TOLEDO EDISON

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Director of Nuclear Reactor Regulation
Attention: Mr. John F. Stolz
Operating Reactor Branch No. 4
Division of Operating Reactors
United States Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Stolz:

Toledo Edison submitted an evaluation of asymmetric LOCA loads in a submittal dated July 14, 1980 (Serial No. 628). The evaluation included a discussion of the unbroken primary system in Section 11.4 of the generic report BAW-1621, "Effects of Asymmetric LOCA Loadings -- Phase II Analysis" for the Davis-Besse Nuclear Power Station Unit No. 1.

The unbroken primary piping evaluation indicated an overstressed condition of 68 percent above code allowables. The conservatisms used and simplistic analytical approach were referenced to justify acceptability of the overstressed condition. Per conversations with the NRC Project Manager (Al DeAgazio) we understand more information has been requested by the NRC reviewers to justify our findings. The purpose of this letter is to provide additional information.

The conservative assumptions previously used included a 2.0A break opening and an application of the broken loop pump cavity pressure loadings to the unbroken loop pump. The cavity pressure loads for a 2.0A break opening were conservatively determined by scaling up the loads from a 1.0A break opening. Upon re-evaluation of the realistic pipe movement constraints it can be demonstrated that reduced break opening areas result when the lower cold leg loss-of-coolant accident restraint is considered. The computed break areas are 0.2A and 0.3A for the pump suction and once through steam generator (OTSG) outlet breaks, respectively.

Although there is not a strictly linear relationship between the asymmetric cavity pressure (ACP) and the break opening areas (BOA), a conservative ratio can be determined by scaling down the given ACPs due to a 1A break. This same conservative ratio can then be used to scale down the input forcing functions due to ACP. Then, assume the same dynamic amplification would occur in the analysis with the reduced forcing functions as occurred in the previous analysis. The ratio can then be applied directly to the moments acting at the upper cold leg overstress locations.

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Using the above logic, the conclusion is that the moments acting on the upper cold leg would probably be reduced by a factor of four from the previous LOCA analysis. Using a conservative approach, we can conclude the previous analysis can be reduced by a factor of three (1/3X) with a large amount of confidence. Since the overstress condition in the upper cold leg amounts to 68 percent over allowable, a factor of three reduction would more than satisfy the code allowable values. The calculations represent an engineering assessment without rigorous analysis being employed. Basic assumptions include: (1) the lower cold leg restraint is rigid and (2) the OTSG skirt offers rigid pipe constraint after the outlet nozzle break. Based on B&W experience from the Consumers Power Company, Midland pipe whip analysis, the difference between the actual and assumed restraint stiffnesses will not significantly impact the results obtained above.

Very truly yours,

RPC:LDY:lah

cc: DB-1 NRC Resident Inspector