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

JOHN E. MAIER
VICE PRESIDENT

TELEPHONE
AREA CODE 716 546-2700

October 9, 1981

Director of Nuclear Reactor Regulation
Attention: Mr. Dennis M. Crutchfield, Chief
Operating Reactors Branch No. 5
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: SEP Topics VI-7.B, VI-7.C, VI-10, VII-3, VIII-2, VIII-3
R. E. Ginna Nuclear Power Plant
Docket No. 50-244 SEE DRAWINGS

Dear Mr. Crutchfield:

This letter is in response to your letter of September 16, 1980 to Leon D. White, Jr. concerning a request for additional information relative to the inverters used at the Ginna Station. The response to the specific questions, as well as required drawings, are attached.

Very truly yours,

John E. Maier

Attachments

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Drawings To PR

8110140360

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3. Describe the consequence of one or more load groups on a single dc source losing power (e.g. automatic initiation of ECCS, automatic initiation of transfer from ECCS injection made to recirculation mode, loss of indication in the control room, loss of annunciators, loss of plant communications, loss of emergency telephones).

Response: Because of the Ginna design, shown in RG&E drawing #21489-269, Rev. 0, with the use of static switches and constant voltage transformers, the loss of a dc source or inverter would not result in the loss of any instrument buses; their loss would result in a fast (bumpless) transfer to the Class IE CVT dedicated to that channel.

The normal dc supply for the main control board annunciators is from battery 1A. The loss of a dc source (from the 1A battery) automatically results in a transfer to the 1B battery. This transfer scheme is described in SEP Topic VI-7.C.1, transmitted by letter from John E. Maier to Dennis M. Crutchfield, dated July 14, 1981.

The loss of a dc source would not result in the automatic initiation of the ECCS. Containment Isolation and Containment Ventilation Isolation by fail-closed air-operated valves would occur; these could not be reset until dc power is restored. Reactor trip could occur.

The loss of a dc source would not affect plant communication with the public address system or emergency telephones, since these have normal ac power, with separate dc power as a backup.

The loss of a dc source would result in a loss of status indication for components on the affected load group; however, all required safe shutdown and accident mitigation functions have redundancy; therefore, loss of safety function would not occur.

Attachment: Responses to NRC Questions in 9/16/80 letter on inverters (Topics VI-7.B, VI-7.C, VI-10, VII-3, VIII-2, VIII-3)

1. Quantify the number of instrument inverters in your plant and for each inverter:

   a) identify the inverter and its power supplies; and

   b) describe the switching features that are provided to switch inverter power supplies and inverter loads (including synchronization circuits).

Response: RG&E drawing #21489-269, Rev. 0 shows the arrangement of the two vital inverters, 1A and 1B, and the respective 125 VDC sources, batteries 1A and 1B. Each inverter is backed by a constant voltage transformer (CVT) synchronized with the inverter, and is fed from a Class 1E motor control center receiving power from the same source as the associated battery charger. This synchronization circuit is shown on Solidstate Controls Inc. (SCI) Drawing #014D14256 Rev. 1.

A static switch responds to a loss of inverter output by transferring the vital instrument bus from the inverter to the CVT. This is accomplished by electronically changing the gating of the SCR's shown in SCI Drawing #015C14255, Rev. 0 to allow current flow from the alternate source input when the output voltage falls below the setpoint. It should be noted that the automatic transfer to the CVT does not parallel redundant channels or trains. It does, however, provide continuous power to the vital AC panel.

2. Provide the requirements for:

   a) testing the transfer paths described in your responses to 1 above, and

   b) limiting the number of redundant load groups that may be placed on any maintenance power source during each operating condition.

Response: The transfer paths are tested subsequent to component maintenance and testing, on an annual refueling outage schedule. Testing requirements are specified in the Ginna Station maintenance procedures M38.2 and M38.3.

As shown in RG&E Drawing #21489-269, the instrument bus feeder breakers are mechanically interlocked to prevent paralleling the maintenance power supply and the normal feeder from the inverter. Maintenance procedures M38.2 and M38.3 restrict the placing of more than one instrument bus on the maintenance power source during testing.

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AUTH.NAME AUTHOR AFFILIATION
MAIER,J.E. Rochester Gas & Electric Corp.
RECIP.NAME RECIPIENT AFFILIATION
CRUTCHFIELD,D. Operating Reactors Branch 5

SUBJECT: Forwards addl info re inverters used at facility in response to NRC 800916 ltr on SEP Topics VI-7.B, VI-7.C, VI-10, VIII-3, VIII-2 & VIII-3. Three oversized drawings encl. Aperture cards will be available in PDR.

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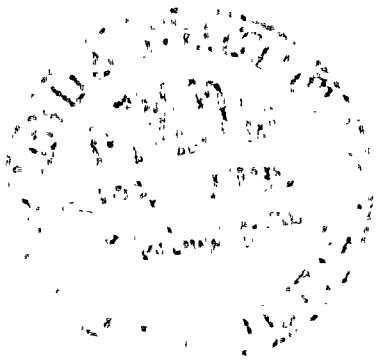

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