

August 3, 1981

Docket No. 50-155
LS05-81-08-004



Mr. David P. Hoffman
Nuclear Licensing Administrator
Consumers Power Company
212 West Michigan Avenue
Jackson, Michigan 49201

Dear Mr. Hoffman:

SUBJECT: BIG ROCK POINT - SEP TOPIC II-2.A, SEVERE WEATHER
PHENOMENA

By letter dated December 17, 1980, we forwarded to you our evaluation of SEP Topic II-2.A, "Severe Weather Phenomena" for the Big Rock Point site. Your response of March 9, 1981, indicated that the staff values for extreme temperature, lightning strike frequency and ice and snow loading were appropriate. However, you indicated that the staff values for design wind speed and tornado loadings are too high.

The extreme straight line wind speed of 80 mph selected by the staff represents an approximate 100 year wind as determined at both Grand Rapids and Sault Ste Marie, Michigan and reported in NBS Building Science Series 118, "Extreme Wind Speeds at 129 Stations in the Contiguous United States." Your response suggests that a 62 mph wind speed would be more appropriate in spite of observations of 67 mph at both the aforementioned locations. In either case, the 62 mph wind would be expected to occur more frequently than every 20 years. Viewed in this perspective the 80 mph wind provides a conservative basis for structural response evaluation.

The tornado wind speed chosen by the staff, 360 mph, is based upon the results of a study by J. McDonald of Texas Tech. University (Enclosure 2 of the December 17, 1980 letter) and represents an upper 95 percentile, 10^{-7} probability per year tornado. In McDonald's analysis, an expected 10^{-7} tornado wind speed of 272 mph which is higher than the 250 mph suggested by CPCo, was identified, as appropriate. The statistical analysis by McDonald utilizes weighting factors for population density, terrain features and tornado intensity based on the Fujita classification scheme which provides some degree of allowance for uncertainty in tornado observation. The additional conservatism provided by use of the upper 95 percentile at the 10^{-7} probability level assures that the 260 mph wind speed has a low likelihood of being exceeded.

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Based on the above, we feel that you have not provided sufficient justification for us to revise our evaluation. Therefore, we conclude that the evaluation sent to you on December 17, 1980 is correct and topic II-2.A is complete. The evaluation will be a basic input to the integrated safety assessment for your facility. The assessment may be revised in the future if your facility design is changed or if the NRC criteria relating to the subject is modified before the integrated assessment is completed.

Sincerely,

Dennis M. Crutchfield, Chief
Operating Reactors Branch #5
Division of Licensing

cc: See next page

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