



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

FEB 29 1984

MEMORANDUM FOR: Darrell G. Eisenhut, Director  
Division of Licensing

FROM: Frank J. Miraglia, Assistant Director  
for Safety Assessment, DL

SUBJECT: DIABLO CANYON: GE MAGNE-BLAST CIRCUIT BREAKERS

The following information is provided in response to your request marked on the enclosed note from Hans Schierling dated February 16, 1984.

The Diablo Canyon station uses a substantial number of the GE Magne-Blast breakers with the ML-13 operating mechanism for service at the 4 KV level. The Region reports that 21 of these breakers are in safety-related applications.

GE issued a Service Advice Letter dated February 17, 1977 on this breaker discussing a potential problem with the teflon sleeve bushings. The Region reports that the Diablo Canyon station has no record of receiving this vendor information and that the vendor has no record of having sent it to Diablo.

We talked with Mr. Dick Miller, Manager of Design Engineering at the GE Switchgear Division in Philadelphia, where the Magne-Blast breaker is manufactured. He stated that GE had experienced some batch-to-batch inconsistency problems with the "Tuf-Loc" bushings. Some bushings would not hold up, start to crush, and cause increased clearances in the operating mechanism. In his opinion, the increased clearances could cause difficulties in closing the breaker, but that the tripping function should not be affected greatly. Since the problem is batch-related, most of the teflon bushings are not affected. Therefore, GE's advice was to keep an eye on the breakers (i.e., increased surveillance) and, if problems developed, a bronze bushing could be used. The vendor advice did not request that all bushings be replaced. A copy of the GE letter is enclosed.

The Region told us that in September 1983 Diablo Canyon experienced "more than normal wear" on one of its Magne-Blast breakers. When one of the emergency diesel generator output breakers failed to close during a test, the teflon bushing was found deteriorated to the point of metal-to-metal contact. They also found some corrosion problems. At this point the licensee initiated an overhaul program for the Magne-Blast breakers. The Region stated that they are following this overhaul activity and will require, as a minimum, that the breakers in safety-related service be refurbished prior to criticality.

The specific questions raised by the project manager in the enclosed note are discussed below.

Contact:  
J. T. Beard, NRR  
x27465

840 5080280



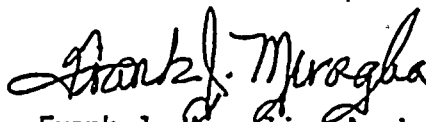
Darrell G. Eisenhut

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1. It this a generic problem? The Region initially thought that the problem was generic and accordingly sent a memo (dated February 23, 1984) to Ed Jordan. In our telecon on February 24, 1984, we pointed out that, while the Magne-Blast is believed to be used widely, our daily reviews of operating events are not showing problems with these breakers beyond an occasional random failure. We also asked AEOD to do a computer search of reported failures of Magne-Blast breakers. This search confirms that failures of this breaker are not occurring in significant numbers. Therefore, we and the Region now agree that this matter should not be treated as a generic problem. However, we do believe that IE should issue an Information Notice to assure that all licensees receive a copy of the GE Service Advice Letter.
2. Is complete resolution needed prior to criticality? As discussed above, the Region will assure complete resolution prior to criticality. We agree with this action. Since the licensee instituted an overhaul program in September 1983, completion is not expected to cause any undue delay in criticality.
3. Part 21 compliance? The licensee is considering the Part 21 aspects of the breaker problem now. The Region will followup to assure an appropriate conclusion.
4. What is the qualification of the breakers? Clearly, some of these breakers are in safety-related service. However, since they are located outside containment in non-hostile environments, the degree of special qualification beyond that for commercial service may be minimal. The Region will assure that each is appropriately qualified.

We will request that IE issue an Information Notice on the 1977 Service Advice Letter, by a separate memo.

We believe that the information above is sufficient to close-out this matter.



Frank J. Miraglia, Assistant Director  
for Safety Assessment, DL

Enclosures:  
As stated

cc w/enclosures:  
See next page

