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ATOMIC ENERGY COMMISSION
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To Files
THRU: Charles G. Long, Chief, Reactor Project Branch No. 3
Division of Reactor Licensing

PHONE CALL FROM DUKE POWER COMPANY, OCONEE, DOCKET NOS. 50-269, 50-270, AND 50-287

Messrs Paul Barton and Charlie Dewey of Duke Power called September 16, 1969 to discuss current efforts on meteorological measurements. Irwin Spickler, Bob Waterfield, and Denny Ross were on the line for DRL. They have classified pole data with tower data for the June to October 1967 period and have reduced the data to a matrix showing 150-foot tower inversion strength versus calms and various wind speeds (in meters per second). Of 3228 observations, 1108 inversions (32%) were evident. The table shows 48.46% of these inversions were 1-2° F, 75.44% of the observed inversions had a strength between 1 and 4°, and 90.25% of the inversions had a strength between 1 and 6 degrees. Only 2.07% had inversion strengths greater than 8° F. In terms of wind speeds for all 1108 observations 6 observations were calm, 21 were 0.5 m/s, 130 were 1 m/s, 56 were 1.5 m/s, 23 were 2 m/s. The above were for inversions of 1°. For 4° inversions, 8 calm; 21, 0.5 m/s; 70, 1 m/s; 20, 1.5 m/s; 12, 2 m/s. For 6° inversions, 52 observations were calm, 165 were 0.5 m/s, 551 were 1 m/s, 191 were 1.5 m/s, 76 were 2 m/s, and 40 were 2.5 m/s. The wind data were taken from the ground level pole and the inversion temperature ΔT data were taken from the tower. In connection with a question about pole ΔT or tower ΔT versus thermographs, Charlie Dewey stated they were correlating wind data, pole versus tower, but results were not yet in. They are now getting printout of all tower data of August 1967, 1968, and 1969 looking for changes due to site developments. Charlie Dewey stated they are starting their smoke test development program. They have a photographer, flood lights, Very pistols, parachute flares, and intend to obtain both qualitative and quantitative results. They will analyze 1-hour wind-speed traces to get σ_θ from the chart and will estimate

$$\sigma_\theta = \frac{\text{wind range (in direction)}}{4\text{-}6}$$

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Then knowing σ_θ they will find σ_y, σ_z from curves in Meteorology and Atomic Energy. Having plots of σ_y, σ_z versus σ_θ, they will interpolate as necessary perhaps go to ± 1½ degree to get an interval value and then perhaps a plot of σ_θ versus σ_y. In general, it appears that they are doing extensive meteorological evaluation at present. Duke would like to have an informal meeting on their meteorological program with us some time before the end of September to discuss their plans for evaluations for measurements they are programming for the month of October.

D. F. Ross
Reactor Project Branch No. 3
Division of Reactor Licensing

R. S. Boyd
A. Schwencer
R. Waterfield
I. Spickler
P. Howe
RPB-3 Reading
Orig: DFRoss