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 FACIL:50-244 Robert Emmet Ginna Nuclear Plant, Unit 1, Rochester G 05000244
 AUTH.NAME AUTHOR AFFILIATION
 WHITE,L.D. Rochester Gas & Electric Corp.
 RECIP.NAME RECIPIENT AFFILIATION
 ZIEMANN,D.L. Operating Reactors Branch 2

SUBJECT: Responds to NRC 800214 ltr requesting refs for 35 SEP
 topics,Forwards internal memos re review.

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	13 ENGR BR	1 1	14 REAC SFTY BR	1 1
	15 PLANT SYS BR	1 1	16 EEB	1 1
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MAR 27 1980

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1. The first part of the document is a letter from the President of the United States to the Congress, dated January 1, 1863. The letter is signed by Abraham Lincoln and is addressed to the Senate and House of Representatives. The letter is a copy of the original and is signed by the President's Secretary, William A. Rorer.

2. The second part of the document is a letter from the President of the United States to the Congress, dated January 1, 1863. The letter is signed by Abraham Lincoln and is addressed to the Senate and House of Representatives. The letter is a copy of the original and is signed by the President's Secretary, William A. Rorer.

3. The third part of the document is a letter from the President of the United States to the Congress, dated January 1, 1863. The letter is signed by Abraham Lincoln and is addressed to the Senate and House of Representatives. The letter is a copy of the original and is signed by the President's Secretary, William A. Rorer.



ROCHESTER GAS AND ELECTRIC CORPORATION • 89 EAST AVENUE, ROCHESTER, N.Y. 14649

LEON D. WHITE, JR.
VICE PRESIDENT

TELEPHONE
AREA CODE 716 546-2700



March 21, 1980

Director of Nuclear Reactor Regulation
Attention: Mr. Dennis L. Ziemann, Chief
Operating Reactors Branch No. 2
U.S. Nuclear Regulatory Commission
Washington, DC 20555
Subject: References for SEP Topics
R.E. Ginna Nuclear Power Plant
Docket No. 50-244

Dear Mr. Ziemann:

By letters dated February 14, 1980, you requested that we provide references for 35 Systematic Evaluation Program topics. One of the letters requested that we provide a response for five topics within 30 days while second letter requested a response for the 35 topics within 90 days.

We have performed a preliminary review of our files relating to the SEP review. References for many of these topics have previously been provided to the staff. These are merely identified in Attachment A. Other references not previously transmitted are also identified in Attachment A, and enclosed for your use.

Given the large number of topics for which references were requested, the efforts currently being requested by the NRC on safety issues of greater significance than that represented by many of these SEP topics, and the efforts required for successful completion of our forthcoming refueling and maintenance outage, we are not able to provide at this time any reference information beyond that reflected in the Attachment.

We have noted that many of the topics for which references have been requested have been under active review at the NRC for some time, with some having been the subject of site visits. Further, through discussions with members of the NRC Staff, we understand that preliminary safety assessments have been prepared for some of these topics. It, therefore, makes sense, and would greatly reduce the level of our efforts, if the Staff would provide a listing of references that it has already identified with all further requests for information. If this is done, we can focus our efforts more clearly.

Very truly yours,

L. D. White, Jr.

4035/11

Attachment A
Enclosures

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Attachment A

II-1.A Exclusion Area Authority and Control

The following references were provided informally on August 24, 1978:

1. Ginna FSAR, p. 2.2-1.
2. NRC Safety Evaluation Report, June 19, 1969, p. 24.
3. NRC Safety Evaluation Report, January 20, 1972, p. 3.
4. FSAR Figure 2.2-3.
5. Environmental Report (ER) Figure 2.2-1.

II-1.B Population Distribution

1. ER, Section 2.2
2. NRC Final Environmental Statement (FES), Section 2.2.

II-1.C Potential Hazards

1. Transmittal of excerpts from the Ginna Radiation Emergency Plan (SC-1) and site prints showing location of gas facilities within 3 miles of Ginna. Sent to Mr. Falk Kantor on 12/5/79.

II-2.A Severe Weather Phenomenon

1. FSAR Ch. 2

II-2.B Onsite Meteorological Measurements Program

In response to discussions about the NRC's preliminary assessments, the following references were provided informally on July 5, 1979:

1. FSAR, Section 2.7
2. RGE report submitted December 20, 1973, response to question 8.
3. RGE letter dated October 25, 1976

II-3.C Safety Related Water Supply

1. The screenhouse, intake, and discharge canals, and armor stone wall physical arrangement and design criteria were discussed during the site hazards site visit of 9/6/78.

III-4.A Tornado Missiles

1. FSAR Appendix 14A
2. NRC SEP Site Hazards site visit, September 6 and 7, 1978 w/prints sent per L. Bell request.
3. 2/5/79 phone conversation Fletcher/Wrobel (enclosed)
4. 3/15/79 phone conversation Fontecilla/Wrobel (enclosed)
5. SF Pool layout to Larry Bell

III-4.D Site Proximity Missiles

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V-6 Reactor Vessel Integrity

1. FSAR
2. Technical Specification
3. RGE letter dated July 27, 1978
4. NRC NUREG 0569, December 1979
5. NRC letter dated March 5, 1980

VI-7.A.1 ECCS Reevaluation...

As noted in our letter of May 16, 1979, the NRC Staff issued their Safety Evaluation and closed this issue on May 1, 1978.

VI-7.A.3 ECCS Actuation System

1. FSAR Ch. 7

VI-7.B ESF Switchover

1. NRC letter dated October 26, 1978
2. NRC letter to B. Snow of 12/17/78
3. Telecopy from NRC 1/22/79
4. Telephone conversation RGE-NRC of 1/26/79 (enclosed)
5. Informal submittal to John Olshinski 3/16/79
6. RGE letter dated November 22, 1979

VI-7.C.1 Appendix K - EI and C Rereviews

References for this topic were provided informally on August 16, 1978:

1. NRC Safety Evaluation issued May 14, 1975 (this references a number of earlier RGE submittals)
2. RGE letter dated May 20, 1975.
3. RGE letter dated May 30, 1975.
4. RGE letter dated June 16, 1975.
5. NRC letter dated July 3, 1975.

VI-7.C.3 PWR Loop Isolation Valves

As identified in our letter of May 16, 1979, Ginna does not have loop isolation valves. This topic should be completed.

VI-7.F Accumulator Isolation Valves

1. Ginna Technical Specifications
2. NRC Safety Evaluation issued May 14, 1975.
3. 12/18/79 and 1/11/80 phone conversations with F. Farmer of EG&G (enclosed)

VI-8 Control Room Habitability

1. FSAR, Section 14.3.5
2. NRC SEP Site Hazards site visit, September 6 and 7, 1978.
3. 1/31/79 telephone conversation - Bellamy/Wrobel (enclosed)
4. 3/15/79 telephone conversation - Fontecilla/Wrobel (enclosed)
5. NRC site visit 5/22/79 (notes enclosed)

VI-10.A Testing of Reactor Trip System and ESF

1. Technical Specifications

VII-1.A Isolation of Reactor Protection System...

1. NRC letter dated October 26, 1978
2. RGE letter dated November 22, 1978

VII-2 ESF System Control Logic and Design

1. NRC letter dated October 26, 1978
2. RGE letter dated November 22, 1978

VIII-2 Onsite Emergency Power Systems - Diesel Generator

1. RGE report submitted December 20, 1973, response to question 9.
2. NRC letter dated March 29, 1977.
3. RGE letter dated May 16, 1977.
4. RGE letter dated November 16, 1977.
5. NRC letter dated April 3, 1978.
6. RGE letter dated April 27, 1978.
7. NRC letter dated September 18, 1978.

VIII-4 Electrical Penetrations of Reactor Containment

1. NRC letter dated December 8, 1978.
2. RGE letter dated April 12, 1979.

IX-4 Boron Addition System

1. NRC Safety Evaluation issued May 14, 1975.

XV Accident Analysis

Please note that the NRC has completed their initial review of the Ginna Ch. 14 Design Basis Events (DBE's) and sent a request for additional information to RG&E dated 2/26/80.

The following references generally discuss each of the transients and accidents analyzed for Ginna and have been discussed with the NRC Staff. The references provided under the individual topics are in addition to the following:

1. FSAR, Chapter 14.
2. NRC Safety Evaluation Report, June 19, 1969.
3. Technical Supplement Accompanying Application to Increase Power, February 2, 1971.
4. NRC Safety Evaluation Report, January 20, 1972.
5. Technical Supplement Accompanying Application for a Full Term Operating License, August 1972.
6. Reload submittals and related NRC reviews. RGE submittals dated:
 - a. February 17, 1971
 - b. March 30, 1972
 - c. June 12, 1973
 - d. September 21, 1973
 - e. March 27, 1975
 - f. January 4, 1978
 - g. December 20, 1979

XV-3 Loss of External Load...

-

XV-4 Loss of Non-Emergency A-C Power to the Station Auxiliaries

-

XV-5 Loss of Normal Feedwater

-

XV-6 Feedwater System Pipe Breaks Inside and Outside Containment

1. RGE letter dated May 24, 1974
2. NRC Safety Evaluation issued August 24, 1979

XV-7 Reactor Coolant Pump Rotor Seizure...

-

XV-8 Control Rod Misoperation

-

XV-9 Startup of an Inactive Loop...

Information relative to SEP Topic IV-1.A, "N-1 Loop Operation is relevant to this topic. References are:

1. NRC Letter 8/17/78
2. RGE Letter 9/5/78
3. NRC Letter 2/6/79
4. RGE Letter 2/21/79
5. NRC Letter 5/29/79

XV-10 CVCS Malfunction...

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XV-11 Inadvertent Loading and Operation of a Fuel Assembly in an Improper Position (BWR)

This topic is not applicable to Ginna and was deleted from review by NRC letter dated April 16, 1979.

XV-12 Spectrum of Rod Ejection Accidents

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XV-14 Inadvertent Operation of ECCS...

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XV-15 Inadvertent Opening of a PWR Pressurizer Safety/Relief Valve...

1. (See also LOCA analyses)
2. See WCAP-9600 and other post-TMI generic W analyses

XV-19 Loss of Coolant Accidents...

(See also SEP topics VI-7.A.1 and VI-7.A.3)

XV-19 Loss of Coolant Accidents
(doses)

1. RGE report submitted December 20, 1973, response to question 10.

Rochester Gas and Electric Corporation

Inter-Office Correspondence

February 5, 1979

SUBJECT: SEP Topic III-4.A, Tornado Missiles

TO: K.W. Amish
L.D. White, Jr.
J.E. Arthur
L.S. Lang

R.E. Smith
B.A. Snow
R.C. Mecredy
W. Backus

Mike Fletcher of the NRC's SEP Branch called to lay some preparatory groundwork for his review of the tornado missile protection we have at Ginna. He is concerned only with the system aspects (what is needed following various events which could be caused by a tornado), not the actual meteorology. It is up to us to argue with other NRC personnel regarding the improbability of having a 360 mph tornado at the site.

Based on his review of the Ginna layout, he is concerned with certain potential problems:

- 1) Loss of greenhouse accident (either the Service Water Pumps or buses 17 and 18 or both). *2/6/79 - CONVERSATION REGARDING APPLICABILITY OF GREENHOUSE FIRE ANALYSIS TO THIS TORNADO LOSA. PROMISED TO SEND MIKE COPY OF OUR RESPONSE TO THE NRC.*
- 2) SG "B" steamline outside the containment and the Intermediate Building.
- 3) A spectrum of tornado missiles doing various amounts of damage to the RWST (above the operating floor). How much safety equipment gets flooded? Can either bus 14 or bus 16 survive?
- 4) Loss of both diesel generators.
- 5) Damage to the CCW system.
- 6) Loss of offsite power.

One of the most critical concerns is the combination of failures which could be postulated to occur from a single tornado (a tornado can carry more than one missile). This is an area where the NRC has not yet provided any guidance. It does appear, however, that present regulatory guidelines do not include an additional random single failure with the tornado.

George Wrobel
George Wrobel

SEP Topic III-4.A, Tornado Missiles

There is apparently a dramatic unexplained difference in regulatory position regarding the recurrence interval which is considered suitable as a design basis among various "events". For example, the probability of exceeding an SSE at a particular site is generally taken as about $10^{-4}/RY$. Even more importantly, the probability of a core melt from any cause (granted, with a high degree of uncertainty) is about $.5 \times 10^{-4}/RY$ (see p. I-8 of NUREG-0396). For a design basis tornado, however, Regulatory Guide 1.76 specifies that the tornado characteristics (windspeed, pressure drop) should be comparable to those associated with a probability of exceedance of $10^{-7}/RY$, two orders of magnitude lower than the other design basis events. There is no visible justification for such a large discrepancy. Therefore, it is proposed that the design basis tornado characteristics be evaluated on an equivalent basis with other design basis events (e.g., $DBT = 10^{-4}/RY$).

Further, the definition of "tornado" regions which is provided in Regulatory Guide 1.76 should be revised. For example, Ginna Station, which is located in an area of the country not particularly susceptible to tornado damage, is categorized as being in the same tornado hazard area as Kansas. Experience would argue otherwise. To correct this deficiency, we believe that the tornado regions of the country should be defined more clearly than is done in Regulatory Guide 1.76.

By incorporating these two changes, i.e., using a probability of exceedance comparable to other design basis events and more clearly delineating tornado regions of the country, we believe that substantial tornado protection can be provided without expending unnecessary resources.

Design Office

Rochester Gas and Electric Corporation

Inter-Office Correspondence

March 15, 1979

SUBJECT: SEP Topics II-3.B - Design Basis Flooding; III-4.A - Tornado Missiles; and VI-8 - Control Room Habitability

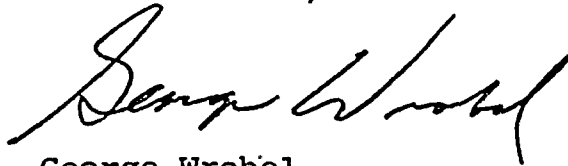
TO:	L.D. White, Jr.	G.J. Daniels
	J.E. Arthur	J. Noon
	L.S. Lang	W. Backus
	R.E. Smith	D.L. Filkins
	B.A. Snow	R.W. Eliaz
	J.C. Hutton	A.G. Goetz
	R.C. Mecredy	E.K. Voci
	J.N. Covey	

Received a Friday afternoon "think-about-this-over-the-weekend" call from Herb Fontecilla of the NRC's SEP Branch. He was concerned about the resolution of a number of "Site Hazards" topics, which the NRC had reviewed during a site visit on September 9-10, 1978. Specifically:

- 1) Dr. Ron Bellamy will visit Ginna on Thursday, March 22 to evaluate the potential danger that the ammonia tank outside the AVT building poses to the CR operators. His preliminary very conservative estimates show the consequences to be unacceptable under present guidelines. Dr. Bellamy will also wish to see the CR ventilation system. It appears that, in the event of a LOCA, it will be required that an operator set the CR ventilation system in the 25% outside air intake mode, in order to maintain the control room at a positive pressure to prevent radioactive atmosphere infiltration.
- 2) Based on present-day conservative Design Basis Flood (DBF) and Probable Maximum Precipitation (PMP) levels, it is estimated that the Service Water Pumps, Diesel Generators, and other low-lying pieces of equipment could be flooded (flood levels of 8 ft. above grade!). They are presently trying to justify lower, more realistic flood levels.
- 3) Tornado missiles, if postulated, could damage some safety-related equipment. Particularly of concern are the Service Water Pumps, RWST, and relay room. I replied that we were presently investigating shutdown methods in the event a fire damaged the screenhouse or the relay room. These shutdown methods should also be applicable in the event of tornado missile damage to these same areas. He is interested in our resolution of these fire shutdown methods.

As for the RWST flooding, we are to evaluate the capability of drains in the auxiliary building to handle this potential flooding.

I did mention that since the RHR pumps are in the lowest section of the auxiliary building, we could probably not take credit for them in attaining cold shutdown. We could either maintain extended safe hot shutdown, or gradually cool down and use an alternative cold shutdown method (such as steam generator cold shutdown or letdown heat exchangers). These methods would take many days; however, the plant would be in a safe condition at all times. Although non-committal, Mr. Fontecilla did encourage us to provide any such information which would help resolve these issues.



George Wrobel

GW/sh

Rochester Gas and Electric Corporation

Inter-Office Correspondence

January 26, 1979

SUBJECT: NRC Telephone Call
January 22, 1979

TO: K.W. Amish
L.D. White, Jr.
J.E. Arthur
L.S. Lang
B.A. Snow

Jim Shea, Knute Anderson, and John Olshinski called to discuss a review that the NRC is performing on LOCA switchover from the injection phase to the recirculation phase. Due to a concern raised by Seabrook that the RWST may not have sufficient water to provide from enough time for the switchover or for proper flow during recirculation. The Staff is trying to complete their review by Feb. 2, 1979. To facilitate their review, they sent us a list of information that they want us to provide. They also asked us to determine whether we have a problem.

George Wrobel and Joe Larizza had already been reviewing the concern raised by Seabrook based on a Westinghouse letter of December 19, 1978 (Seabrook notified the NRC on Sept. 28) and based on the review, it doesn't appear that we have a problem.


Robert C. Mecredy

RCM/sh

xc: G.J. Wrobel
G.E. Larizza

Rochester Gas and Electric Corporation

Inter-Office Correspondence

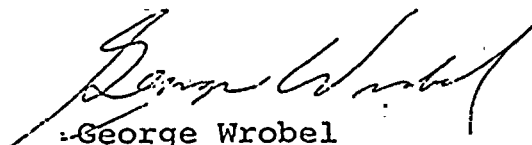
January 31, 1979

SUBJECT: SEP Topic VI-8, Control Room Habitability

TO:	L.D. White, Jr.	R.C. Mecredy
	J.E. Arthur	J.C. Hutton
	L.S. Lang	E.K. Voci
	R.E. Smith	D.L. Filkins
	B.A. Snow	

Ron Bellamy of the Accident Analysis Branch - NRC called me to get additional information regarding onsite storage of toxic chemicals (ammonia) and the control room ventilation system. I gave him the following information:

- 1) The control room could be pressurized following a LOCA using a damper configuration which would allow about 400 cfm of outside air into the control room via the charcoal filter. (The 400 cfm estimate was from Walt Rabuse of Catalytic.) I indicated that it was noted during the NRC's Site Hazards Site Visit that there are presently no plant procedures to use this damper configuration post-LOCA. Dr. Bellamy indicated that his calculations showed that post-LOCA control room doses would not meet GDC 19 limits (5 rem course-of-accident), and that a procedure would have to be written for post-LOCA implementation. It is important to note that Dr. Ballamy's calculations assume 2048 cfm of "dirty" air (inc. 400 cfm of outside air) being recirculated through the charcoal filter following a LOCA.
- 2) I provided the location and quantity of onsite ammonia. This indicated 30 weight percent liquid ammonia drums stored on the 253' level (NW corner) of the turbine building, and a 500 gallon anhydrous ammonia tank located just outside the AVT building. Although the 55 gallon drums appear to be no problem from a toxic chemical release into the control room standpoint, the 500 gallon tank; being much closer; would require a closer evaluation.


George Wrobel

GW/sh

xc: C.H. Peck

George Mabel

Rochester Gas and Electric Corporation

Inter-Office Correspondence

March 28, 1979

SUBJECT: NRC Site Visit of 3/22/79 - Ammonia Storage Tank -
SEP Topic VI-8

TO: K.W. Amish
L.D. White, Jr.
J.E. Arthur
L.S. Lang
R.E. Smith
B.A. Snow
J.C. Hutton
R.C. Mecredy
J. Noon
C.H. Peck
SEP Owners' Group

Ron Bellamy of the NRC's Accident Analysis Branch visited Ginna on March 22, 1979 to evaluate the potential effects that failure of the NH₃ tank could have on the control room habitability. He was concerned that the concentration of ammonia in the control room could exceed 300-500 ppm very rapidly, before the operators could either shut off outside air and/or don their Seat Air-Paks.

A physical location review of the Ginna layout revealed the following:

1. It appeared that the wind blew predominantly away from the control room intake.
2. There was very little wind on the control complex roof. There was also very little "suction" at the intake duct.
3. The intake was at least 50 feet above the tank level. Also, the path from the tank to the intake was not a direct line, but included a number of corners.
4. The tank averages about 50% full.

5. The air exchange rate in the control room is higher than 1/hour. A reasonable "average" estimate should be provided by to the NRC before the end of March.

Based on this information, Dr. Bellamy will rerun his computer program to evaluate any possible concerns. It is not expected that there would be anything more than an ammonia detector required to complete this topic; it is possible that the system as-installed may even meet the regulatory criteria for this SEP Topic. In any event, it appears that any potential danger is of small enough probability/consequence that no hardware changes would be required until the integrated SEP assessment (1981?).

George Wrobel /sh

George Wrobel

GW/sh

12/18/79

Frank Farmer of EG+G is working on SCL
Topic VI-7.F, Accumulator Isolation. Based
on looking at our drawing 10905-287 he thinks
we have a red & green light for each valve on the
main control board. ~~The~~ The SCL requires
redundant position indication. The ~~question~~ question
is whether we have more in the way of position indication
than he currently knows about.

He'd like an answer yesterday. I told him we might
get to it before the 1st of the year but that we
were extremely busy with TMI response.

His telephone no. is 208-526-9711

Bob Mearns

Talked with Farmer 11/11/80; told
him that we had red and green
& lights (+ white for safeguards
position) for these valves; these
signals are derived from limit
switches in the Semitoron
operator control room housing (info
from Ron Joly).

Gene W. Wood