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SUBJECT: Forwards response to Generic Ltr 89-13 re svc water problems affecting safety-related equipment.

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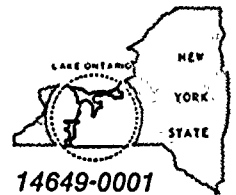
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January 29, 1990

U.S. Nuclear Regulatory Commission
Regional Administrator, Region I
475 Allendale Road
King of Prussia, PA 19406

Subject: Response to Generic Letter 89-13, Service Water System
Problems Affecting Safety-Related Equipment
R.E. Ginna Nuclear Power Plant
Docket No. 50-244

Dear Mr. Russell:

In response to Generic Letter 89-13, please find attached summaries of proposed programs that Rochester Gas and Electric intends to implement to satisfy each of the five recommendations of subject letter. You will note that several of these programs have already been initiated.

Very truly yours,

Robert C. Mecredy
General Manager
Nuclear Production

Subscribed and sworn to before me
on this 29th day of January, 1990.

SAMUEL H. BROWNE
NOTARY PUBLIC, State of New York
Registration No. 4917041
Qualified in Monroe City, / Wayne Cty.
My Commission Expires Dec. 29, 1991

CJM\076
Attachment

Att No P340957179

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Ginna Senior Resident Inspector

ATTACHMENT
RESPONSE TO GENERIC LETTER 89-13

This response to the requirements of NRC Generic Letter 89-13 describes the intent of RG&E to implement Recommendations I-V or to establish equally effective courses of action.

RECOMMENDATION I
ADDRESSING THE CONCERNS OF GENERIC ISSUE 51

Item A

The intake structure should be visually inspected, once per refueling cycle, for macroscopic biological fouling organisms (for example, blue mussels at marine plants, American oysters at estuarine plants, and Asiatic clams at freshwater plants), sediment, and corrosion. Inspections should be performed either by scuba divers or by dewatering the intake structure or by other comparable methods. Any fouling accumulations should be removed.

Response

Ginna underwater service water structures and equipment have periodically been visually inspected throughout the operating history of the plant. Procedure M-92, Underwater Inspection of Mechanical Equipment and Structures in the Screenhouse (performed annually), Procedure M-92.1, Underwater Inspection and Maintenance of the Intake Structure and Shaft (performed every 5 years), and Procedure M-92.2, Inservice Inspection of Miscellaneous Water Control Structures at Ginna (performed annually) are currently in place and utilized at Ginna Station, and have been shown to be effective based on the historical operability and reliability of the Service and Circulating Water Systems.

Item B

The service water system should be continuously (for example, during spawning) chlorinated (or equally effectively treated with another biocide) whenever the potential for a macroscopic biological fouling species exists (for example, blue mussels at marine plants, American oysters at estuarine plants, and Asiatic clams at freshwater plants). Chlorination or equally effective treatment is included for freshwater plants without clams because it can help prevent microbiologically influenced corrosion. However, the chlorination (or equally effective) treatment need not be as stringent for plants where the potential for macroscopic biological fouling species does not exist compared to those plants where it does. Precautions should be taken to obey Federal, State, and local environmental regulations regarding the use of biocides.

Response

Circulating water chlorination using sodium hypochlorite to prevent biofouling is performed twice weekly from May through October. Ginna Station State Pollution Discharge Elimination System (SPDES) Permit limits chlorination to 120 minutes per day with the daily maximum total residual chlorine limited to 0.2 mg/L.

New York State Department of Environmental Conservation (NYDEC) has stressed chlorine minimization for a number of years. Both reduced residual chlorine allowed during chlorination - from 0.5 mg/L to 0.2 mg/L at the last SPDES Permit renewal - and reduced frequency of chlorination have been stressed. Informally, Rochester Gas and Electric has gradually reduced the chlorination season and the frequency of chlorination during the season.

Ginna Station SPDES Permit renewal hearings are currently underway. Application parameters, including chlorination practices for normal circumstances are being discussed as well as possible courses of action in the advent of zebra mussel migration to Ginna Station. See Item D. below.

Item C

Redundant and infrequently used cooling loops should be flushed and flow tested periodically at the maximum design flow to ensure that they are not fouled or clogged. Other components in the service water system should be tested on a regular schedule to ensure that they are not fouled or clogged. Service water cooling loops should be filled with chlorinated or equivalently treated water before layup. Systems that use raw service water as a source, such as some fire protection systems, should also be chlorinated or equally effectively treated before layup to help prevent microbiologically influenced corrosion. Precautions should be taken to obey Federal, State, and local environmental regulations regarding the use of biocides.

Response

A flushing program for the service water system will be established at Ginna Station only as needed to augment periodic inspections now required as part of RG&E's Inservice Testing Program, which requires full flow testing or inspection and disassembly of all check valves to ensure adequate Service Water flow to safety-related equipment. A policy of chlorination for laid up Service Water loops will be performed as described in Generic Letter 89-13 except for the Fire System. Ginna's comprehensive yearly Fire System testing and inspection programs controlled by procedures adequately detect system fouling or degradation.

Item D

Samples of water and substrate should be collected annually to determine if Asiatic clams have populated the water source. Water and substrate sampling is only necessary at freshwater plants that have not previously detected the presence of Asiatic clams in their source water bodies. If Asiatic clams are detected, utilities may discontinue this sampling activity if desired, and the chlorination (or equally effective) treatment program should be modified to be in agreement with paragraph B above.

Response

Starting in 1990, the following monitoring programs will be instituted for the Asiatic clams (Corbicula sp.) and the zebra mussel (Dreissena polymorpha):

- A) An annual benthic sampling program will be conducted. Samples will be taken from the following transects: 1) the nearshore area (to a depth of 5 meters) of the Ginna Nuclear Power Plant; 2) near the plant intake structure. The samples will be examined for the presence of bivalve mollusks.
- B) Intake cooling water will be sampled twice a month from May through August. The samples will be examined for presence of bivalve mollusks.
- C) Representative components of the service water system (i.e., diesel generator coolers) will be inspected for the presence of bivalve mollusks when opened during annual outages.

If the presence of either the Asiatic clam or the zebra mussel is determined by any of the above methods, future monitoring for that species will be terminated. If neither mollusk is found, the monitoring will continue only for species that are capable of surviving in the area of the Ginna Nuclear Power Plant. Monitoring would be discontinued for those species on which documentation is available stating that it would not be able to survive in Lake Ontario.

RECOMMENDATION II HEAT TRANSFER CAPABILITY TEST PROGRAM

Response

RG&E will continue to perform regular maintenance of the Service Water-related heat exchangers. During the 1989 Refueling Outage, the following heat exchangers were inspected, disassembled and cleaned:

- a) Component Cooling Water (both)
- b) Spent Fuel Pit
- c) Emergency Diesel Generator (both)
- d) Turbine Lube Oil Cooler
- e) Auxiliary Feedwater Pumps (all 3)
- f) Electro Hydraulic Oil Cooler (both)

The following are scheduled for the 1990 Refueling Outage:

- 1) Emergency Diesel Generator (both)
- 2) Turbine Lube Oil Cooler
- 3) Auxiliary Feedwater Pumps (all 3)
- 4) Electro Hydraulic Oil Cooler (both)

No significant levels of fouling were noted to date in heat exchangers after 20 years of operation. RG&E is also determining the feasibility of performing periodic tests of selected heat exchangers, in accordance with Enclosure 2 to Generic Letter 89-13. The purchase of additional instrumentation, development of test procedures, and establishment of acceptance criteria will be pursued. A testing schedule will be established based on the results of these efforts by the 1992 Refueling Outage.

The closed cycle Component Cooling Water heat exchangers are considered within the scope of the program. However, because of the favorable inspection results during the 1988 and 1989 Refueling Outages, showing negligible deterioration after long years of operation, and because of the stringent chemistry control associated with the CCW loop (maintaining pH between 8.0 and 9.0 by addition of sodium hydroxide and maintaining chromate concentration between 175 and 225 ppm by addition of potassium chromate), no additional testing is scheduled unless periodic inspections indicate a degradation of the heat exchangers.

RECOMMENDATION III

ESTABLISH ROUTINE MAINTENANCE AND INSPECTION PROGRAM

Response

As noted in Response II, RG&E has been performing routine inspection of safety-related (including Service Water) heat exchangers. RG&E has also initiated a Reliability Centered Maintenance Program, which includes the Service Water System. This program, previously discussed with the NRC, is a state-of-the-art system used to optimize maintenance activities for the systems within its scope. It is considered that these measures constitute an acceptable level of inspection and maintenance to meet the recommendations of Generic Letter 89-13.

RECOMMENDATION IV

CONFIRMATION OF INTENDED FUNCTION

Response

RG&E has, as part of our P&ID Upgrade Program, completed a system walkdown as of December 29, 1989. This effort reconciled the as-built system with our controlled configuration drawings (the P&IDs).

In addition, RG&E is in the process of performing a confirmatory single active failure analysis review. Although RG&E intends to complete this review prior to the end of the 1991 Refueling Outage, in accordance with Generic Letter 89-13, the full scope of this review has not yet been established. If additional time is required, RG&E will inform the NRC.

RECOMMENDATION V

CONFIRMATION THAT THE SERVICE WATER SYSTEM WILL FUNCTION AS INTENDED AND THAT EQUIPMENT WILL PERFORM EFFECTIVELY

Response

Normally, the Ginna Maintenance, Operating and Emergency Operating Procedures are all reviewed on a regular three year schedule. Maintenance Procedures are given further review as determined by focused results through the efforts of Ginna's continuing Reliability Centered Maintenance Program. Emergency Operating Procedures receive an additional level of review by the Plant Emergency Operating Procedures Committee. All of the above procedures are validated through the efforts of the Ginna INPO accredited Operating and Maintenance Training Programs to ensure that safety-related equipment cooled by the Service Water System will function as intended and that the equipment will perform effectively.

