



ENTERGY

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May 15, 1992

W. T. Cottle
Vice President
Operator
Grand Gulf Nuclear Station

U.S. Nuclear Regulatory Commission
Mail Station P1-137
Washington, D.C. 20555

Attention: Document Control Desk

Subject: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-29
Additional Information Concerning Primary Containment
Penetration
Conductor Overcurrent Protective Devices Technical
Specification Change Under Exigent Circumstances
Proposed Amendment to the Operating License (PCOL-92/04)

Reference: GNRO-92/00053, Letter Entergy Operations, Inc. to Nuclear
Regulatory Commission, Primary Containment Penetration
Conductor Overcurrent Protective Devices Technical
Specification Change Under Exigent Circumstances, Proposed
Amendment to the Operating License (PCOL-92/04), dated
May 6, 1992.

GNRO-92/00060

Gentlemen:

Entergy Operations, Inc. by this letter is submitting additional
information to support your review of the proposed amendment to the Grand
Gulf Nuclear Station Operating License transmitted via the above reference.
This letter and its attachments provide information to support Entergy
Operations' conclusion that the proposed breaker trip setpoints provide
adequate assurance that the associated primary containment electrical
penetration assemblies will perform their design function in the event of
an accident.

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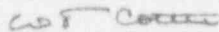
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The information supplied provides additional detail consistent with our original submittal, and does not affect the justification nor the No Significant Hazards Consideration presented in the reference for the proposed Technical Specification changes.

Yours truly,



WTC/BSF/ams

Attachments: 1. Response to NRC Questions
2. Coordination Curve for PCOL 92/4

cc: Mr. D. C. Hintz (w/a)
Mr. J. L. Mathis (w/a)
Mr. R. B. McGehee (w/a)
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A. General Information

The Grand Gulf Nuclear Station (GGNS) Updated Final Safety Analysis Report (UFSAR) section 8.3.1.2.3.1 discusses the design of the primary containment electrical penetration assemblies and their associated overcurrent protection. As discussed in the UFSAR, every circuit passing through primary containment penetrations is analyzed to ascertain that two separate and independent levels of overcurrent protection (primary and backup) are provided, where needed, for protection of the penetrations in accordance with Regulatory Guide 1.63, Revision 1, October 1972 (Reg Guide 1.63).

The breakers affected by the proposed changes to the breaker trip setpoints are the primary level of overcurrent protection for the associated primary containment electrical penetration assemblies. Neither the proposed changes to the Technical Specification breaker trip setpoints nor the associated design change affects the backup level (fuse) of overcurrent protection for these primary containment electrical penetration assemblies.

The primary containment electrical penetration assemblies affected by the proposed change are classified in the UFSAR as "Low Voltage Power - 3 Phase 480V." The fault current versus time protection for this classification of circuits is described in UFSAR section 8.3.1.2.3.1.b.3.

As discussed in the referenced letter proposing the changes in the Technical Specification breaker trip setpoints, the breaker trip setpoints are requested to be increased to 32 Amperes (A). The allowable setpoints are proposed to be increased to allow the replacement of the overcurrent protective devices to account for the larger valve actuator motors. This will ensure that the equipment will operate without inadvertent actuation of the protective devices. Spurious trip avoidance for these devices is based on the valve actuator motors' inrush current.

The proposed trip setpoints are high enough to prevent spurious tripping of the breakers while providing protection of the penetrations in accordance with the guidance of Reg. Guide 1.63. Proper coordination is maintained between the primary and backup penetration overcurrent protection and the penetration conductors.

B. NRC Question

On May 13, 1992 the NRC Project Manager for the GGNS site, Mr. P. W. O'Connor, in a telephone conversation identified that the NRC required additional information to support their review of the proposed Technical Specification change. During this conversation he identified that the following additional information was needed:

1. A time-current coordination curve showing both the primary containment electrical penetration assemblies and the proposed breaker setting, and

2. A definitive statement that the proposed breaker trip setpoints provided an adequate margin between the operation of the breakers and the rating of the primary containment electrical penetration assemblies.

C. GGNS Response

1. Attachment 2 to this letter provides time-current coordination curves of the proposed breaker trip setpoints in comparison to the associated backup overcurrent protection and the primary containment electrical penetration assemblies being protected. The information on Attachment 2 was developed for your use from design information and is typical for the affected containment penetrations.
2. The primary containment electrical penetration assemblies affected by the proposed Technical Specification change are constructed with a #6 AWG feedthru conductor. Attachment 2 shows the ratings of the feed thru conductors for postulated short circuit fault currents. As shown by Attachment 2, the proposed trip setpoints for these breakers of 32A, is within the ratings of the feedthru conductors for postulated short circuit fault currents, thereby, assuring adequate protection of the affected electrical penetration assemblies.

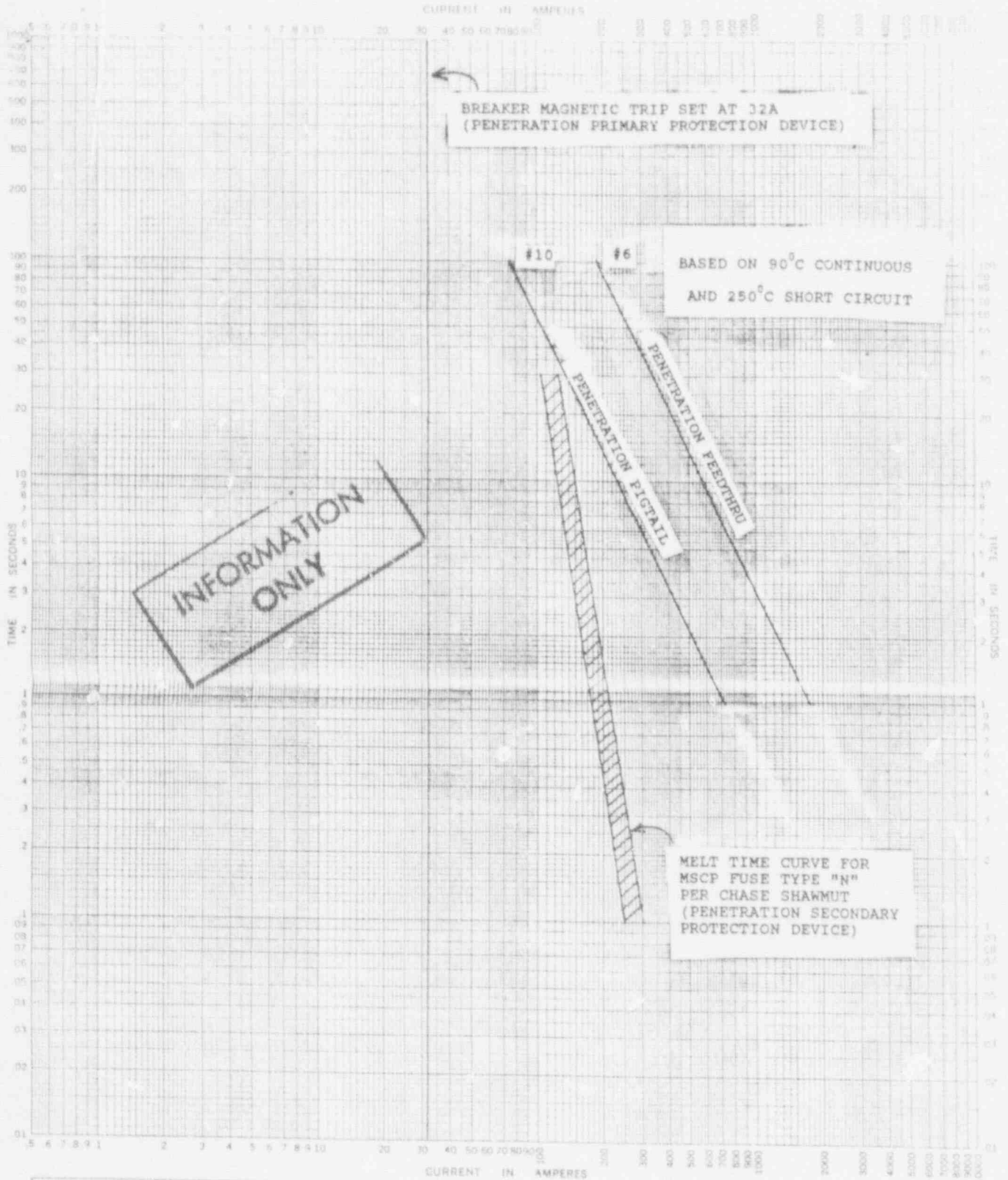
Another part of the primary containment electrical penetration assemblies are their associated pigtail conductors. The pigtail conductors link the feed thru conductors to the rest of the circuit. The proposed changes in the design of these circuits also protects these conductors. The primary containment electrical penetration assemblies affected by the proposed Technical Specification change are constructed with a #10 AWG pigtail conductor. The full load current (FLA) rating for the new valve actuator motor is 2.3A at 460 volts (V). The approximate locked rotor current is 6 X FLA or 13.8A. Per the GGNS Specification for Containment Penetrations, the #10 AWG pigtail is rated to carry 17A continuously (as shown on Attachment 2 the fault current rating is much higher) under both normal and accident conditions. Therefore, this conductor is rated to conduct the locked rotor current of the subject motors for an indefinite period of time. This bounds any postulated overload condition. Attachment 2 shows the ratings of the pigtail conductors for postulated short circuit fault currents. As shown by Attachment 2, the proposed trip setpoints for these breakers of 32A, is within the ratings of the pigtail conductors for postulated short circuit fault currents, thereby, assuring adequate protection of the affected electrical penetration assemblies.

As shown by Attachment 2, should a fault occur on the feeder cable on the containment side of the penetration, the primary and secondary penetration protection devices will limit this fault current to acceptable levels thus protecting both the penetration

pigtail and feedthru conductors as indicated on the attached diagram. The proposed trip setpoints for these breakers of 32A, is within the ratings of the primary containment electrical penetration assemblies for postulated short circuit fault currents, thereby, assuring adequate protection of the affected assemblies.

F. Reference

GNRO-92/00053, letter Entergy Operations, Inc. to Nuclear Regulatory Commission, Primary Containment Penetration Conductor Overcurrent Protective Devices Technical Specification Change Under Exigent Circumstances, Proposed Amendment to the Operating License (PCOL-92/04), dated May 6, 1992.



COORDINATION CURVE FOR PCOL 92/4 TIME-CURRENT CHARACTERISTIC CURVES

For _____ Fuse Links in _____

BASIS FOR DATA Standards _____ Dated _____

1. Tests made at _____ Volts a-c at _____ p.f., starting at 25°C with no initial load

2. Curves are plotted to _____ Test points so variations should be _____

No. _____
Date _____