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 50-388 Susquehanna Steam Electric Station, Unit 2, Pennsylv 05000388

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 AUTHOR AFFILIATION: Pennsylvania Power & Light Co.  
 RECIPIENT AFFILIATION: Project Directorate I-2

SUBJECT: Requests that leak-before-break submittal be reviewed as exemption from requirements of GDC 4.

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# Pennsylvania Power & Light Company

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APR 17 1989

Director of Nuclear Reactor Regulation  
Attention: Dr. Walter R. Butler  
Project Directorate I-2  
Division of Reactor Projects  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

SUSQUEHANNA STEAM ELECTRIC STATION  
POSTULATED PIPE RUPTURES  
PLA-3181                      FILES R-26, R41-2

Docket Nos. 50-387  
and 50-388

Dear Dr. Butler:

At the meeting on March 14, 1989 in our Allentown offices our personnel discussed the current status of efforts to resolve issues associated with postulated pipe ruptures in the Susquehanna SES Reactor Recirculation System. We indicated in this meeting that we have contracted with General Electric to define a more realistic jet model. This approach was suggested by your Mechanical Engineering Branch staff to be pursued pending direction on our leak-before-break submittal for issue resolution (letter PLA-2744 dated October 17, 1986).

Several approaches to creating a more realistic jet model have been developed with the preliminary results being major reductions in jet forces emanating from a postulated break in the Reactor Recirculation suction nozzle (N-1 nozzle). Calculated jet pressures are in the range of 15.5 psi at the assumed target of the MSIV's which is the closest safety related component to the postulated break location. Such jet pressures appear to be within the structural capabilities of the MSIV's, however, total qualification cannot be demonstrated without additional expense and potential modifications. In addition, there are other components which potentially would be impacted by the postulated jet forces whose qualification at this time is indeterminate. Also the jet model needs to be expanded to include other recirculation nozzles (N-2 nozzle).

We will be continuing with our efforts to model the jet forces with emphasis on assuring the MSIV's are qualified for predicted loads. In parallel, we ask that our leak-before-break submittal be reviewed as a specific exemption from the requirements of General Design Criterion 4 which is limited to specific

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break locations. Our intention for performing a leak-before-break analysis was limited to demonstrating low probability of a double ended guillotine break in the specific locations and to avoid attempting jet impingement modifications in the vicinity of the MSIV's.

Please contact us should you require additional information.

Very truly yours,



H. W. Keiser

cc: NRC Document Control Desk (original)  
NRC Region I  
Mr. F. I. Young, NRC Sr. Resident Inspector-SSES  
Mr. M.C. Thadani, NRC Project Manager



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