REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS) A04

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SORENSEN,G.C. Washington Public Power Supply System
RECIP.NAME RECIPIENT AFFILIATION
SCHWENCER,A. Licensing Branch 2

SUBJECT: Forwards marked-up Page 8.3-70 to FSAR,Amend 23,deleting ref to battery charger output breaker trip & battery charger blown fuse indication alarms,as redundant.

DISTRIBUTION CODE: B001S COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 3
TITLE: Licensing Submittal: PSAR/FSAR Amdts & Related Correspondence

NOTES:

	RECIPIENT ID CODE/NAME		COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME		COPIES LTTR	COPIES ENCL
	NRR/DL/ADL		1	0	NRR LB2 BC		1	0
	NRR LB2 LA		1	0	AULUCK,R.	01	1	1
INTERNAL:	ELD/HDS2		1	0	IE FILE		1	1
	IE/DEPER/EPB	36	3	3	IE/DEPER/IRB	35	1	1
	IE/DEQA/QAB	21	1	1	NRR/DE/AEAB		1	0
	NRR/DE/CEB	11	1	1	NRR/DE/EHEB		1	1
	NRR/DE/EQB	13	2	2	NRR/DE/GB	28	2	2
	NRR/DE/MEB	18	1	1	NRR/DE/MTEB	17	1	1
	NRR/DE/SAB	24	1	1	NRR/DE/SGEB	25	1	1
	NRR/DHFS/HFEB	40	1	1	NRR/DHFS/LQB	32	1	1
	NRR/DHFS/PSRB		1	1	NRR/DL/SSPB		1	0
	NRR/DSI/AEB	26	1	1	NRR/DSI/ASB		1	1
	NRR/DSI/CPB	10	1	1	NRR/DSI/CSB	09	1	1
	NRR/DSI/ICSB	16	1	1	NRR/DSI/METB	12	1	1
	NRR/DSI/PSB	19	1	1	NRR/DSI/RAB	22	1	1
	NRR/DSI/RSB	23	1	1	REG FILE	04	1	1
	RGN5		3	3	RM/DDAMI/MIB		1	0
EXTERNAL:	ACRS	41	6	6	BNL(AMDTS ONLY)		1	1
	DMB/DSS (AMDTS)		1	1	FEMA-REP DIV	39	1	1
	LPDR	03	1	1	NRC PDR	02	1	1
	NSIC	05	1	1	NTIS		1	1

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December 2, 1983
G02-83-1110

Docket No. 50-397

Director of Nuclear Reactor Regulation
Attention: Mr. A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Schwencer:

Subject: NUCLEAR PROJECT NO. 2
BATTERY CHARGER ANNUNCIATION CHANGES

In a telephone conversation on November 30, 1983, with Mr. Sang Rhow (NRC) and Mr. P. Powell and Mr. W. Gilles (SS), Mr. Rhow agreed that the "Battery Charger Output Breaker Tripped" and "Battery Charger Blown Fuse Indication" alarms are redundant and therefore could be deleted. The following formally documents the reason for the deletion.

In the Control Room, we presently alarm as "Battery Charger Trouble" for:

AC Failure - internal AC failure within the charger
Charger High Voltage - charger output above 139v or 282v
Charger Low Voltage - charger output below 124v or 235v

We alarm as "Battery Failure" for:

Battery Fuse Blown
Battery Bus Undervoltage - battery bus below 120v or 240v

In the Control Room, meters indicate battery bus voltage, battery charger current and battery charge/discharge current.

Under normal conditions, the battery is in the "float" mode at 130.5v or 261.0v (for 125v and 250v battery, respectively). In the event of an output failure of the charger (due to tripped charger output breaker, blown charger fuse or other internal charger failure), the battery bus voltage drops to about 117v or 234v immediately as the battery supplies the load. This causes the charger low voltage relay to alarm and (with the 120v present setting) the bus undervoltage to alarm. Both "Charger Trouble" and "Battery Failure" annunciators alarm in the Control Room. A blown fuse indicator or charger breaker trip indication is redundant since charger low voltage occurs for either of the two.

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In addition, the panel meters will show no charger current, battery discharge current and the battery below float voltage. From all of this panel and annunicator information, it is clear to the Operator that something in the battery charging circuit has failed and the battery is supplying the load.

The attachment is a markup of the FSAR to reflect deletion of the charger blown fuse indicator and the charger output breaker tripped indication. If you have any further questions, please contact Mr. P. L. Powell, Manager, WNP-2 Licensing.

Very truly yours,

G. C. Sorensen, Manager
Regulatory Programs

WPG/tmh
Attachment

cc: R Auluck - NRC
WS Chin - BPA
S Rhow - NRC
AD Toth - NRC Site

The DC power systems are designed to permit periodic inspection and test of important areas such as wiring, insulation, connections, and switchboards, and thus comply with General Design Criterion 18.

Control room instrumentation and alarms are provided for each battery and battery charger to monitor the status of each power supply in accordance with IEEE Standard 308-1974 and Regulatory Guide 1.47. This instrumentation includes indication of the main bus voltage, battery current (charge and discharge), and battery charger discharge current. Alarms through the control room annunciator and computer are provided for the following abnormal conditions: Bus undervoltage, DC system ground fault (for ungrounded systems), battery fuse blown, ~~battery charger fuse blown~~, battery charger over/undervoltage, ~~battery charger output breaker tripped~~, and battery charger AC failure. Charger and battery disconnect switches are provided with position indication and group alarm in the control room.

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. Failure of the battery charger also causes a battery high discharge, but this condition is monitored as discussed above.

8.3.2.2.1.3 HPCS (Division 3) 125 Volt DC System

The 480 V AC feed to the HPCS battery charger is from the HPCS motor control center via the engine generator control panel.

Separation between Division 3 and other independent systems is maintained and the power provided to the chargers can be from either offsite or onsite sources. The HPCS DC system is arranged so that the probability of a system failure resulting in loss of DC power is extremely low. Important system components are either self-alarming on failure or capable of being tested during service to detect faults. All abnormal conditions of selected system parameters important to surveillance of the system annunciate in the main control room. Cross connections with other independent 125 V DC systems do not exist.