response to GL 96-06. The required information regarding the BVPS review of thermal overpressure protection for BVPS Unit 2 containment penetrations was detailed in the Request for Additional Information received from the staff on October 14, 1999. Although the question was specific to the BVPS Unit 2 response, it is also applicable to BVPS Unit 1. Therefore, the response to the question is in the context of both BVPS Unit 1 and BVPS Unit 2.

Attached is the BVPS response to the Request for Additional Information identified in the NRC's letter dated October 8, 1999.

If there are any questions concerning this matter, please contact Mr. Mark S. Ackerman, Manager, Licensing at 412-393-5203.

Sincerely,


Lew W. Myers

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c: Mr. D. S. Collins, Project Manager
Mr. D. M. Kern, Sr. Resident Inspector
Mr. H. J. Miller, NRC Region I Administrator

Duquesne Light Company
Beaver Valley Power Station Units 1 and 2
Response to the Request for Additional Information Regarding the
Response to Generic Letter 96-06: "Assurance of Equipment Operability and
Containment Integrity During Design-Basis Accident Conditions"

Question:

The Nuclear Regulatory Commission staff has been reviewing DLC's letter dated June 2, 1999, which submitted the executive summary from the Beaver Valley Power Station, Unit No. 2 (BVPS-2), Containment Penetrations Overpressure Protection Analysis. Section 4.4 of the report discusses penetrations associated with the reactor vessel level instrumentation system (RVLIS). This discussion notes that, in the event of a loss-of-coolant accident (LOCA), the six penetrations associated with the RVLIS will be protected from overpressurization of the tubing and hydraulic isolator located outside containment by failure of the high volume sensor bellows. The staff notes that, while such a bellows failure may protect the penetration from overpressurization, it would likely result in the RVLIS being inoperable. Please provide detailed information regarding how inoperability of the RVLIS following a design basis LOCA is accounted for in the BVPS-2 licensing basis and emergency operating procedures.

Response:

The Overpressure Protection Report has addressed the overpressure protection issue for RVLIS in a non-mechanistic fashion, and was not intended to represent an expected or design basis case impacting RVLIS operability. The statements in the report were intended to indicate that the system design was such that failure of the penetration could not occur under any conditions.

The design of RVLIS is such that the pressure across the high volume sensor bellows is normally balanced; i.e., the RCS pressure imposed on the sensor bellows governs the internal pressure in the water-solid RVLIS tubing. The bellows can accommodate, without failure, the expansion of the trapped volume of fluid associated with the highest expected post-accident temperature increase as long as the fluid remains single phase; i.e., pressure in the trapped volume is above saturation conditions. The most limiting containment conditions which could cause the expansion of the trapped fluid could result from either a LOCA or a Main Steam Line Break (MSLB). In the case of either a MSLB or a LOCA, the RCS pressure (and therefore the pressure in the instrument tubing) will remain above the saturation pressure for containment temperature conditions. RCS pressure during a MSLB does not drop substantially from normal RCS operating pressure. During a Large LOCA, RCS pressure will drop to containment total pressure, which is always above saturation pressure due to the presence of non-condensable gases. Therefore, pressure in the trapped volume will remain above saturation and the bellows will accommodate fluid expansion without failure.

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It is likely that even with a bellows rupture, RVLIS would continue to provide useful indication to the operators. RVLIS operation is dependent on measurement of pressure at various points in the RCS. While no specific failure effects analysis has been completed for a bellows rupture, this type failure is not likely to prevent a pressure signal from being available to the system.

On this basis, common mode failure of RVLIS during design basis accidents does not need to be accounted for in the licensing basis documents or EOPs. The system is designed with adequate redundancy to address isolated single failures.