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SUBJECT: Discusses util response to NUREG-0737, Items III.A.1.2 & III.A.2.2.

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November 23, 1988

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U.S. Nuclear Regulatory Commission
Document Control Desk
Attn: Mr. Carl Stahle
PWR Project Directorate No. 1
Washington, D.C. 20555

Subject: NUREG-0737 Items III.A.1.2, III.A.2.2
R.E. Ginna Nuclear Power Plant
Docket No. 50-244

Dear Mr. Stahle:

The requirements for NUREG-0737 Items III.A.1.2, Upgrade Emergency Support Facilities, and Item III.A.2.2, Meteorological Data, are given in Supplement 1 to NUREG-0737, Requirements for Emergency Response Capability (Generic Letter 82-33). The emergency support facilities include the Technical Support Center (TSC), the Operational Support Center (OSC) and the Emergency Operations Facility (EOF).

The emergency facilities were inspected by the NRC as part of an Emergency Preparedness Appraisal during the period of November 2-13, 1981, Inspection 81-22. Corrective actions were taken to resolve all findings of the appraisal and all items were closed out in subsequent NRC inspections. Several annual exercises, including the 3-day Ingestion Pathway Exercise conducted on October 27-29, 1987 (Inspection 87-24), have demonstrated the adequacy of the emergency facilities. In addition, the emergency response facilities were inspected during July 26-29, 1988 as part of an emergency preparedness inspection (Inspection 88-14) and no inadequacies were identified.

A proposed program and schedule for upgraded meteorological measurements and analyses was sent to the NRC on July 1, 1981 with a follow-up letter on June 11, 1982. The proposed program was put into place with the following changes. The backup weather instrumentation originally located at Substation 13A has been relocated to Substation 204 approximately 3½ miles south of Ginna. The digital temperature readouts were proposed to be modified to provide a delta temperature readout in the control room. Instead, delta temperature was made available on the plant process computer system and by remote interrogation of the primary

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meteorological tower computer. A backup power source proposed to be installed for the primary meteorological tower was not installed, since the primary and backup meteorological instrumentation are fed from separate electrical power sources. Also, Regulatory Guide 1.97, Revision 3, does not require a backup power supply. The meteorological program was reviewed by the NRC as part of the Emergency Preparedness Appraisal Inspection 81-22, November 2-13, 1981, as part of Inspection 82-11, May 17-19, 1982, and Inspection 88-14, July 26-29, 1988.

Documentation concerning the TSC, OSC, EOF and Meteorological Data is provided in Attachments 1-4.

Very truly yours,


Robert C. Mecredy
General Manager
Nuclear Production

BRQ\001

Attachments

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Ginna Senior Resident Inspector

ATTACHMENT 1

Technical Support Center (TSC)

The TSC was inspected as part of Emergency Preparedness Appraisal 81-22. There was one open item (81-22-09) that was closed out during Inspection 83-08 (#3.06). The TSC was also inspected as part of Inspection No. 50-244/88-14 (See Attachment 3).

Following are applicable portions of documents produced here for convenience.

Inspection Report No. 50-244/81-22, November 2-13, 1981

4.1.1.2 Technical Support Center (TSC)

The TSC was located adjacent to the main building in a structure specially designed and built to serve as the TSC. The TSC consists of a central space surrounded by the NRC resident inspector office, a conference room, a document room, and another room currently used for computer operations. One end of the central space has mobile partitions enclosing an area used for routine operations. The TSC is directly accessible from the outside through one door. Walking time from the TSC to the control room (CR) through any of two doors communicating to the turbine building was less than one minute.

There were no area monitors to indicate radiation levels in routes between the TSC and the CR. The licensee estimated that the maximum dose received by a person walking from the CR to the TSC during a design basis accident would be less than 5 rem. The auditor found no provisions for closed circuit TV that would facilitate face to face interaction between personnel located in the CR and TSC and that could be used to retrieve information not available in the TSC data system.

The TSC was currently in the procurement-design stage. Its complete set-up was scheduled for mid-1983.

The working space in the TSC (2400 sq. ft.), would allow 32 persons.

An off-site dose-assessment map mounted on a mobile frame, was located in the TSC, including a set of plastic isopleths. It was not divided into the 22 1/2 - degree sections, as specified in NUREG-0654, and was limited to 20 miles from the plant site.

Display-size "plant status" printed forms were available in the TSC, but no plant operating records.

The auditors found that data communications were not complete at the time of the appraisal, but a hard copy from the plant computer was obtainable at two locations within the TSC.

The structure of the TSC provided shielding equal to about two feet of concrete. Should radiation levels exceed specified habitability criteria, current plans called for evacuation of selected TSC personnel to the CR.

The ventilation system of the TSC was in place but not fully operational. Particulate (HEPA) and charcoal filters were installed but had not been activated.

Dedicated individual voice links between the TSC and the CR, Emergency Operations Facility (EOF), and NRC were: from the TSC to the CR (telephone, intercom, and radio), from the TSC to the EOF (none), TSC links with NRC, ENS extension in the main TSC area, and ENS, HPN extensions in the NRC resident's office. In addition, there were two commercial telephones for NRC use.

There were no dedicated telephone links between the TSC and the State and Counties (New York State; Wayne and Monroe Counties). Hot lines to those agencies were expected to be set up by mid-December 1981. Two outside telephone lines were available for communications with onsite and offsite centers and agencies.

The TSC had no radio facilities for communicating with field monitoring teams.

Noise was controlled by acoustical tile ceiling and carpeted floor, doors between separate rooms, and flashing lights to identify ringing telephones.

The Document Room (260 sq. ft.) contained up-to-date records (e.g., Technical Specifications, Plant Operating Procedures, Emergency Operating Procedures, Final Safety Analysis Report, and updated drawings, schematics, and diagrams). The room had table-top space for working. Emergency-kit items and Emergency Survey Instrumentation (see Item 4.2.1.1 below) were found in this location. Additional NRC individuals were allocated a private office (450 sq. ft.) within the same TSC building.

The TSC has a kitchen, with stove-sink; refrigerator with freezer, and restroom with shower.

The auditors found that current provisions for monitoring equipment for immediate awareness of airborne radioactivity were inadequate. This is of particular importance because the ventilation system must be initiated manually.

Based on the above findings, improvements in the following areas are required to achieve an acceptable program:

- Complete the installation and testing of equipment in the TSC to ensure that it will be habitable and functional and able to perform its intended use during accident conditions. (50-244/81-22-09)

Inspection No. 50-244/83-08, April 18-22, 1983

- 3.06 (Closed) 50-244/81-22-09. Complete the installation and testing of equipment in the Technical Support Center (TSC) to ensure that it will be habitable and functional and able to perform its intended use during accident conditions. (Appendix A, item 6).

The inspectors noted that the ventilation system of the TSC was tested and operational. Other equipment (e.g., communications, radiation detection, plant operating parameters) that would enable the TSC to perform its intended use, were in place.

ATTACHMENT 2

Operations Support Center (OSC)

The OSC was inspected as part of Emergency Preparedness Appraisal 81-22. One open item (81-22-10) was closed out by RG&E letter to the NRC, Maier to Smith, June 30, 1982. The open item was a long term improvement item (Appendix B) and all Appendix B items were closed out per Inspection 83-25, November 15-18, 1983. The OSC was also inspected on July 26-29, 1988 per Inspection 88-14 (See Attachment 3). The current location of the OSC is inside the TSC.

Following are applicable portions of documents produced here for convenience.

Inspection Report No. 50-244/81-22, November 2-13, 1981

4.1.1.3 Operations Support Center (OSC)

The OSC was located adjacent to the TSC, in an area having 450 square feet, normally used for auxiliary operators. Although within the same building complex the OSC was not protected by the shielded covering, or the ventilation system of the TSC. The OSC is accessible from the TSC via a short hallway and has an access door to the turbine building. The primary communication link between the OSC and the CR and the TSC was through portable radios. If the OSC becomes uninhabitable, personnel would evacuate to the computer room in the TSC.

Emergency equipment at the OSC consisted of 6 full face masks with charcoal cartridges; 2 portable floor lights; and 6 sets anti-contamination clothing. Potassium iodide tablets were not included. Dosimeters and radiation monitoring equipment was lacking.

Based on the above findings, this portion of the licensee's program appears to be acceptable, but the following matters should be considered for improvement:

- Provide radiation monitoring and radiation protection equipment and supplies in the OSC. (50-244/81-22-10)

RG&E letter to NRC, Maier to Smith, June 30, 1982.

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Provide radiation monitoring and radiation protective equipment and supplies in the OSC. (See Section 4.1.1.3).

RG&E Response:

Potassium Iodide tablets and self reading pocket dosimeters are included in the equipment stored in the OSC. Radiation monitoring equipment for surveys of the OSC or for use out on a job is available in the TSC. The procedure for manning the OSC (SC-312) includes the requirement for a habitability survey, with relocation to the TSC if necessary.

Inspection Report No. 50-244/83-25, November 15-18, 1983

Inspection Summary:

Areas Inspected: Special announced follow-up inspection of emergency preparedness items from a prior appraisal performed on November 2-13, 1981 (Report No. 50-244/81-22), and items from a Public Notification System inspection performed on June 7-9, 1983. The inspection involved 26 inspector hours on site by one regionally based NRC inspector.

Results: Of the 28 Appendix B items [related to the OSC], 0 remain open; and the 2 Public Notification System items, 0 remain open. No violations were identified.

Emergency Operations Facility (EOF)

The EOF was inspected as part of Emergency Preparedness Appraisal 81-22. There was one open item (81-22-11) which was closed during Inspection 83-08 (#3.07). A related open item (81-22-18) was closed out in Inspection 83-25. The EOF was also inspected during Inspection 88-14. Items 5.2 and 5.6 of this report are not related to any NUREG-0737 requirements.

Following are applicable portions of documents produced here for convenience.

Inspection Report No. 50-244/81-22, November 2-13, 1981

4.1.1.4 Emergency Operations Facility (EOF)

The EOF, or "Recovery Center", was located at RG&E's corporate headquarters, in downtown Rochester, 18 miles WSW of the Ginna plant.

The auditors toured various areas within the building designated as the EOF and noted that the facilities were scattered through the building. The "main" EOF was a 1900 sq. ft. room on the seventh floor, while the Engineering Staff would occupy regular office spaces located on the sixth floor. The Dose Assessment area would be located on a separate floor from the "main" EOF. Readout of the station meteorology could be obtained via CRT terminal, TI 700 terminal, and by telephone communication with CR and TSC.

The main EOF had work spaces for the Recovery Manager and his staff, communications, and outside agencies (including NRC). The auditor noted sufficient work space for 5 NRC persons and a separate office for NRC use across the hallway from the main EOF.

The main EOF contained: work tables, identification signs, telephones, emergency plans and procedures, applicable parts of the FSAR and ER, an assignment board for main EOF activities, and plant flow diagrams. The auditor noted a total absence of radiation protection equipment and supplies (e.g., radiation survey meters, dosimeters, check sources, sample counting equipment, air samplers); site map divided into 22 1/2 degree-sectors, clock, radio, and direct-line communication system. There were no first-aid kits and decontamination supplies in the EOF.



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There were no dedicated communications equipment from the main EOF to the TSC and CR, except for one dedicated telephone line and a radio transceiver located in the Recovery Manager's office. Non-dedicated voice communication links with the NRC, and federal, state, and local agencies consisted of 27 centrex telephones.

Based on the above findings, improvements in the following areas are required to achieve an acceptable program:

- Provisions for an Emergency Operations Facility (EOF) having sufficient and appropriate equipment to enable the direction, coordination, and evaluation of licensee's activities as demanded by the emergency organization. (50-244/81-22-11).

Inspection Report No. 50-244/83-08, April 18-22, 1983

- 3.07 (Closed) 50-244/81-22-11. Provide for Emergency Operations Facility (EOF) having sufficient and appropriate equipment to enable the direction, coordination, and evaluation of licensee's activities as demanded by the emergency organization. (Appendix A, item 7).

The inspectors noted that a new EOF has been activated on 49 East Avenue, Rochester, New York, about 18 miles west southwest of the Ginna plant. The EOF is located in the basement level. The inspectors toured the EOF facilities, and these appeared to be adequate to fulfill its functions during emergencies. However, some emergency support equipment, located in the EOF, was found inadequate (e.g., lapel-breathing zone samplers, and the MIDAS dose assessment program had not been finalized). See item 3.10.

- 3.10 (Open) 50-244/81-22-18. Evaluate the types of portable instrumentation needed to rapidly and accurately measure radiation and radioactive contamination levels based on the needs of the various functional areas of response during emergencies, and implement their use. (Appendix A, item 10).

The inspectors held discussions with licensee personnel and concluded that an evaluation of portable instrumentation and criteria for their use in performing in-plant and onsite surveys had not been completed. In addition, air sampling equipment at the EOF was found to be inadequate. The licensee indicated that he intends to correct these deficiencies by August 12, 1983.

Inspection Report No. 50-244/83-25, November 15-18, 1983

- 3.04 (Closed) 50-244/81-22-18. Evaluate the types of portable instrumentation needed to rapidly and accurately measure radiation and radioactive contamination levels based on the needs of the various functional areas of response during emergencies, and implement their use (Appendix A, item 10).

The inspector held discussions with licensee personnel and concluded that an evaluation of portable instrumentation and criteria for their use in performing in-plant and onsite surveys had been completed.

Inspection Report No. 50-244/88-14, July 26-29, 1988

5.0 Emergency Response Facilities (ERFs)

- 5.1 Inspections were performed of the EOF, Technical Support Center (TSC), Operations Support Center (OSC), Emergency Survey Center (ESC), Control Room and the Media Center. The inspector verified that plans and procedures were current, equipment and communications systems were checked for operability and equipment was in calibration. No inadequacies were identified.

- 5.2 Eighteen different sets of Plans and Procedures comprise the Nuclear Emergency Response Plans (NERP) for Ginna; those relating to EP are designated Station Contingency (SC) procedures. SC procedures were reviewed and found to be current. Monitoring equipment was found to be operable and within the calibration window. Field sampling procedures require collection of an air sample for ten minutes at a rate of 30 liters per minute. The licensee could not state the basis for this collection volume and rate and agreed to locate and review it to determine if volume and collection could be reduced for given efficiencies and statistical performance specifications. This item is unresolved. (50-244/88-14-02)

- 5.3 The Media Center or Joint News Center is a dedicated facility located in the basement of Corporate headquarters. Five rooms are provided for government use including the NRC. The press briefing room will seat about 250; 12 press phones are provided. Plant schematics, maps, etc. are wall mounted. There is an Emergency Broadcast System (EBS) room and an area dedicated to rumor control which will accommodate a staff of seven. Media procedures are reviewed annually, a media briefing packet is available and the 1988 Media briefing meeting has been held. No inadequacies were identified.

5.4

The EOF is divided into seven areas and rooms; there are 68 phones including NRC's ENS and NY State's Radiological Emergency Communications System (RECS). The dose assessment area is small and was crowded during the July drill. Four dose projection methodologies are available: hand calculations; overlays normalized to unit release for each stability category; a PC using software called Symphony; and a vendor system known as Meteorological Information Dose Assessment System (MIDAS). The PC software is based on a straight line Gaussian and is classified as an extended Class A Model; the software is also capable of doing a plume segmented calculation. Midas is a Class B model and can handle deposition calculations. Site data, in this case, may be imported at vendor's remote terminal.

5.5

Severe Accident Analysis and Core Damage Assessment (CDA) will be done at the EOF. Procedures for CDA are available and are based on PASS data. A Protective Action Recommendation Board and a Classification are wall mounted in the EOF. No inadequacies were identified.

5.6

EOF Operating Procedures are not subject to review by the Plant Operating Review Committee or Quality Assurance. Rather, they are reviewed by a Milestone Committee. The Inspector could not locate a basis for this committee in the License or Technical Specifications. This item is unresolved. (50-244/88-14-03)

Meteorological Data

Meteorological data was covered in two sections of Inspection 81-22, Section 4.2.1.4, Meteorological Instrumentation, and Section 5.4.2, Assessment Actions. There were four open items under Meteorological Instrumentation. Items 81-22-20, 81-22-22, and 81-22-23 were closed out in Inspection 83-08. Item 81-22-21 was closed out by RG&E letter to the NRC on June 30, 1982 and by Inspection 83-25 which states all Appendix B items closed. There were three open items under Assessment Actions. Item 81-22-38 was closed out in Inspection 83-08, item 81-22-39 was closed out in Inspection 83-25, and item 81-22-40 was closed out in Inspection 84-21. Meteorological data, calibration, and tower location were reviewed in Inspection 82-11 and no items of noncompliance were identified. The calibrations of the meteorological instrumentation was also reviewed in Inspection 88-14. RG&E proposals to upgrade the meteorological program are contained in an RG&E letter to the NRC, July 1, 1981 with a follow up letter on June 11, 1982. No response was received from the NRC on the proposed program.

Following are applicable portions of documents produced here for convenience.

Inspection Report No. 50-244/81-22, November 2-13, 1981**4.2.1.4 Meteorological Instrumentation**

The auditors found a brief description of the licensee's meteorological measurements program in Section 6.3.8 of the Emergency Plan. The integration of meteorological information into the licensee dose assessment scheme was found in Procedures: SC-1.13, PC-23, and SC-1.3. Surveillance and maintenance of the measurements program was found in RD-14.

The auditors determined that meteorological capabilities addressed the requirements of NUREG-0737, TAP III.A.2 and the criteria set forth in NUREG-0654, Appendix 2.

The meteorological measurements system had the capability to provide the basic parameters (i.e., wind direction and speed, and an estimate of atmospheric stability) necessary to perform dose assessments. A portion of these data were recorded in the control room (CR) (i.e., 10 meter wind conditions). Instantaneous values of wind and temperature values were available in the CR on the plant process computer and LEDs; but the time history of these data, other than the 10 meter winds was not available there. The auditors determined that dispatching an individual to obtain that information on a continuing basis was not acceptable.



All measurement systems were in operation and calibrated by the contractor. Recent modifications to measurement and recording systems were not described accurately in the plan. The emergency plan should reflect current capabilities instead of proposed improvements. Provisions to obtain meteorological information from an alternate data source (station 13A control building), consisted of dispatching an individual to the location.

During severe weather conditions affecting the site, CR personnel would be advised by the load dispatcher. Access to the NRC health physics network would be used on an interim basis to provide the NRC with direct telephone access for making offsite dose projections.

The preventative maintenance program consisted of a multi-tiered operational program. The primary system was checked on a three time per week basis and the station 13A wind sensor on a once/week basis. Surveillances were reviewed on a weekly basis to assure the operability of the systems. Calibrations were performed on a semi-annual basis by a contractor. The procedure for surveillance activities did not reflect the current configuration of the system, (e.g., recent modifications to the primary system and location of recorders). The auditors noted that, with a semi-annual calibration frequency, additional surveillance activities need to be performed in order to evaluate the electronic response of the equipment (e.g., zero/span checks), and to review strip chart records for system malfunction (e.g., threshold response with bad bearings).

In the event of system malfunction, the I&C staff was notified to perform corrective maintenance on the system. Procedures did not reflect the current instrumentation.

The methodology for using transport and diffusion characteristics did not consider terrain induced effects. Methodologies in use were not supported with a technical basis document for either the meteorological or radiological aspects. The model used for transport and diffusion was a ground-level, straight-line, steady-state, Gaussian-distribution. SC-1.13 took into account real-time meteorological information but the auditors noted various difficulties with this procedure. (See Section 5.4.2).



Based on the above findings, improvements in the following areas are required to achieve an acceptable program:

- Include in the Emergency Plan the current means used for determining the magnitude of release, and for continuous dose assessment. (50-244/81-22-20)

In addition, the following areas should be considered for improvement:

- Establish a mechanism to assure that a continuous record of meteorological information is available in the CR, the TSC and EOF. Include, as a minimum, a hard copy listing of 15 minute averaged values or a continuous trace of wind direction and speed and an estimate of atmosphere stability. (50-244/81-22-21)
- Revise the Emergency Plan, and procedures (e.g. RD-14 and CP-250) to ensure they are consistent with the equipment currently in place. (50-244/81-22-22)
- Identify an alternate source of meteorological data. (50-244/81-22-23)

Inspection Report No. 50-244/83-08

- 3.11 (Closed) 50-244/81-22-20. Include in the Emergency Plan the current means used for determining the magnitude of release and for continuous dose assessment. (Appendix A, item 11).

The inspectors noted that Section 6.3.2 of the Emergency Plan included the present means used to determine the magnitude of the release and for continuous dose assessment.

- 3.29 (Closed) 50-244/81-22-22. Revise the Emergency Plan and procedures (e.g., RD-14 and CP-250) to ensure they are consistent with the equipment currently in place. (Appendix B, item 9).

The inspectors noted that Section 6.3.9 of Emergency Plan and Procedures, RD-14 and CP-250, was revised to reflect equipment in place. (Appendix B, item 9).

- 3.30 (Closed) 50-244/81-22-23. Identify an alternate source of meteorological data (Appendix B, item 10).

The inspectors reviewed Section 6.3.8 of the Emergency Plan and noted that an alternate source of meteorological data was identified.

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Establish a mechanism to assure that a continuous record of meteorological information is available in the CR, the TSC and EOF. Include, as a minimum, a hard copy listing of 15 minute averaged values or a continuous trace of wind direction and speed and an estimate of atmosphere stability. (See Section 4.2.1.4)

RG&E Response:

Descriptions of intended changes to the Ginna meteorological system configuration were provided in submittal letters from Mr. John E. Maier to Mr. Dennis Crutchfield on April 28, 1981 and on July 1, 1981. No formal NRC review has been performed to our knowledge on the content of these submittals, which addressed the meteorological assessment requirements of NUREG-0737 and NUREG-0654. During the November, 1981 Emergency Preparedness Appraisal Inspection (81-22), NRC team members indicated they had not been made aware of the April 28 and July 1 RG&E submittals. In addition, certain acceptance criteria apparently used in the 81-22 Inspection Report with regard to the meteorological system layout have not been formally issued by the Commission. Appraisal team members indicated that newly-revised criteria would be forthcoming which would provide the rationale for the NRC's evaluation of proposed meteorological programs. This revised documentation has not been received by RG&E. A continuous trace of wind speed and direction (33-foot level) is available in the Control Room, along with instantaneous indications of temperature (33, 150 and 250-foot) by computer and digital display. Computer printouts are currently available of instantaneous wind speed, direction and temperature values (33, 150 and 250-foot) in the CR, TSC and EOF. It is anticipated that 15 minute averaged meteorological values will be available in the TSC and EOF by computer terminal for purposes of emergency dose assessment.

Inspection Report No. 50-244, November 15-18, 1983

Inspection Summary:

Areas Inspected: Special announced follow-up inspection of emergency preparedness items from a prior appraisal performed on November 2-13, 1981 (Report No. 50-244/81-22), and items from a Public Notification System Inspection performed on June 7-9, 1983. The inspection involved 26 inspector hours on site by one regionally based NRC inspector.



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Results: Of the 32 Appendix A items, 4 remain open; of the 28 Appendix B items, 0 remain open; and of the 2 Public Notification System items, 0 remain open. No violations were identified.

Inspection Report No. 50-244/82-11, November 2-13, 1981

5.4.2 Assessment Actions

The auditors reviewed the methodology used for offsite dose projections and the basis for recommending protective actions. Two procedures addressed offsite dose projections; SC-1.3A, "Site Emergency (Shift Supervisor and Control Room)", and SC-1.13, "Estimating Off-Site Doses".

The guidance in SC-1.3.A provided the initial dose estimate for the New York State Bureau of Radiological Health (NYBRH). The dose estimates contained in Attachment II consisted of FSAR design safety evaluation calculational results. Contrary to the intent of NUREG-0654, no consideration of actual releases or meteorology were indicated for initial dose projections.

The auditor noted that SC-1.13 was used for projecting offsite doses based on real-time meteorological and release data. The procedure lacked responsibility assignments for actions to be performed during the different phases of the emergency as the onsite organization became activated.

Appendix A to SC-1.13 contained dose factors for converting air concentrations into thyroid dose projections. The method used by the licensee was based on NRC Regulatory Guide 1.109, and provided thyroid dose estimates that were more conservative than those derived by EPA 520/1075-001 "Manual of Protective Actions". For thyroid doses, the licensee used the adult critical age group whereas EPA 520 identified the child's. Calculated air activity that would give for example, a 5 rem dose to the thyroid, was approximately twice as conservative using the licensee method. Comparing adult thyroid doses, the licensee's was approximately five times more conservative than EPA 520. The discrepancies appeared to be primarily attributed to licensee assumptions of a single isotope source (iodine-131) and light work activity breathing rate for adults, whereas the EPA-520 method considered a mixture of radioiodines and a lower (24 hour average) adult breathing rate. The licensee should re-evaluate its dose assessment assumptions to assure that they are consistent with those used by offsite agencies responsible for carrying out protective actions. Other difficulties noted with SC-1.13 included the following:

- 1) Failure to consider rapid changes in source or meteorological parameters.
- 2) Cumbersome method to estimate, categorize and report the stability class.
- 3) Improper selection of ΔT related information (e.g. obtaining a 15 minute average ΔT and converting it to a stability class).
- 4) Use of deficient techniques (e.g., wind direction fluctuation technique to establish stability).
- 5) Unclear assignment of responsibilities (e.g., responsibility for estimating off-site doses using the X/Q overlap and 2 hour dose isopleths).
- 6) Contradictions (e.g., General Radiation Emergency Criterion [paragraph 3.3.9] versus that in paragraph 3.8.3).
- 7) Errata (e.g., 2 hour correction factor given as 3.7×20^6).
- 8) Failure to consider the effects of a ground level release in the diffusion model (e.g., maximum concentrations at site boundaries for all stabilities).
- 9) Failure to provide the basis for "the site boundary effect" (3.8.1, 3.8.2 and 3.8.3).
- 10) Protective action recommendations based on EPA 520, "Manual of Protective Actions", were not defined, nor was specific reference provided to those listed in Table 5.1 of SC-1, "Radiation Emergency Plan".

Based on the above findings, improvements in the following areas are required to achieve an acceptable program:

- Include the Emergency Plan, the method to be used for determining the magnitude of and for continually assessing the impact of the release of radioactive materials. (50-244/81-22-38)
- Develop a technique for making protective action recommendation based on a method which considers: source, elevation, and buildings in the vicinity of the release; the real-time characteristics of the release and actual meteorological information. (50-244/81-22-39)

- Identify technique to compensate for potential uncertainties associated with plume trajectories, and include the technical basis as an appendix to the emergency plan. (50-244/81-22-40)

Inspection Report No. 50-244/83-08, April 18-22, 1983

- 3.19 (Closed) 50-244/81-22-38. Include in the Emergency Plan the method to be used for determining the magnitude of and for continually assessing the impact of the release of radioactive materials. (Appendix A, item 19).

The inspectors reviewed paragraph 6.3.2, "Effluent Monitors" of Procedure No. SC-1, Radiation Emergency Plan", dated September 12, 1982, and noted that methods used for determining the magnitude of and for continually assessing the impact of the release of radioactive materials.

Inspection Report No. 50-244/83-25, November 15-18, 1983

- 3.06 (Closed) 50-244/81-22-39. Develop a technique for making protective action recommendations based on a method which considers: source, elevation, and buildings in the vicinity of the release; the real time characteristics of the release and actual meteorological information (Appendix A, item 14).

The inspector held discussions with licensee personnel, reviewed Procedure Nos. SC-420, Rev. No. 3, "Estimating Off Site Doses", SC-240, Rev. No. 2, "Protective Action Recommendations", and noted that a technique had been established for making protective action recommendations based upon appropriate available data.

Inspection Report No. 50-244/84-21, September 10-13, 1984

- 2.04 (Closed) 50-244/81-22-40. Identify techniques to compensate for potential uncertainties associated with plume trajectories and include the technical basis as an appendix to the emergency plan (Appendix A, Item 15).

The inspector held discussions with licensee personnel, reviewed a purchase order and noted that the licensee, in conjunction with Niagara Mohawk Power Corporation and New York Power Authority, is utilizing consultants to perform a "Lake Breeze Study" which is scheduled for completion by June 1985. Although this item is closed, Region I personnel will continue to evaluate the licensee's meteorological program.



Inspection Report No. 50-244/82-11, May 17-19, 1982

The inspector also examined records of meteorological data and calibration for 1981 and 1982 and determined that the system functioned properly with only a few losses of data. Surveillance of the system outputs was conducted daily to ensure minimum loss of data.

The inspector reviewed the location of the meteorological tower in relation to obstructions to the north (due to trees) and west (due to a spoils area) and determined, through measurement from an aerial photograph, that these obstructions would not have a significant effect on instrument response at the 33-foot elevation. In addition, the licensee has a backup tower approximately one-fourth mile away which could provide comparison to confirm indications at the primary tower.

No items of noncompliance were identified in this area.

Inspection Report No. 50-244/88-14

11.0 Meteorological (MET) Tower Sensor and Vent Monitor Calibration

11.1 The primary and two back-up MET towers were located and sensor calibration records for wind velocity and temperature sensors were reviewed as were data for electronic calibration. The most recent calibration was completed July, 1988. Calibration for monitors which may measure accident releases were also checked. The calibration for 1988 had been completed but the report had not been released.

Based on the above, calibration procedures are in place and a calibration schedule is being followed.

RG&E letter to the NRC, Maier to Crutchfield, June 11, 1982

III.A.2.2 REQUIREMENT: Complete modifications by October 1, 1982.

MET

DATA

RESPONSE: An RG&E letter dated July 1, 1981 provided a description and a schedule of implementation for an upgraded meteorological measurements and analysis program. The proposed long term meteorological system configuration shown on Figure 4 of the July 1 submittal, which was to use RG&E computers for data analysis, will not be implemented at this time. The proposed near term meteorological system configuration using an onsite minicomputer and offsite contracted computing facilities will remain as the planned configuration.

Our July 1, 1981 submittal requested an expeditious review of our proposed plan because the NRC requirements were not clearly defined and we had been informed that the requirements might be revised. We have recently received (May 27, 1982) an Emergency Preparedness Appraisal from Region I which includes at least an I&E review of our capabilities. We have not yet completed a detailed review of the appraisal. If any changes to our program are necessary we will develop an implementation schedule and submit it at an appropriate time.

Discussions with members of both NRR and IE indicate that some requirements are still in a state of flux and some may not yet be formulated. In either case a definitive implementation schedule cannot be laid out.

The meteorological measurements and analysis program being implemented by RG&E is, in our view, acceptable and will provide the information necessary for effective management of emergency situations to protect public health and safety.



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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

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