

# **A Revolutionary Meteorological Monitoring System Installed at the Perry Nuclear Power Plant**

**By**

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## **Abstract**

The meteorological monitoring system at the Perry Nuclear Power Plant (PNPP) was originally installed in the early 1970's, upgraded in the early 1980's, and became increasingly more expensive to maintain in the mid 1990s. In addition, the original data validation software was extremely outdated. As a result, First Energy Corp. and PNPP elected to upgrade their current monitoring system to a more cost-effective and user-friendly system. This new system replaced the complex series of primary and validity sensors and backup and validity sensors with two independent and identical systems. A new equipment shelter complete with four dataloggers and modems, as well as a dedicated personal computer were installed near the tower. State-of-the-art software was developed which compares data between the two redundant systems with predetermined values based on regional meteorology and onsite climatology, and makes decisions on the quality of the data. The software generates one meteorological data set which is the >best of= the two independent systems after eliminating spurious data from either system which could influence one system or the other, such as tower interference, aspirator motor failures, etc. The new software always allows data to pass through, leaving the ultimate decision to eliminate data up to the reviewer and saving hundreds of labor hours annually in manually re-entering data. PNPP has realized additional cost savings with the reduction of the number of sensor recertifications and the reduced costs associated with maintenance and calibrations. PNPP has estimated that the System has nearly paid for itself since it became fully operational in October 1999.