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TORNADO PARAMETERS FOR NUCLEAR POWER PLANTS

Quarterly Report

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Rather rapid progress has been made compiling and plotting tornadoes by the Fujita intensity scale and the Pearson path length and width scales. There is evidence now to believe that periodic shifts occur in the macro-scale strong tornado regions and therefore high risk areas (1H), medium risk areas (1M), and low risk areas (1L) would likewise shift over a given period. Even with that evidence there are still obvious high risk and low risk areas throughout the United States which are well established. When the maps are completed for a twenty-five year period the results will be discussed in detail.

It now appears that the maps should be compiled for a longer period of time especially for the stronger tornadoes of the F4 and F5 categories. Although data was quite scarce through the earlier time periods, strong tornadoes were often reported The climatology of past years and the mean flow patterns of recent times may give important clues as to what we can expect in the future. Therefore a more thorough investigation may be imminent.

Tornado movies are being collected and analyzed to determine the actual windspeeds in tornadoes. Particulate matter and cloud elements are traced to obtain the wind velocities within the funnel. Ground investigations are being utilized to compute the translational motion of the tornado in its entirety.

We have embarked on a program to obtain more tornado movies through informal solicitation. The movies recently received contain information of moderate and intense tornadoes. It would be likely that a movie with good definition would give us an accurate estimate of the windspeeds in a tornado. The prospects look favorable for advancement in this area.

More definitive results will be given in future quarterly reports. The research is progressing smoothly and no delays or extra expenses are expected for the foreseeable future.