

May 16, 2002

Dr. Robert C. Mecredy
Vice President, Nuclear Operations
Rochester Gas and Electric Corporation
89 East Avenue
Rochester, New York 14649

SUBJECT: R. E. GINNA - NRC INSPECTION REPORT 50-244/02-09

Dear Dr. Mecredy:

On April 17, 2002, the NRC completed an inspection of your R. E. Ginna facility. The enclosed report documents the inspection findings which were discussed on April 17, 2002, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to your emergency preparedness program, and compliance with the Commission's rules and regulations, and with the conditions of your operating license. The inspector reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on a detailed review of the Emergency Plan (E-Plan) minimum staffing requirements for emergencies, we concluded that there was some question as to the consistency of your approved plan with federal guidance to meet on-shift and augmentation staffing responsibilities (Section 1EP3 of the enclosed report). This matter will be referred to our headquarters' EP staff for further review. Please report any factual errors on this matter, if any, and your assistance in the review of this issue will be appreciated.

The inspector also identified two issues of very low safety significance (Green). The first was a failure to correct long standing equipment and human performance issues concerning the public Alert Notification System, which potentially affects the system reliability. The second was the failure to implement an E-Plan commitment to utilize mobile loudspeakers to alert the transient population of an emergency. Both of these issues were determined to involve violations of NRC requirements. However, because of their very low safety significance and because they have been entered into your corrective action program, the NRC is treating these issues as non-cited violations, in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you deny these non-cited violations, you should provide a response with the basis of your denial, within 30 days of the date of this inspection report, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, D.C. 20555-0001; with copies to the Regional Administrator, Region 1; the Director, Office of Enforcement; and the NRC Resident Inspector at the Ginna facility.

Dr. Robert C. Mecredy

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Sincerely,

/RA/

Richard J. Conte, Chief
Operational Safety Branch
Division of Reactor Safety

Docket No: 50-244
License No: DPR-18

Enclosure: Inspection Report 50-244/02-09

Attachment 1: Supplemental Information

cc w/encl:

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T. Wideman, Director, Wayne County Emergency Management Office
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T. Judson, Central New York Citizens Awareness Network
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Dr. Robert C. Mecredy

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Distribution w/encl (VIA E-MAIL):

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No: 50-244

License No: DPR-18

Report No: 50-244/02-09

Licensee: Rochester Gas and Electric Corporation (RG&E)

Facility: R. E. Ginna Nuclear Power Plant

Location: 1503 Lake Road
Ontario, New York 14519

Dates: March 18 - March 22, 2002 (On-Site)
March 25 - April 12, 2002 (In Office)
April 15 - April 17, 2002 (On-Site)

Inspector: F. J. Laughlin, Operations Engineer

Approved by: Richard J. Conte, Chief
Operational Safety Branch
Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000244/02-09, on 03/18-04/17/2002; Rochester Gas & Electric; R. E. Ginna Nuclear Power Plant; Biennial Baseline Inspection of the Emergency Preparedness Program. Alert and Notification System Testing, Correction of Emergency Preparedness Weaknesses and Deficiencies.

The inspection was conducted by one regional specialist. This inspection identified two Green findings of very low safety significance, both of which were non-cited violations. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process (SDP)." Findings for which the SDP does not apply are indicated by "No Color" or by the severity level of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at <http://www.nrc.gov/reactors/operating/oversight.html>.

A. Inspector Identified Findings

Cornerstone: Emergency Preparedness (EP)

- Green. A non-cited violation of 10 CFR 50.54(q) and E-Plan Section 6.3.13 was identified, regarding the utilization of mobile loudspeakers to alert the transient population of an emergency. The licensee did not possess this equipment and was not ensuring that this notification function was being met.

This finding was of very low safety significance (Green) due to the fact that the sirens alone provided designed coverage for notification of the public in the ten-mile Emergency Planning Zone.

- Green. A non-cited violation of 10 CFR 50.54(q) and E-Plan Section 6.3.13 was identified, concerning the reliability of the Alert Notification System to fulfill its notification function within design objectives. Long standing equipment and human performance issues that affect ANS reliability have not been corrected, affecting the licensee's ability to fulfill the public notification function.

This finding was of very low safety significance (Green) based on the fact that the siren feedback system alerted the licensee to siren malfunctions, permitting the use of compensatory measures (i.e., route alerting), if necessary.

Report Details

1. REACTOR SAFETY

Cornerstone: Emergency Preparedness

1EP2 Alert and Notification System (ANS) Testing

a. Inspection Scope

The inspector reviewed Emergency Plan (E-Plan) commitments concerning the ANS (i.e., sirens) and the ANS Design Report which described the system capability. He also reviewed the system testing procedure, test schedule and test data to ensure compliance with commitments. He interviewed the licensee's Corporate Nuclear Emergency Planner and the ANS system engineer concerning the system design, testing, and maintenance. Lastly, the inspector observed ANS silent tests from the Monroe County 911 Center and the Wayne County Emergency Operations Center (one of the two activation locations for each county) to assess the facilities' readiness, test data collection methods, and familiarity of personnel with the test procedure.

b. Findings

The inspector determined that the licensee was not properly implementing the use of mobile loudspeakers for notification of the transient population in the emergency planning zone (EPZ) in accordance with the E-Plan. This finding had very low safety significance (Green) and was a non-cited violation of 10 CFR 50.54(q).

The E-Plan Section 6.3.13 states, in part, that the special needs of transient populations at locations such as motels, parks, and work camps will be addressed by utilizing mobile loudspeakers and direct facility notification. The licensee did not possess this equipment and stated that the counties provided this function. Based on letters from Monroe and Wayne Counties, both dated April 10, 2002, the counties use mobile loudspeakers for route alerting when sirens fail to sound, but the letter did not provide any information on the function of notifying the transient population upon siren actuation. Also, based on the inspector's review of the applicable section of the county plans, those plans do not address immediate notification of the transient population with one exception—the Wayne County plan indicated state notification of migrant labor camps.

This finding was more than minor because of the reduced capability for notifying the transient population in a radiological emergency. However, the inspector determined that the finding had very low safety significance (Green) because the off-site sirens alone provided 100% coverage for notification of the public in the ten-mile EPZ. (The inspector used MC 0609, App. B, Sheet 1, third path, Failure to Implement a Regulatory Requirement, Not a Failure to Meet a Planning Standard 50.47(b)(5)).

Contrary to 10 CFR 50.54(q) and E-Plan Section 6.3.13, the licensee did not ensure the capability that the notification function for transients upon siren actuation would be performed. This violation is being treated as a non-cited violation, consistent with Section VI.A.1 of the Enforcement Policy, issued May 1, 2000 (65FR25368). This issue was entered into the licensee's corrective action program as AR 2002-1017. **(NCV 50-244/02-09-01)**

1EP3 Emergency Response Organization (ERO) Augmentation Testing

a. Inspection Scope

The inspector reviewed the licensee's commitments for ERO staffing and emergency facility activation. He also reviewed the primary and backup ERO call-in procedures to assess their adequacy to support ERO augmentation. He reviewed quarterly call-in test results to assess the licensee's ability to staff facilities with sufficient responders in a timely manner. Staff depth for key ERO positions was reviewed to ensure that sufficient numbers of responders were available. The inspector reviewed a random sample of training records to ensure ERO qualifications were current. Lastly, the inspector reviewed the licensee's staffing level commitments to verify consistency with NUREG-0654, Table B-1, "Minimum Staffing Requirements for NRC Licensees For Nuclear Power Plant Emergencies."

b. Findings

GINNA E-Plan staffing requirements did not appear to meet the NUREG-0654, Table B-1, minimum staffing criteria. The licensee E-Plan reflects nine of ten on-shift staff and nine of 15 one-hour response (OHR) staff positions delineated in Table B-1. This constituted a potential inadequate plan in meeting planning standard 10 CFR 50.47(b)(2) concerning the adequacy of initial response and augmentation staff to respond to emergencies.

NUREG-0654 FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Nuclear Power Plants," Table B-1, describes the minimum staffing guidance for nuclear power plant emergencies. The table delineates ten on-shift positions and 15 OHR positions along with specified functions for each technical position. The inspector determined that licensee E-Plan requirements provided for nine of the ten on-shift positions and nine of the 15 OHR positions.

First, with respect to on-shift staffing, E-Plan, Table 4.1 and Figure 4.2A, prescribe the licensee's on-shift emergency organization. The inspector determined that this organization does not include a radio-chemistry/chemistry (Rad/Chem) technician prescribed by Table B-1. The licensee's Corporate Nuclear Emergency Planner (CNEP) stated that the on-shift health physics (HP) technician was qualified to perform Rad/Chem technician duties. The HP technician was also responsible to perform on-shift dose assessment, all duties requiring HP expertise such as radiological surveys, and was recently trained to perform as a backup control room communicator. The inspector noted an apparent overload in functions for one HP individual.

The inspector questioned the CNEP as to whether the licensee's organization had ever included a Rad/Chem technician or if the position had been deleted through an E-Plan change. The CNEP stated that the on-shift organization was increased from eight to nine positions in 1982, has been that way since ever since, and never included a Rad/Chem technician. He also produced two NRC documents which addressed these staffing issues, as follows:

- NRC Letter, dated May 25, 1983, concerning an E-Plan upgrade to meet new EP requirements per the NUREG-0737 TMI Action Plan. This letter stated, in part, that onsite and offsite emergency preparedness was adequate, and that the E-Plan had been upgraded to meet the new rule.
- NRC Inspection Report 50-244/84-21, dated December 27, 1984, which referenced the closure of Open Item 50-244/81-22-04, concerning the licensee's emergency organization. That report stated that the open item was closed based on "an appropriate emergency organization had been documented."

Therefore, the licensee concluded that their emergency organization as described in the Emergency Plan was adequate.

Second, with respect to one hour responders, E-Plan Figures 4.2B and 4.2C prescribed the licensee's augmentation emergency organization, i.e., responders which staff the technical support center (TSC) and emergency operations facility (EOF). This organization is comprised of 13 OHR positions and others which have no specified time commitments for arrival on site after an emergency. The inspector determined that nine of the 13 OHR personnel could fill the 15 positions prescribed by Table B-1. Specifically, there was a question on how responders were to fill the following OHR positions/functions:

- one of two communicators
- HP technician for onsite surveys
- radiological waste operator
- electrical maintenance/instrument & control technician
- two HP technicians for in-plant protective actions

Also, 30-minute responder functions, such as for core-thermal hydraulics, I&C technician, and another communicator, were not addressed.

Further, the inspector concluded that five of the nine OHR personnel were management personnel who were filling positions designated for lower level technicians. This raised the question as to whether there were sufficient numbers of technician-level personnel to adequately respond to a radiological emergency. The inspector noted that some technician-level personnel had responded in recent call-in tests (i.e., call in to indicate fitness for duty and estimated time of arrival, but not actually travel to site) with estimated travel times which indicated that they could reach the site within one hour of being called, but there was no E-Plan requirement to do so.

The inspector also noted that the licensee did not use a duty roster to ensure the availability of response personnel to fill emergency positions. The call-in procedure required that qualified responders be called until all the positions are filled. This is a potential problem in that there is no formal process to ensure that there are sufficient responders in the vicinity to respond to emergencies, further degrading the augmentation capability. This was a problem during the August 10, 2001 call-in test when the TSC Emergency Coordinator position was not filled within one hour due to the three qualified responders being out of the area or away from the telephone.

The inspector questioned the CNEP concerning specific E-Plan changes which occurred between Revision 0, dated July, 1984, and Revision 20 (the current revision), dated March, 2001. The CNEP provided documentation which showed when these changes were made, including:

- NRC Inspection Report 50-244/90-15, dated October 17, 1990, which documented that the NRC had reviewed E-Plan, Revision 8. That revision included wording concerning a change in TSC activation time, formerly "Adequate staffing should be onsite within 30 minutes" to "the onsite Emergency Response Organization...shall be onsite within one hour of declaration of the Alert."
- NRC Inspection Report 50-244/91-28, dated January 31, 1992, which documented that the NRC had reviewed E-Plan, Revision 9, which further clarified the ERO one-hour response time.

Licensee E-Plan staffing requirements were inconsistent with those prescribed in NUREG-0654, a licensing standard used by the NRC staff in order to evaluate a plan meeting planning standard 10 CFR 50.47(b)(2). This planning standard states, in part, that adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, and timely augmentation of response capabilities is available. This issue is unresolved pending the referral to NRC headquarters for further review of licensee staffing requirements, certain changes to those requirements since initial NRC approval, and a determination by NRC that those requirements are adequate for emergency response. **(URI 50-244/02-09-02)**

1EP4 Emergency Action Level (EAL) and Emergency Plan Changes

a. Inspection Scope

The inspector sampled recent E-Plan and implementing procedure changes to verify that the changes had not reduced the effectiveness of the E-Plan. There were no recent EAL changes to review. The inspector also reviewed the licensee's 10 CFR 50.54(q) review process to verify that E-Plan changes received the appropriate level of review.

b. Findings

No findings of significance were identified.

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies

a. Inspection Scope

The inspector reviewed Action Reports (ARs) documenting corrective actions to assess the licensee's ability to identify and resolve EP issues, and determine if corrective actions were effective to prevent recurrence. The following ARs were reviewed in depth:

- 2002-0878 Unsuccessful Silent Test
- 2002-0661 Monroe County Silent Test Failure
- 2002-0126 Investigate Siren System Configuration Controls
- 2001-1755 Sparking Observed on Siren #29
- 2001-1479 Siren #69 Out of Service
- 2001-1438 One-Hour Response Positions Not Filled
- 2001-1181 Identified Trend on Siren #44
- 2001-1150 Identified Trend on Siren #33
- 2001-0789 Siren Failures During 5/10/01 Siren Activation
- 2001-0573 Sirens Failed During Modification
- 2001-0479 Community Alert Network (CAN) System Did Not Activate During Routine Test
- 2000-1351 ANS Performance Indicator Has Changed to White
- 2000-0672 Ginna Siren Silent Test Not Performed
- 2000-0630 Nuclear Emergency Response Plan (NERP) Group Page Did Not Activate During CAN Test
- 2000-0531 Deficiencies in CAN Activation During Testing
- 2000-0479 Failure by Counties To Run Required Siren Test
- 2000-0100 Wayne County Unable To Activate Siren Silent Test on 6/26/00

The inspector reviewed the 2002 (in draft) and 2001 10 CFR 50.54(t) EP audits to assess whether the audits met the requirements and determine if any repeat issues were identified. He also interviewed both audit team leaders to discuss finding details. Lastly, the inspector interviewed the site corrective action coordinator to discuss the prioritization and completion of corrective actions.

b. Findings

Uncorrected ANS equipment and human performance issues resulted in a non-cited violation of 10 CFR 50.54(q) for failure to maintain the ANS in a manner to ensure secure, reliable control. The inspector assessed this issue as having very low safety significance (Green).

The Ginna ANS consisted of 96 sirens, 72 in Wayne County and 24 in Monroe County. The inspector found that there were ANS equipment performance issues which affected ANS reliability, were not completely understood, and have not been adequately corrected. First, the siren controllers have difficulty communicating properly. The controllers and sirens communicate with each other by radio waves. For security reasons, the controllers send a special code to the sirens to prevent unofficial activation. This code frequently changes so it can't be duplicated. When one controller sends the code, the remaining four must synchronize with the sending controller so that they are

all using the same code. However, sometimes one or two controllers do not correctly receive the code. Thus when they try to communicate with the sirens, they send out the wrong code and the sirens do not respond properly. This was apparently the case during the March 26, 2002, Monroe County silent test failure event when all 24 sirens failed the test (Action Report [AR] 2002-0661).

Secondly, the licensee experienced problems with radio frequency congestion. The ANS operated on a single radio frequency. The system was designed to wait for the frequency to be clear before a controller sends a signal. Competition from other radio users as well as other radios in the siren system will occasionally cause an extended set of transmissions to be missed, or the controller will time out and fail to transmit the intended message. This resulted in the occasional failure of a siren or group of sirens to receive a message from the controller (synchronize, test, or activate), or to report back its current status.

The licensee was aware that the radio frequency congestion problem existed, but has been hesitant to address it due to their belief that it was not cost effective. For example, this problem was one potential cause of the January 21, 2002, Monroe County silent test failure (23 of 24 sirens failed), but the licensee concluded that to identify the root cause was not cost effective so the associated action report was closed with no further action (AR 2002-0126). This was also the suspected cause of the April 8, 2002 unsuccessful silent test event (96 of 96 sirens failed), when siren #22 malfunctioned and was continuously transmitting on the system frequency. The licensee was conducting a full root cause evaluation for this event, the results of which were not available at the conclusion of this inspection. A full activation test of the siren system is scheduled for May 9, 2002.

Additionally, the corrective actions taken in response to AR 2000-1351, dated 7/15/00, for the ANS PI changing to WHITE, for various human performance inadequacies, have not been effective in preventing recurrence. For example, AR 2002-0127, dated 1/21/02, for untimely notification of siren silent test failure, revealed the following recurring human performance issues with respect to AR 2000-1351:

- Test results were not faxed to EP per procedure EPG-1.
- EP did not follow up with a call to Monroe County when fax was not received per EPG-1.
- EP was not notified of siren failure >75% per procedure EPG-2.
- The Supervisory Control and Data Acquisition (SCADA) technician was notified of the problem, but no attempt was made to perform the silent test from the alternate location per EPG-2 due to the fact that it (Cobb's Hill Radio Center) was not staffed because of the Martin Luther King holiday.
- This resulted in no valid successful test on the scheduled date of 1/21/02. A 50.72 report was made to NRC for siren failure, but it was a approximately 16 hours late.

AR 2002-0661, dated 3/26/02, for Monroe County Silent Test Failure, revealed the following recurring human performance issues with respect to AR 2000-1351:

- The technician performing the test was inadequately trained, used a laminated job aid instead of the procedure to perform the test, and was not familiar with the proper test results.
- No test was performed from the alternate location per EPG-2.
- EP was not notified of siren failure > 75% per EPG-2.
- The SCADA technician was not familiar with system performance and thought a successful test was performed.
- Test results were faxed to EP, but no one recognized that the test was a failure.
- This again resulted in no valid successful test on the scheduled date of 5/26/02. A 50.72 report, approximately 23 hours late, was again made to the NRC.

The equipment and human performance issues affecting ANS reliability and availability on multiple sirens were considered more than minor because they impact the licensee's ability to fulfill the system's design objective to complete initial alerting of the affected population in the plume exposure pathway within 15 minutes, a credible impact on safety. Degraded ANS reliability challenges the route alerting process to meet the public notification function. However, the inspector determined this issue was of very low safety significance (Green) based on the fact that the siren feedback system alerted the licensee to siren malfunctions, permitting the use of compensatory measures (i.e., route alerting), if necessary. (The inspector used MC 0609, App. B, Sheet 1, third path, Failure to Implement a Regulatory Requirement, Not a Failure to Meet a Planning Standard 50.47(b)(5)).

10 CFR 50.54(q) requires that licensees follow and maintain in effect emergency plans which meet the standards in 50.47(b) and the requirements in Appendix E. E-Plan Section 6.3.13 requires that the ANS system complete initial alerting of the affected population within the plume exposure pathway within 15 minutes of notifying the State and local governments, and that the system be activated by a radio signal and digital encoding system to ensure secure, reliable control. Contrary to the above, long standing ANS equipment and human performance issues which affect ANS reliability have not been corrected, affecting the licensee's ability to fulfill the public notification function properly. This violation is being treated as a non-cited violation, consistent with Section VI.A.1 of the Enforcement Policy, issued May 1, 2000 (65FR25368). This issue was entered into Ginna's corrective action program under various ARs including 2002-0126, 0127, 0661, and 0878. **(NCV 50-244/02-09-03)**

4. OTHER ACTIVITIES (OA)

4OA1 Performance Indicator (PI) Verification

a. Inspection Scope

The inspector reviewed the licensee's process for identifying the data utilized for the three emergency preparedness PIs, which are: 1) Drill and Exercise Performance (DEP), 2) Emergency Response Organization Drill Participation (ERO), and 3) Alert and Notification System Reliability (ANS). The inspector also reviewed PI data from the second quarter of 2001 through the first quarter of 2002 using the criteria of NEI 99-02, Revision 2, *Regulatory Assessment Performance Indicator Guideline*. The inspector verified that the raw test data was consistent with the data reported to the NRC.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

On April 17, 2002, the inspector presented the inspection results to Dr. Robert Mecredy and other members of the R. E. Ginna staff. The licensee acknowledged the findings and stated that they would provide additional information recently found that was relevant to the findings.

Subsequent to the exit meeting, the inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

ATTACHMENT 1 - SUPPLEMENTAL INFORMATION

a. Key Points of Contact

R. Davis, QA Audit Team Leader
 T. Harding, Licensing Engineer
 J. Jackson, Electrical Design Engineer (Sirens)
 D. Kuhn, QA Audit Team Leader
 R. Mecredy, Vice President, Nuclear Operations
 J. Pacher, Manager, I&C/Electrical Engineering
 P. Polfleit, Corporate Nuclear Emergency Planner
 R. Watts, Manager, Nuclear Training
 J. Widay, Vice President and Plant Manager

b. List of Items Opened, Closed, and DiscussedOpened

URI 2002-09-02 Licensee E-Plan staffing commitments were inconsistent with those prescribed in NUREG-0654, which was a potential failure to meet planning standard 10 CFR 50.47(b)(2).

Opened and Closed

NCV 2002-09-01 Failure to utilize mobile loudspeakers for notification of the transient population.

NCV 2002-09-03 Failure to correct long standing equipment and human performance issues which affect ANS reliability.

c. List of Documents Reviewed

EPG-1, Revision 9, "Emergency Planning Guideline"
 EPG-2, Revision 4, "Operation and Testing of the Ginna Sirens"

d. List of Acronyms

ANS	Alert and Notification System
AR	Action Report
CAN	Community Alert Network
CNEP	Corporate Nuclear Emergency Planner
DEP	Drill and Exercise Performance
EAL	Emergency Action Level
EOF	Emergency Operations Facility
ERO	Emergency Response Organization
PI	Performance Indicator
NERP	Nuclear Emergency Response Plan
OHR	One Hour Response
TSC	Technical Support Center