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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

May 20, 1981

Dr. H. Chau, Chairman  
Mark II Owners Group  
Long Island Lighting Company  
175 E. Old Country Road  
Hicksville, New York 11801

Dear Dr. Chau:

Two questions were raised by the ACRS at the April 28, 29, 1981 Fluid Dynamics Subcommittee meeting. These questions are enclosed.

We are asking that you provide the staff with your response within 30 days of receipt of this letter in order that we may respond to the ACRS. Contact Clifford Anderson, (301) 492-9424 should you have any questions about this request.

Sincerely,

A handwritten signature in cursive script, appearing to read "Karl Kniel".

Karl Kniel, Chief  
Generic Issues Branch  
Division of Safety Technology

Enclosure:  
Questions



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Enclosure

ACRS INFORMATION REQUEST  
MARK II POOL DYNAMIC LOADS

The ACRS questions relate to potential pool by-pass from stuck open wetwell-to-drywell vacuum breakers and by-pass thru ruptured main vent downcomers.

1. The Mark II containment wetwell/drywell vacuum breakers may be called upon to function repeatedly during intermittent steam condensation phenomena. Failure of a vacuum breaker to close during this time could result in pool bypass, thus jeopardizing the integrity of the containment. Provide valve service information for the range of wetwell/drywell vacuum breaker operation under pool dynamic loading. This information should be sufficient to describe the opening and closing characteristics of these valves during intermittent steam condensation.
2. The steam chugging loads proposed as design loads by the Mark II Owner's Group for containment evaluation were developed to represent limiting conditions during a postulated loss-of-coolant accident. As such, they are applied one time to the downcomers. The Mark II Owner's have indicated that chugging induced fatigue loads are insignificant due to the large reduction in loads with time and the relatively low number of fatigue cycles. Additional information is needed to evaluate this position. Provide the following information for a typical plant. For a range of break sizes, estimate the number of "Pool Chug" cycles. This analysis should be extended sufficiently in time to include operation of the emergency core cooling system and the associated vessel steaming rates. If there exists a vent flow threshold below which the chugging loads are insignificant, this should be clearly identified in the analysis. The information should be provided for both the chugging downcomer lateral loads and the pool chugging loads.