FORD 1

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AUTH.NAME AUTHOR AFFILIATION
SORENSEN,G.C. Washington Public Power Supply System
RECIP.NAME RECIPIENT AFFILIATION
Document Control Branch (Document Control Desk)

SUBJECT: Responds to generic ltr 91-06, "Adequacy of Safety-Related DC Power Supplies," pursuant to 10CFR50.54(F).Provides justification to questions listed w/no as answer.

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RIDS/FORD 1 DOCUMENT

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

P.O. Box 968 • 3000 George Washington Way • Richland, Washington 99352

October 18, 1991
G02-91-191

Docket No. 50-397

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Gentlemen:

Subject: NUCLEAR PLANT NO. 2, OPERATING LICENSE NPF-21
RESPONSE TO GENERIC LETTER 91-06, "ADEQUACY OF SAFETY-RELATED DC POWER SUPPLIES," PURSUANT TO 10CFR50.54(F)

The subject generic letter required written response to questions in its Enclosure 1 within 180 days. Attachment 1 contains the required response to those questions. In accordance with the instructions in Items 5 and 9, the following provides justifications to those questions with a "no" answer:

Justification for responses to question 3.a.7

Does the control room have the following separate, independently annunciated alarms and indications for each division of dc power? - Battery Discharge

At WNP-2, battery discharge is indirectly annunciated by alarms indicating charger failure and bus undervoltage. This control room instrumentation is described in the FSAR 8.3.2.2.1.2. Battery high discharge rate is not separately alarmed. In the absence of an electrical fault and with battery charger available, all normal and emergency steady state loads are carried by the battery charger. At 125% of its full load rating, the battery charger operates in a current-limiting mode and any overcurrent in excess is supplied by the battery. However, the feeder circuit fuses are sized to trip on overcurrents of this magnitude, thereby preventing battery high discharge current to continue to the point of degrading the system. Annunciation of the isolated Class 1E circuit is made for each connected load.

The WNP-2 SER, Rev 0, acknowledging no high discharge rate alarm in the control room, concluded the monitoring provided was acceptable and the addition of the high discharge rate alarm was not required.

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Justification for response to question 7.b.6

Are maintenance, surveillance and test procedures regarding station batteries conducted routinely? Specifically:

> 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: Visually inspect or measure resistance of terminals and connectors (including the connectors at the dc bus)?
>
> > At WNP-2, an inspection for corrosion is performed at the battery terminals and connectors, where acid may be present. The connections at the DC bus are cable connections. Typical of other bus connections, they are not subjected to the conditions experienced by those at the battery. The inspection performed is in accordance with IEEE 450 and WNP-2 Technical Specifications Surveillance 4.8.2.1.b.

This justification for the current configuration is supported by NRC approval of the licensing basis documents, as discussed above.

Very truly yours,

GC Sorensen

G. C. Sorensen, Manager
Regulatory Programs

ME/bk
Attachments

cc: JB Martin - NRC RV
NS Reynolds - Winston & Strawn
PL Eng - NRC
DL Williams - BPA/399
NRC Site Inspector - 901A

STATE OF WASHINGTON)
)
COUNTY OF BENTON)

Subject: Response to Generic Letter 91-06

I, G. C. SORENSEN, being duly sworn, subscribe to and say that I am the Manager, Regulatory Programs, for the WASHINGTON PUBLIC POWER SUPPLY SYSTEM, the applicant herein; that I have full authority to execute this oath; that I have reviewed the foregoing; and that to the best of my knowledge, information, and belief the statements made in it are true.

DATE: 17 OCTOBER, 1991

G. C. Sorensen, Manager
Regulatory Programs

On this date personally appeared before me G. C. SORENSEN, to me known to be the individual who executed the foregoing instrument, and acknowledged that he signed the same as his free act and deed for the uses and purposes herein mentioned.

GIVEN under my hand and seal this 17th day of October 1991.

Notary Public in and for the
STATE OF WASHINGTON

My Commission Expires April 29, 1995

ENCLOSURE 1

10 CFR 50.54(f) REQUEST - GENERIC ISSUE (GI) A-30 "ADEQUACY OF SAFETY-RELATED DC POWER SUPPLIES"

Background

The specific area of concern of GI A-30 "Adequacy of Safety-Related DC Power Supplies" is the adequacy of the safety-related dc power in operating nuclear power plants, particularly with regard to multiple and common cause failures. Risk analysis and past plant experience support conclusions that failure of the dc power supplies could represent a significant contribution to the unreliability of shutdown cooling. Analysis indicates that inadequate maintenance and surveillance and failure to detect battery unavailability are the prime contributors to failure of the dc power systems.

During the development of plans to resolve GI A-30, it was observed that several previously issued regulatory notices (IENs), bulletins (IEBs) and letters (GLs) submitted to licensees include recommendations similar to those that have been identified to resolve GI A-30. More specifically, it has been determined that recommendations contained in notifications IEN 85-74, "Station Battery Problems", IEB 79-27, "Loss of Non-Class 1E Instrumentation and Control Power System Bus during Operation," and separate actions being taken to resolve GI 49, "Interlocks and LCOs for Class 1E Tie Breakers" include the elements necessary to resolve GI A-30. It is therefore concluded that licensees that have implemented these recommendations and actions will have resolved GI A-30. The response to the questions that follow is necessary to provide the staff with information to determine whether any further action is required for your facility.

Questions

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

1. Unit WNP-2

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

   * Including HPCS

   b. The number of functional safety-related divisions of dc power necessary to attain safe shutdown for this unit is 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? YES

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

3. dc system ground? YES

4. dc bus undervoltage? YES

5. dc bus overvoltage? YES

6. Battery charger failure? YES

7. Battery discharge? ND

b. Indications

1. Battery float charge current? YES

2. Battery circuit output current? YES

3. Battery discharge? YES

4. Bus voltage? YES

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

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.

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? YES and (2) do plant procedures prohibit maintenance or testing on redundant dc divisions at the same time? YES

If the facility Technical Specifications have provisions equivalent to those found in the Westinghouse and Combustion Engineering Standard Technical Specification: for maintenance and surveillance, then question 7 may be skipped and a statement to that effect may be inserted here. _____

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? YES

3. Float voltage? YES

4. Total bus voltage on float charge? YES

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:

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? YES

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? YES

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? YES

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 procedures, 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.

*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."