

DEC 26 1984

yellow

Westinghouse Electric Corporation
ATTN: Mr. Mead D'Amore, Acting Manager
Columbia Plant
Nuclear Fuel Division
Drawer R
Columbia, SC 29250

Gentlemen:

SUBJECT: IE INFORMATION NOTICE NO. 84-91: QUALITY CONTROL PROBLEMS OF
METEOROLOGICAL MEASUREMENTS PROGRAMS

Enclosed is a copy of IE Information Notice No. 84-91: Quality Control Problems of Meteorological Measurements Programs. This information notice is provided for your awareness of ongoing problems with the collection of important meteorological data which may have an impact on your assessment of environmental conditions during routine operations or emergency situations. As stated in the notice, this information notice is provided for information purposes and no specific action or written response is required.

Sincerely,

J. Philip Stohr, Director
Division of Radiation Safety and
Safeguards

Enclosure:
IE Information Notice
No. 84-91

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Document Control Desk
State of South Carolina

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, DC 20555

December 10, 1984

IE INFORMATION NOTICE NO. 84-91: QUALITY CONTROL PROBLEMS OF METEOROLOGICAL
MEASUREMENTS PROGRAMS

Addressees:

All nuclear power reactor facilities holding an operating license (OL) or a construction permit (CP).

Purpose and Summary:

This information notice is provided to inform licensees of ongoing problems with the collection of important meteorological data at nuclear power reactors. It was found that some meteorological measurements programs have not been properly operated and maintained to ensure the availability of high-quality meteorological data for use in emergency response and in assessments of the radiological impacts of routine and "off-normal" releases to the atmosphere. It is expected that recipients will review the information for applicability to their facilities and consider actions, if appropriate, to preclude a similar problem occurring at their facilities. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

Poor quality meteorological measurements resulting from inadequately operated and maintained meteorological programs have been encountered and identified through emergency preparedness appraisals, Licensee Event Reports (LERs), and reviews of meteorological data summaries submitted in semiannual effluent reports.

There are two major concerns in this area. One concern is the availability of sufficient meteorological data; the second is the availability of valid meteorological data.

For example, one licensee claimed achievement of about 90% availability for meteorological data; however, only about 50% of those data were within accuracy specifications. A number of licensees have experienced frequent and often prolonged outages of the data collection systems, due to severe weather such as lightning, icing, and high winds, with loss of significant amounts of data. Other licensees have experienced gradual degradation and/or frequent

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replacement of meteorological sensors due to local environmental conditions such as salt, dust (including coal dust), or the synergistic effects of pollutants such as sulfur oxides and nitrogen oxides with moisture. Misalignment of wind direction sensors and problems with measurement of vertical temperature difference (through failure of the aspirator or orientation of the shield) have also been reported by licensees. Inadequate maintenance and control of ground cover and tree growth that may obstruct air movement in the vicinity of the meteorological measurement system (resulting in erroneous wind speed, wind direction, and atmospheric stability determinations) have been observed during NRC inspections.

Discussion:

During emergency response situations, availability of erroneous meteorological data could result in mis-characterization of important conditions such as wind speed (for determining plume arrival and transit times), wind direction (for determining plume position), and atmospheric stability (for determining the concentration of material within the plume and plume shape). The mis-characterization of meteorological conditions could adversely affect: recommendations for protective actions (e.g., evacuation vs. sheltering); designation of the area for which actions are warranted; assessments of plume arrival and transit times; and deployment of environmental sampling teams. For assessments of "non-accident" releases, erroneous meteorological data may result in an improper calculation of dose, thereby making the demonstration of continuing compliance with the numerical dose guidelines of 10 CFR 50, Appendix I, suspect. For example, mis-characterization of atmospheric stability by one class can result in a difference of a factor of 10 in estimates of short-term concentrations.

A number of data screening and checking programs are available for use with computerized data collection systems. Such programs used by the NRC staff are described in NUREG-0917, "Nuclear Regulatory Commission Staff Computer Programs for Use with Meteorological Data," published in July 1982. For non-computerized data collection systems, such as those recording directly on strip charts, data screening and checking requires special skills to identify subtle variations in data trends and ranges. Data screening and checking programs and procedures can supplement regular operability, maintenance, and calibration checks.

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the Regional Administrator of the appropriate NRC Regional Office or this office.

Edward L. Jordan, Director
Division of Emergency Preparedness
and Engineering Response
Office of Inspection and Enforcement

Technical Contacts: James E. Fairbent, NRR
(301-492-9427)

William L. Fisher, IE
(301-492-4671)

Attachment: List of Recently Issued IE Information Notices

LIST OF RECENTLY ISSUED
IE INFORMATION NOTICES

Information Notice No.	Subject	Date of Issue	Issued to
84-90	Main Steam Line Break Effect on Environmental Qualification of Equipment	12/7/84	All boiling water reactor facilities holding an OL or CP
84-89	Stress Corrosion Cracking in Nonsensitized 316 Stainless Steel	12/7/84	All boiling water reactor facilities holding an OL or CP
84-88	Standby Gas Treatment System Problems	12/3/84	All boiling water reactor facilities holding an OL or CP
84-87	Piping Thermal Deflection Induced by Stratified Flow	12/3/84	All boiling water reactor facilities holding an OL or CP
84-86	Isolation Between Signals of the Protection System and Non-Safety-Related Equipment	11/30/84	All boiling water reactor facilities holding an OL or CP
84-85	Molybdenum Breakthrough from Technetium-99m Generators	11/30/84	All NRC licensed medical institutions and radiopharmaceutical suppliers
84-84	Deficiencies In Ferro- Resonant Transformers	11/27/84	All boiling water reactor facilities holding an OL or CP
84-83	Various Battery Problems	11/19/84	All boiling water reactor facilities holding an OL or CP
84-82	Guidance for Posting Radiation Areas	11/19/84	All boiling water reactor facilities holding an OL or CP
84-48 Suppl. 1	Failures of Rockwell International Globe Valves	11/16/84	All boiling water reactor facilities holding an OL or CP

OL = Operating License
CP = Construction Permit