GPU Nuclear

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Writer's Direct Dial Number:

C321-91-2249
October 25, 1991

U.S. Nuclear Generating Station
Attn: Document Control Desk
Washington, DC 20555

Dear Sir:

Subject: Oyster Creek Nuclear Generating Station
Docket No. 50-219
Response to Generic Letter 91-06
Resolution of Generic Issue A-30, "Adequacy of Safety Related DC Power Supplies," Pursuant to 10 CFR 50.54(f)

As required by 10 CFR 50.54(f), the attached information provides the GPU Nuclear response to Generic Letter 91-06 dated April 29, 1991.

If further information is required, please contact Thomas Blount, OC Licensing Engineer at 609-971-4390.

Very truly yours,

John J. Barton
Vice President and Director
Oyster Creek

Sworn and subscribed to before me this 25th day of October 1991.

Judith M. Crowe
Notary Public of New Jersey

JUDITH M. CROWE
Notary Public of New Jersey
My Commission Expires 11/25/95

JB\TB:jc
Enclosure
cc: Administrator, Region 1
Senior NRC Resident Inspector
Oyster Creek NRC Project Manager

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Enclosure 1

GPUN RESPONSE TO GENERIC ISSUE (GI) A 30
"ADEQUACY OF SAFETY-RELATED DC POWER SUPPLIES" (GL 91-06)

The following information is provided by GPU Nuclear:

1. Unit:

   Oyster Creek Nuclear Generating Station

2. a: The number of independent redundant divisions of Class 1E or safety related DC power for this plant is: (Include any separate Class 1E or safety related dc, such as any dc dedicated to the diesel generators.)

   Station Batteries (SBs) 125V DC: TWO
   Diesel Batteries (DGBs) 125V DC: TWO (Self Contained Starting Batteries)

   b: The number of safety-related divisions of dc power necessary to attain safe shutdown for this unit is:

   SB: ONE
   DGB: ONE

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?

         SB: YES
         DGB: NO*,**

         * There are no battery disconnects or circuit breakers for the battery.

         ** A DC control power knife switch open condition will be indicated by the "Diesel Not in AUTO" annunciator.

2. Battery charger disconnect or circuit breaker open (both input ac and output dc)?

SB: YES
DGB: NO*

* Low DC voltage annunciator will signal this condition.

3. dc system ground?

SB: YES
DGB: YES

4. dc bus undervoltage?

SB: YES
DGB: YES

5. dc bus overvoltage?

SB: YES
DGB: NO*

* Local meter is read daily by operators for float voltage.

6. Battery charger failure?

SB: YES
DGB NO*

* Low DC voltage annunciator will signal this condition.

7. Battery discharge?

SB: NO*

* Ammeter in the Control Room provides indication for discharge (negative reading). Log is taken by the plant operators every hour.

DGB: NO**

** Local charging current meter is read by operators daily; low DC voltage annunciator will signal low voltage as battery charge begins to drop.

b. Indications

1. Battery float charge current?

SB: YES
DGB: YES

2. Battery circuit output current?

SB: YES
DGB: NO*

* With diesel in standby nearly all current is battery charge current, (observed as float charge current).

3. Battery discharge?

SB: YES
DGB: NO*

* Low dc voltage annunciator will indicate this condition if it is abnormal.

4. Bus voltage?

SB: YES
DGB: NO*

* Self contained diesel battery and controls does not have a "bus" system.

c. Does the unit have written procedures for response to the above alarms and indications?

SB: YES
DGB: 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?

SB:: YES
DGB: NO*

* Self contained diesel battery does not have a bus distribution system.

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.
(Information provided as appropriate to each response).

6. (1) Have you conducted a review of maintenance and testing activities to minimize the potential for human error causing more than one dc division to be unavailable? and, (2) do plant procedures prohibit maintenance or testing on redundant dc division at the same time?

(1) SB: YES (1) DGB: YES
(2) SB: YES (2) DGB: YES

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?

SB: YES
DGB: YES

2. Specific gravity or charging current?

SB: YES (Pilot cell).
DGB: YES

3. Float voltage?

SB: YES
DGB: YES

4. Total bus voltage on float charge?

SB: YES
DGB: YES*

*The self contained diesel battery does not have a "bus"distribution system.

5. Physical condition of all cells?

SB: YES
DGB: 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:

1. Electrolyte level of each cell?

SB: YES
DGB: YES

2. The average specific gravity of all cells?

SB: YES
DGB: YES

Nominal specific gravity of each cell is recorded monthly and compared against the acceptance criteria.

3. The specific gravity of each cell?

SB: YES
DGB: YES

4. The average electrolyte temperature of a representative number of cells?

SB: YES
DGB: YES

5. The float voltage of each cell?

SB: YES
DGB: YES

6. Visually inspect or measure resistance of terminals and connectors(including the connectors at the dc bus)?

SB: YES (Visually inspect)
DGB: YES (Visually inspect)

c. At least every 18 months, are the following verified:

1. Low resistance of each connection (by test)?

SB: NO
DGB: NO

Performed every 24 months in accordance with OC Tech Specs.

2. Physical condition of the battery?

SB: NO
DGB: NO

Performed every 24 months in accordance with OC Tech Specs.

3. Battery charger capability to deliver rated ampere output to the dc bus?

SB: NO
DGB: NO

Industry standards do not require charger testing. Chargers at O.C. meet the design requirements as stated in the FSAR. In addition, chargers are subjected to periodic preventive maintenance checks.

4. The capability of the battery to deliver its design duty cycle to the dc bus?

SB: NO
DGB: NO

Performed every 24 months in accordance with O.C. Tech Spec.

5. Each individual cell voltage is within acceptable limits during the service test?

SB: NO
DGB: NO

Performed every 24 months in accordance with O.C. Tech Spec.

d. At least every 60 months, is capacity of each battery verified by performance of a discharge test?

SB: YES
DGB: YES

Performed every 24 months in accordance with O.C. Tech Sec.

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.

SB: NO

Performed every 24 months in accordance with O.C. Tech Spec.

DGB: 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?

SB: YES
DGB: YES

b. Reactor coolant system integrity and isolation capability are maintained?

SB: YES
DGB: YES

c. Operating procedures, instrumentation (including indicators and annunciators), and control functions are adequate to initiate systems as required to maintain adequate core cooling?

SB: YES
DGB: YES