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 JOHNSON, A.R. Project Directorate I-3  
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SUBJECT: Forwards response to Generic Ltr 91-06, "Resolution of Generic Issue A-30, 'Adequacy of Safety-Related dc Power Supplies.'" Advises that specific action planned in response to Questions 6, 7.b.4, 7.c.3 & 7.c.5.

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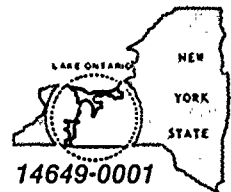
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ROBERT C. MECREDY  
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October 28, 1991

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U.S. Nuclear Regulatory Commission  
Document Control Desk  
Attn: Allen R. Johnson  
Project Directorate I-3  
Washington, D.C. 20555

Subject: Resolution of Generic Issue A-30, Adequacy  
of Safety-Related DC Power Supplies (Generic  
Letter 91-06) dated April 29, 1991  
R.E. Ginna Nuclear Power Plant  
Docket No. 50-244

Dear Mr. Johnson:

Generic Letter 91-06 requested a written response within 180 days  
to specific questions as related to Generic Issue(GI) A-30, Safety  
Related DC Power Systems.

The questions and our responses are provided in ATTACHMENT 1.  
Specific actions are planned in response to questions 6, 7.b.4,  
7.c.3, and 7.c.5.

Very truly yours,

Robert C. Mecredy

GAL/192

Attachments

Subscribed and sworn to before me  
on this 28th day of October, 1991

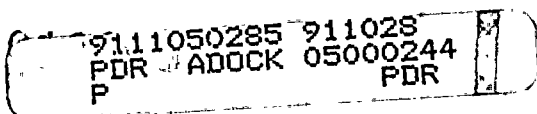
SAMUEL H. BROWNE  
NOTARY PUBLIC, State of New York  
Registration No. 4917041  
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My Commission Expires Dec. 28, 1992

xc: Mr. Allen R. Johnson (Mail Stop 14D1)  
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Ginna Senior Resident Inspector

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*A001*  
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SAMUEL H. BROWN  
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Response To Generic Letter 91-06

Questions:

The following information is to be provided for each unit at each site:

1. Unit R. E. Ginna Nuclear Plant
2. a. The number of independent redundant divisions of Class 1E or safety-related dc power for this plant is 2.  
(Including any separate Class 1E or safety-related dc, such as any dc dedicated to the diesel generators.)  
  
b. The number of functional safety-related divisions of dc power necessary to attain safe shutdown for this unit is 1.
3. Does the control room at this unit have the following separate, independently annunciated alarms and indications for each division of dc power?
  - a. alarms
    1. Battery disconnect or circuit breaker open? NO
    2. Battery charger disconnect or circuit breaker open (both input ac or output dc)? NO
    3. dc system ground? NO
    4. dc bus undervoltage? NO
    5. dc bus overvoltage? NO
    - DC system overvoltage is measured at the battery terminals.
    6. Battery charger failure? NO
    7. Battery discharge? NO
  - b. Indications
    1. Battery float charge current? YES
    2. Battery circuit output current? YES
    3. Battery discharge? YES
    4. Bus Voltage? YES

The battery monitoring system provides local and control room indication of battery discharge and the discharge current, battery float charge current and battery voltage. There is also a separate meter in the control room providing indication for dc system bus voltage.

- c. Does the unit have written procedures for response to the above alarms and indications? YES
4. Does this unit have indication of bypassed and inoperable status of circuit breakers or other devices that can be used to disconnect the battery and battery charger from its dc bus and the battery charger from its ac power source during maintenance or testing? YES

A battery monitoring system provides control room annunciation upon a loss of battery charging current. Therefore indication of the disconnection of the battery from the dc system is provided. Indication is also provided in the control room for the disconnection of each battery charger from the dc system or from its ac power source.

5. If the answer to any part of question 3 or 4 is no, then provide information justifying the existing design features of the facility's safety-related dc systems. \* See note below.

#### Justification for Question 3

There is annunciation in the control room for all the alarm functions identified in question 3, but circuits for both trains are annunciated at common annunciator windows. Therefore, the control room does not have separate, independently annunciated alarms for both division of dc power. This is acceptable because if a problem is identified on one battery division, the operators are instructed by procedure and/or training to periodically monitor the other DC division. Separate indications are in the control room for both divisions, therefore monitoring of the unaffected division can be accomplished from the control room.

6. (1) Have you conducted a review of maintenance and testing activities to minimize potential for human error causing more than one dc division to be unavailable? YES and (2) do plant procedures prohibit maintenance or testing on redundant dc divisions at the same time? NO



If the facility Technical Specifications have provisions equivalent to those found in the Westinghouse and Combustion Engineering Standard Technical Specifications for maintenance and surveillance, then question 7 may be skipped and a statement to that effect may be inserted here. Not Equivalent

7. Are maintenance, surveillance and test procedures regarding station batteries conducted routinely at this plant? Specifically:

a. At least once per 7 days are the following verified to be within acceptable limits:

1. Pilot cell electrolyte level? YES
2. Specific gravity or charging current? NO
3. Float Voltage? NO
4. Total bus voltage on float charge? NO
5. Physical condition of all cells? YES

b. At least once per 92 days, or within 7 days after a battery discharge, overcharge, or if the pilot cell readings are outside the 7-day surveillance requirements are the following verified to be within acceptable limits:

The following parameters are verified to be within acceptable limits ever quarter:

1. Electrolyte level of each cell? YES
2. The average specific gravity of all cells? YES
3. The specific gravity of each cell? YES
4. The average electrolyte temperature of a representative number of cells? NO
5. The float voltage of each cell? YES
6. Visually inspect or measure resistance of terminals and connectors (including the connectors at the dc bus)? NO





- c. At least every 18 months are the following verified:
1. Low resistance of each connection (by test)? YES
  2. Physical condition of the battery? YES
  3. Battery charger capability to deliver rated ampere output to the dc bus? NO
  4. The capability of the battery to deliver its design duty cycle to the dc bus? YES
  5. Each individual cell voltage is within acceptable limits during the service test? NO
- d. At least every 60 months, is capacity of each battery verified by performance of a discharge test? YES
- e. At least annually, is the battery capacity verified by performance discharge test, if the battery shows signs of degradation or has reached 85% of the expected service life? YES
8. Does this plant have operational features such that following loss of one safety-related dc power supply or bus:
- a. Capability is maintained for ensuring continued and adequate reactor cooling? YES
  - b. Reactor coolant system integrity and isolation capability are maintained? YES
  - c. Operating procedure, instrumentation (including indicators and annunciators), and control functions are adequate to initiate systems as required to maintain adequate core cooling? YES
9. If the answer to any part of question 6, 7 or 8 is no, then provide your basis for not performing the maintenance, surveillance and test procedures described and/or the bases for not including the operational features cited. \*See note below.



Justification to Question 6:

RG&E conducted an extensive review of maintenance and test procedures as part of our response to Inspection Report 90-031 dated February 8, 1991. Procedures that are still being reviewed are in quarantine pending review completion. Procedures for 1A and 1B Battery System Maintenance and Repair verify operability of the redundant battery system as an initial condition. However, at present there is no specific prohibition in all maintenance procedures. It is RG&E's policy to prohibit maintenance or testing on redundant dc divisions at the same time. RG&E will investigate the need to place more specific prohibition in all applicable procedures to ensure the integrity of the dc system.

Justification to Question 7a:

During the performance of plant tours, normally twice per shift, the specified battery parameters are monitored to ensure normal operation. Also in accordance with Regulatory Guide 1.129, "Maintenance, Testing and Replacement of Large Lead Storage Batteries for Nuclear Power Plants", monthly inspections are performed per IEEE-450, "Large Lead Storage Batteries for Generating Stations". All the specified battery parameters are verified to be within acceptable limits.

Justification to Question 7b.4:

Plant procedures are currently being revised to include acceptable limits for the average electrolyte temperature. Presently the average electrolyte temperature is calculated for the purpose of calculating the specific gravity.

Justification to Question 7b.6:

In accordance with IEEE-450, "Large Lead Storage Batteries for Generating Stations", cell to cell terminal connection resistance is verified to be within acceptable limits during the yearly test. However, monthly the terminals are visually inspected for any evidence of corrosion. The connectors at the dc bus are not subjected to the same corrosive elements as cell terminal connections and therefore are not visually inspected monthly.



Justification to Question 7c.3:

Plant procedures are currently being revised to include testing of the chargers to ensure they can deliver their rated ampere output. The plant procedure will be revised prior to the performance of the next annual battery service test and the charger capability will be verified during the service test.

Justification to Question 7c.5:

Plant procedures are currently being revised to include monitoring of each cell voltage during the annual service test to ensure that they remain within acceptable limits. The plant procedure will be revised prior to the performance of the next annual battery service test.

\*Note: For questions involving supporting type information (question numbers 5 and 9) instead of developing and supplying the information in response to this letter, you may commit to further evaluate the need for such provisions during the performance of your individual plant examination for severe accident vulnerabilities (IPE). If you select this option, you are required to:

- (1) So state in response to these questions, and
- (2) Commit to explicitly address questions 5 and 9 in your IPE submittal per the guidelines outlined in NUREG-1335 (Section 2.1.6, Subitem 7), "Individual Plant Examination: Submittal Guidance."