



Docket No. 50-346

License No. NPF-3

Serial No. 598

March 14, 1980

Director of Nuclear Reactor Regulation  
United States Nuclear Regulatory Commission  
Washington, D. C. 20555

Attention: Mr. Robert W. Reid, Chief  
Operating Reactors Branch No. 4  
Division of Operating Reactors

Dear Mr. Reid:

This letter is a followup to Toledo Edison's letter dated January 18, 1980 (Serial No. 577), which responded to your letter dated November 19, 1979, requesting additional information on the containment purge and vent systems used at Davis-Besse Unit No. 1. That response discussed how the Davis-Besse purge and vent systems meet the requirements of the BTP CSB 6-4. Paragraph B.5.b required an analysis be performed to demonstrate the acceptability of the provisions made to protect structures and safety-related equipment located beyond the purge system isolation valves against loss of function from the environment created by the postulated loss of coolant accident (LOCA). As this analysis could not be completed within the required response time, Toledo Edison committed to have the results submitted to you on or before March 15, 1980. The results of this analysis is as follows.

There are two containment penetrations for the purge system. The purge supply penetration is located in Room 601 of the auxiliary building and the purge exhaust is located in Room 427.

Room 427 was analyzed for environmental effects associated with blowdown through the penetration (from the containment), caused by a LOCA occurring when the purge valves were open.

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The fans, filters and ductwork located downstream of the isolation valves are not safety related and are not seismic Category I. In order to maximize the blowdown into Room 427, our analysis conservatively assumed a collapse of the ductwork beyond the containment isolation valve. It was also assumed that the valve inside containment failed to close upon receipt of the isolation signal. The resulting environment in Room 427 was calculated to be less severe than the peak values calculated for the 6 inch steam line break analyzed in FSAR Section 3.6.2.7.1.3 and shown in FSAR Table 3-6aa.

The 6 inch steam line break results in a peak pressure of 2.0 psig at 1.0 seconds and a peak temperature of 209F. The environmental conditions caused by the LOCA induced blowdown are enveloped by the previously analyzed 6 inch steam line break, therefore no further action is required.

No calculation has been made for Room 601. This room has been analyzed for environmental effects associated with the double ended rupture of the 36 inch main steam line as discussed in FSAR Section 3.6.2.7.1.2. This break results in a peak pressure of 5.3 psig at 2.03 seconds and a peak temperature of 354°F as shown in FSAR Table 3-6 aa. In addition, the free volume of Room 601 is 69,326 ft.<sup>3</sup> compared to a free volume of 19,450 ft.<sup>3</sup> for Room 427. Since the purge system blowdown model is the same for both Rooms 601 and 427, the resulting environment in Room 601 due to LOCA induced blowdown through the purge penetration will be less severe than that resulting from the previously analyzed 36 inch steam line break. On this basis, no further action is required.

Yours very truly,



R. P. Crouse  
Vice President  
Nuclear

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