

NOV 18 1976

Docket Nos. 50-438  
and 50-439

APPLICANT: Virginia Electric and Power Company

FACILITY: North Anna Power Station, Units 1 and 2

SUBJECT: SUMMARY OF NOVEMBER 11, 1976 MEETING WITH VEPCO AND WESTINGHOUSE TO DISCUSS LOADING ON REACTOR INTERNAL COMPONENTS DURING A LOCA

We met with representatives of VEPCO and Westinghouse Electric Corporation to discuss loads on the North Anna Power Station, Units 1 and 2 reactor internal components during a LOCA. A list of attendees is presented in Enclosure No 1.

Westinghouse gave a presentation of their development of a feeling for the margin present between forces necessary to cause fuel spacer grid crushing and the forces present during a LOCA. Significant points discussed are summarized below:

- (1) There was some ambiguity in the past as to the amount of margin that existed in Westinghouse's Phase III C conservative calculation; 144 in<sup>2</sup>, 1 msec, and .20g ground acceleration. The NRC staff and Westinghouse narrowed down differences and final values ranged between 1.08 and 1.03 depending on what cold to hot correction factor is used. The original NRC staff conclusion that the margin is too small for a buckling type failure mode is still valid. But this conclusion is based on a very conservative calculation.
- (2) A new safety factor of 1.75 was calculated based on the following parameters:
  - a) 58 in<sup>2</sup> break opening area
  - b) 10 msec. break time
  - c) Square root of the sum of the squares (SRSS) of Seismic and LOCA loads
  - d) .12g ground acceleration

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NOV 18 1976

- (3) The NRC staff requested documentation of the above calculation for further evaluation.
- (4) Westinghouse presented a new statistical evaluation method to assess the margin of safety for the probability of grid crushing by constructing two normal distributions and investigating the intersection of the two curves; one curve for the calculated grid impact load and the other for experimentally determined crushing force.
- (5) Westinghouse performed additional grid impact tests and its improved 95x95 value is reflected in the new margin 1.75 determined in (2) above.

We also had discussions regarding the forces on the control rods during a LOCA. We advised the applicant that we may require additional information concerning these forces.

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W. J. Pike, Project Manager  
 Light Water Reactors Branch No. 3  
 Division of Project Management

Enclosure:  
 As Stated

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NOV 18 1976

- 3 -

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ENCLOSURE  
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MEETING SUMMARY DISTRIBUTION

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Local PDR  
TIC  
ACRS (16)  
IE (3)  
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LWR-3 File  
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E. Case  
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R. Clark  
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J. Miller  
F. Williams  
R. Heineman  
H. Denton  
D. Muller  
W. Butler

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P. Check  
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