

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555



MEMORANDUM FOR: D. Crutchfield, Branch Chief, SEPB, DOR, NRR
FROM: F. Rosa, Chief, PSB, DSS
SUBJECT: D. C. SYSTEM MONITORING AND ANNUNCIATION

In response to your memorandum of September 25, 1979, we offer the following comments on D.C. power system monitoring and annunciation:

The specific requirements for D. C. power system monitoring derive from the general requirements embodied in Section 5.3.2(4), 5.3.3(5) and 5.3.4(5) of IEEE Std 308-1974, and in Regulatory Guide 1.47. In summary, these general requirements simply state that the D.C. system (batteries, distribution systems and chargers) shall be monitored to the extent that it is shown to be ready to perform its intended function. Accordingly, the guidelines used by PSB in the licensing review of the D.C. power system designs are as follows:

As a minimum, the following indications and alarms of the Class 1E D.C. power system status shall be provided in the control room:

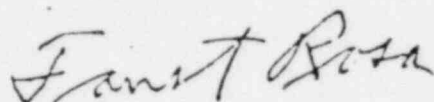
- Battery current (ammeter-charge/discharge)
- Battery charger output current (ammeter)
- D.C. b. voltage (voltmeter)
- Battery charger output voltage (voltmeter)
- Battery high discharge rate alarm
- D.C. bus undervoltage and overvoltage alarm
- D.C. bus ground alarm (for ungrounded system)
- Battery breaker(s) or fuse(s) open alarm
- Battery charger output breaker(s) or fuse(s) open alarm
- Battery charger trouble alarm (one alarm for a number of abnormal conditions which are usually indicated locally)

It should be noted that some additional status indications and alarms are provided in the control room or locally by most current designs.

We have concluded that the above cited monitoring, augmented by the periodic test and surveillance requirements included in the Technical Specifications, provide the required assurance that the Class 1E D.C. power system is ready to perform its intended safety function.

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We note that our above guidelines differ from and are more conservative than the E.G.&G. recommendations cited in your memorandum.

A handwritten signature in cursive script that reads "Faust Rosa".

Faust Rosa, Chief
Power Systems Branch
Division of Systems Safety