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JUL 16 1976

Docket No. 50-410

Niagara Mohawk Power Corporation  
ATTN: Mr. Gerald R. Rhode  
Vice President - Engineering  
300 Erie Boulevard, West  
Syracuse, New York 13202

Gentlemen:

The NRC staff has continued its review of the enclosure to your letter dated March 5, 1976 which relates to design and analysis methods for the proposed revetment-ditch system for Nine Mile Point Nuclear Station - Unit 2. On May 24, 1976 we transmitted our initial requests for additional information relating to the physical model study described in Section 4 of the enclosure to your March 5, 1976 letter.

As a result of our continuing review of the remaining sections of the enclosure to your March 5, 1976 letter, we have developed requests for additional information regarding the storm surge analysis. The enclosure to this letter delineates the information which we will require in order to continue our review.

At your request we have reviewed the analysis of a surge due to an extreme squall line. We agree with your conclusion that this surge will be less than that due to the Probable Maximum Wind Storm. The NRC staff concludes that no further work is required in this area.

If you require clarification of the information requested please contact the NRC staff's assigned Licensing Project Manager immediately.

Sincerely,

Original signed by  
D. B. Vassallo

D. B. Vassallo, Chief  
Light Water Reactors  
Branch No. 4  
Division of Project Management

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OFFICE	DPM/LWR #4	DPM/LWR #4			
SURNAME	WKane, pv	DBVassallo			
DATE	07/16/76	07/16/76			

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JUL 16 1976

REQUEST FOR ADDITIONAL INFORMATION  
NINE MILE PONT-2

1. We have evaluated Chapter 2, Storm Surge Model of the February, 1976 report and compared it to the 1973 response to question 34 of our CP review and have identified three items that have been changed or added: 1) the 1976 report contains more verification data, 2) the 1976 report uses a different historical storm as the basis of the Probable Maximum Storm and 3) the 1976 report contains an analysis of the surge resulting from the Probable Maximum Squall Line. Have there been any other changes that are incorporated into the 1976 analysis? In particular, has the surge model been changed during the three year interval between reports? Identify all changes in the models and the analysis and substantiate that they are conservative.
2. The verification studies are inconclusive in defining the accuracy to which the model can predict storm surge. In addition to fluctuations in the predicted surge hydrographs, that in many cases are very different from that recorded, extreme values are seen to differ by tens of percent in several cases. In particular, the model underpredicts the surge at Oswego (the only verification gage station near the site) from the February, 1972 storm by over 15 percent. It is our position that either the model be revised to conservatively reproduce historical storm surges or criteria be developed to increase predicted extreme surge values to produce conservative results.

In addition, for verification studies include maps locating gage stations and grid points and depths where the surge was calculated.

3. The grid spacing used in the analysis has not been shown to be adequately fine to produce conservative estimates of storm surge, particularly in the nearshore area. Verification studies revealed deficiencies in the model; these may be in part due to too coarse a grid. Your referenced grid sensitivity analysis performed for a similar model used by Stone and Webster on Long Island Sound does not resolve the problem; the referenced review is incomplete. No criteria for the choice of grid size has been presented by the applicant. It is our position that the grid size used in the model must be justified and shown to produce conservative results.
4. The model of the Probable Maximum Wind Storm used in the 1976 report is different from that used previously. How does the resulting storm surge at the site differ from that previously computed? Figures showing the predicted surge and a map with the computational grid, showing the location of the point where the surge was calculated, should be provided. The water depth used in the computations for the surge at the site should be stated (figure R2.34-4 is not clear in this regard).

1978

5. The applicant states that the storm track used for the PMWS surge estimate produced the most conservative results; other tracks produced smaller surges. Provide a map showing the other tracks tested and a table listing the surge elevations produced.
6. How was the storm translation speed added to the wind speeds and how does the resultant wind vary over the lake? Table 2.2-3 does not include the effects of storm translation speed as discussed with you in May, 1973.
7. In order to adequately assess the model and the results obtained from it we will require the computer runs including the program listing, input and output on a continuous, unseparated series of printout sheets. Provide computer runs for a PMWS case and for the February, 1972 verification storm.

