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MEMORANDUM FOR: Goutam Bagchi, Chief
Structural Engineering Research Branch, RES

THRU: Leon L. Beratan, Chief
Site Safety Standards Branch, SD

FROM: Rex Wescott
Site Safety Standards Branch, SD

SUBJECT: COMMENTS ON DRAFT SCOPE OF WORK FOR RFP FOR EVALUATION
OF MARGINS AVAILABLE IN FLOOD PROTECTION OF NUCLEAR
POWER PLANTS

In response to your request for comments on the scope of work of the subject RFP from members of the Research Review Group (RRG) on Flood Hazard and Flooding Effects, the following comment and suggestion are provided:

1. The NRR request, as stated in the October 26, 1977 memorandum from E. Case to S. Levine emphasizes the need to assess probabilistic methods for determining the Design Basis Flood (DBF) and to determine the residual risk (if any) associated with present flood protection requirements. The scope of work, however, appears to place considerable emphasis on determining the probability and consequences of failure of protective structures should the DBF be exceeded (implied by Item 4, Part B). Because of the apparently low probability of exceeding the DBF in comparison with other hazards, the residual risk induced by this scenario can be expected to be insignificant. A greater potential cause of flood risk would be failure of protective structures from non-hydrologic causes (seismic or piping) during water levels below that of the DBF.
2. I suggest that Part B of the scope be modified to look at non-hydrologic failure of the protective works as the greatest potential contributor of additional risk. The investigation of radiological consequences (Part C) should not be undertaken unless the probability of plant site flooding is shown to be of the same order of magnitude or greater than the probability of other hazards that also have a potential for radiological consequences. Also, I expect that the potential for, and seriousness of radiological consequences resulting from flooding are very dependent on site design and location. Therefore, the intensive investigation of a few plants should not be expected to result in conclusions generally applicable to most nuclear power plants.

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TASK NUMBER: N/A

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Rex G. Wescott
Site Safety Standards Branch
Office of Standards Development

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OFFICE	SSSB:SD	SSSB:SD		
SURNAME	RWescott:cbj	LLBeratan		
DATE	4/2/80	4/2/80		