



Commonwealth Edison
 One First National Plaza, Chicago, Illinois
 Address Reply to: Post Office Box 767
 Chicago, Illinois 60690

March 6, 1985

Mr. Robert Gilbert, Project Manager
 Operating Reactor
 U.S. Nuclear Regulatory Commission
 Washington, D.C. 20555

Subject: Dresden Nuclear Power Station Unit 2
 SEP Topic VI-7.C.1 Item No. 4.21.5
 Isolation of Class IE Sources
 from Non-Class IE Loads
NRC Docket No. 50-237

Dear Mr. Gilbert:

This letter addresses the concerns of SEP Topic VI-7.C.1 Integrated Assessment Summary Item No. 4.21.5 entitled "Isolation of Class IE Sources from Non-Class IE Loads".

SEP Concern

The 480-V AC Switchgear 27 normally receives AC power from Bus 24. The DC control power is, however, from Division I. This is a deviation from review guidelines because 480-V Switchgear 27 is non-Class IE. It is the staff's position that the licensee should demonstrate, by suitable short-circuit analyses and coordination curves, that all non-Class IE loads are adequately isolated from Class IE sources by at least two circuit breakers in series (e.g., Switchgear 27 feeder breaker and individual load feeder breakers should be coordinated to ensure that faults are not transferred to the Class IE bus). Two breakers are physically present, however, their trip devices may not be coordinated.

Response

In response to the general issue of isolation of Non-Class IE loads from IE sources, during the time Dresden Unit 2 was designed and constructed the concept of "Safety-Related" and "Non-Safety Related" equipment was in the developmental stages and, therefore, the current philosophy concerning IE/non-IE segregation and isolation as detailed in IEEE 384 and Reg. Guide 1.75 was not in existence. At the time, the concept of multiple lines of defense, and the separation and isolation of redundant systems which may be called upon to prevent or mitigate the consequences of a reactor accident, was a primary consideration in the design of the plant's electrical distribution system. The plant was laid out with two distinct electrical divisions to supply power to these redundant systems which may be needed during the design basis plant emergencies. In some cases, out of convenience of association with those systems required during design basis plant emergencies, other non-essential loads were assigned to buses associated with the two redundant electrical division. In most cases these loads would not be operating during loss of coolant accident, or would be shed

8505030462 850306
 PDR ADOCK 05000237
 PDR

A035
1/1
originally
Rev'd w/out
Drawings

Aperture Card
Dirt.
Drawings To: Bob
Gilbert

March 6, 1985

from the power source during a loss of offsite power. It is important to note that the design criteria for the original plant required that redundant loads be assigned power sources such that the loss of an entire plant electrical division would not eliminate the redundant train associated with a safety system.

With respect to the concern about isolation of D.C. control power, non-safety related 480-V Switchgear Bus 27 will no longer receive its 125V DC control power from Division I 125VDC Bus #2, but from new Non-Essential 125V DC Bus #2B-2. Attached are copies of drawings 12E-2322B1, Rev. B and 12E-2322B2, Rev. B, which show the original and new DC bus configurations. This modification is in progress and is expected to be operational by mid 1986. As indicated on the above drawings, the 124V DC supply to Bus 27 will be isolated from the IE source by a series connection of the branch breaker on Non-Essential bus 2B-2 and the fusible switch feeder on Essential Bus 2B. (See final overall key-12E-2322B2, Rev. B).

In order to ensure isolation of the DC source to Bus 27 from the essential 125VDC system, the branch breaker feeding Bus 27 must be coordinated with the main fusible switch feeding Essential 125VDC Bus 2B. Attached is a coordination study showing that coordination does exist for all levels of fault current on the branch circuit to Bus 27.

As modifications are incorporated into the plant design, wherever practical, greater separation between IE sources and non-IE loads will be provided in accordance with the current philosophy as stated in Reg. Guide 1.75. The DC system modification noted above is one such example. When new systems are installed they are in accordance with current standards (EG. IEEE 384) where practical.

We hope that this response and the enclosed documents satisfy your concerns pertinent to this SEP Topic. Please advise if you need any additional information.

If you have any questions concerning this, please contact this office.

Sincerely,



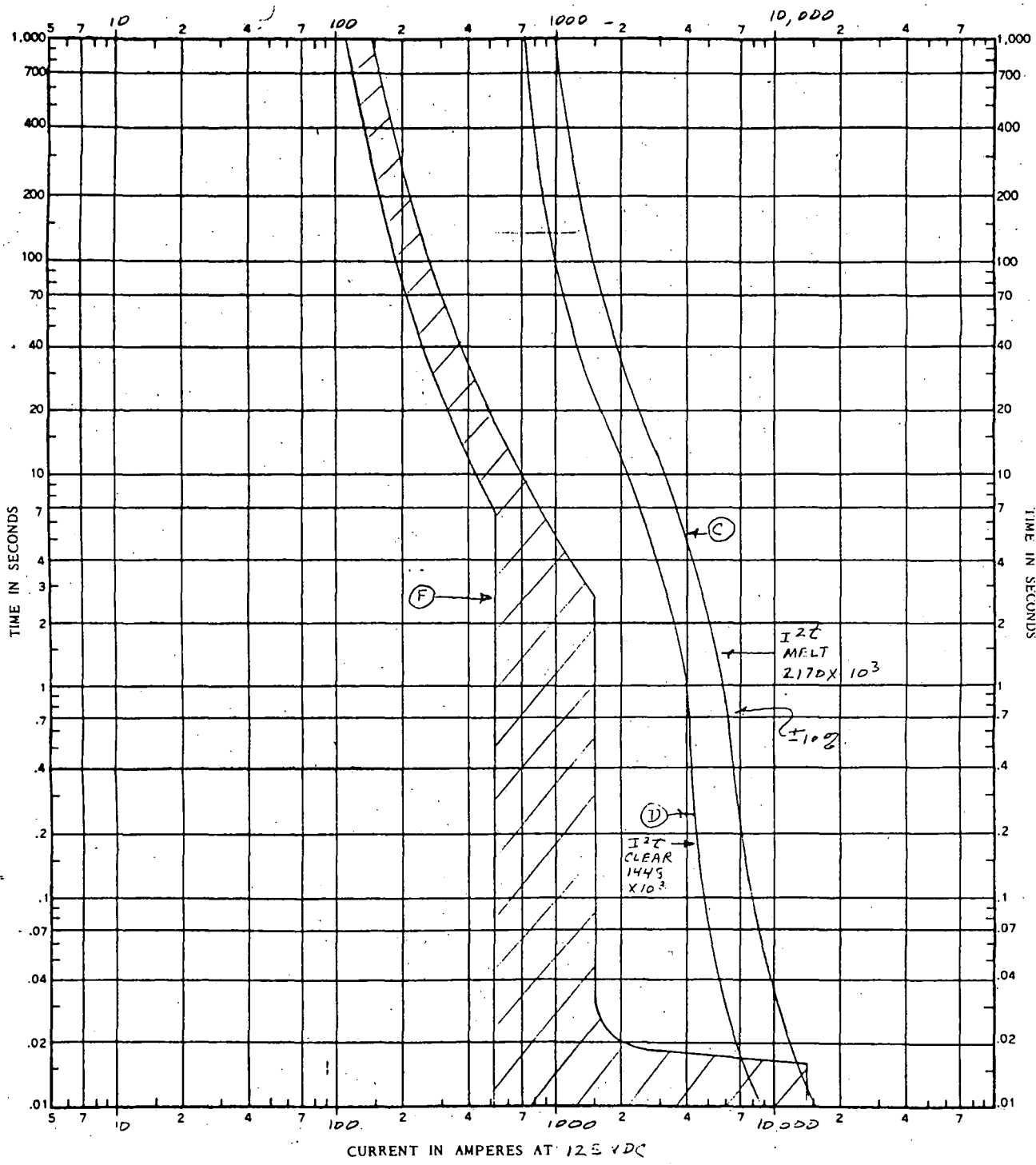
B. Rybak

Nuclear Licensing Administrator

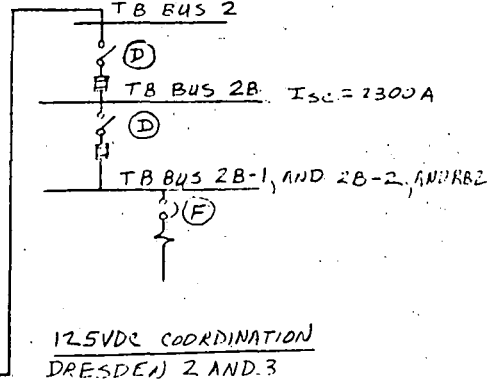
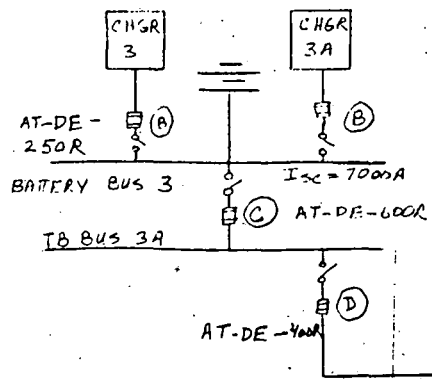
lm

cc: NRC Resident Inspector

Attachments: 1) Overall Key Diagram - 125 VDC -
Drawing 12E-2322B1, B2
2) Coordination Curves - 125VDC



CURRENT IN AMPERES AT 12.5 VDC



SARGENT & LUNDY
ENGINEERS
6-15-70 250-198