

APR 19 1973

R. C. DeYoung, Assistant Director for PWR's, I

EVALUATION OF CONSERVATISM OF INDIAN POINT METEOROLOGY
PRESENTED BY THE APPLICANT IN SUPPLEMENT 14 OF THE FSAR

PLANT NAME: Indian Point Nuclear Generating Unit 3
LICENSING STAGE: OL
DOCKET NUMBER: 50-286
RESPONSIBLE BRANCH: PWR #1
REQUESTED COMPLETION DATE: 4/20/73
APPLICANTS RESPONSE DATE NECESSARY FOR
NEXT ACTION PLANNED ON PROJECT: None
DESCRIPTION OF RESPONSE: N/A
REVIEW STATUS: Evaluation Complete - Site Analysis Branch

The staff meteorologist, E. H. Markee, has reviewed the methods of estimating atmospheric diffusion conditions for design basis accidents presented by the applicant in Supplement 14 of the FSAR. His conclusions are as follows:

1. The "split sigma" model cannot be considered for estimating the diffusion conditions at this site because the v_{ave} , from which sigma theta was derived, does not respond accurately to wind direction fluctuations at wind speeds less than 3 mph and wind speeds in this category occurred 16.3% of the time.
2. The proposal to allow diffusion to the distance of the actual site boundary distance instead of the minimum site boundary distance is rejected because it is inconsistent with the method used originally to establish the "five percentile criterion" for X/Q evaluation for design basis accidents. At this site the winds blow toward this minimum site boundary distance with a high frequency (13.9%) and diffusion conditions as determined by wind speed and atmospheric stability produce higher than average X/Q's when the wind is in this sector. Therefore, even though the staff is using a standard

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procedure to establish conservative X/Q values, the degree of conservatism of the values for this site is less than the values established for many other sites.

- 3. Allowance for the effect of averaging diffusion conditions over a two hour period cannot be used in the evaluation of accident X/Q values due to the variability in assumed lateral and vertical plume spread during a given stability condition and the necessity of providing conservative estimates. This conservatism is necessary since this site has a unique and adverse combination of a very short minimum site boundary distance, a high frequency of winds blowing towards this shortest distance and a high frequency of poor diffusion conditions for this wind direction.
- 4. The turbulent building wake diffusion data developed from wind tunnel tests were not developed for light winds (0-4 mph). Therefore it is premature to use these data for the meteorological conditions of interest until they have been verified during light wind conditions and stable thermal stratification in the field.

Therefore, we conclude that the applicant has not presented sufficient justifications to depart from the staff's standard procedure of estimating X/Q values for accidental releases from the plant.

Harold R. Denton, Assistant Director
for Site Safety
Directorate of Licensing

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