



ABSTRACT

INTEGRATED DATA ACQUISITION SYSTEMS FOR REAL-TIME METEOROLOGICAL MONITORING

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Real-time meteorological monitoring data acquisition is routinely performed at a number of nuclear facilities within the USA. In these systems, meteorological sensors (wind speed, wind direction, temperature, etc.) on single or multi-level meteorological towers provide signals as input to the data system. The system then scans the input signals, digitizes the data values, adjusts the data to engineering units and stores data averages. The data are then collected, validated and provided for display and/or input to dispersion models. The data may then be archived into a database for future retrieval and reporting.

Since the meteorological towers are often remote from the reporting and display computer, current data acquisition and handling systems generally utilize distributed processing wherein a remote data logger acquires the data initially then passes the data to the central computer upon request.

This paper describes a number of approaches for integrated data systems for real-time meteorological monitoring ranging from simple PC-based systems to more complex designs utilizing redundant high level minicomputers. System components (hardware and software) and their function in an integrated system are described. System features are discussed including advantages and disadvantages of the various designs. Features necessary to insure high data recovery and availability and the preservation of a high quality database are included.

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