SSINS No.: 6835
IN 85-16

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

February 27, 1985

IE INFORMATION NOTICE NO. 85-16: TIME/CURRENT TRIP CURVE DISCREPANCY OF ITE/SIEMENS-ALLIS MOLDED CASE CIRCUIT BREAKER

Addressees:

All holders of a nuclear power plant operating license (OL) or a construction permit (CP).

Purpose:

This information notice is to alert addressees of a potentially significant discrepancy pertaining to the time/current trip curves provided with a certain molded-case circuit breaker manufactured by the ITE/Siemens-Allis Corporation, Philadelphia, Pennsylvania. It is expected that recipients will review the information for applicability to their facilities, if appropriate, to preclude a similar problem occurring at their facilities. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or response is required.

Description of Circumstances:

The staff recently received information from the Seabrook Nuclear Station describing a deficiency of the magnetic instantaneous trip element in the ITE/Siemens-Allis HE-3-M040 molded-case circuit breaker. These circuit breakers were housed in electrical panels supplied by Gould, Inc., Westminister, Maryland. The deficiency was discovered during the testing of an incoming shipment of these breakers. Specifically, the licensee reported that testing of an incoming shipment of 15 of these ITE/Siemens-Allis circuit breakers revealed that 10 of the 15 failed to pass the instantaneous magnetic overcurrent trip test. The pickup current values for the failed trip elements were higher than the published ITE time-current curve for this type of circuit breaker. However, the licensee also reports that approximately 75 of the same model of ITE/Siemens-Allis circuit breakers supplied in previous shipments have tested satisfactorily.

Further investigation into the problem by the manufacturer led to the conclusion that the time-current curve provided with the circuit breaker is incorrect. The correct time-current trip range should be 600 to 1000 amperes and not 400 to 700 amperes as previously published by the manufacturer. The manufacturer is now reissuing a new set of correct time-current curves that reflect the trip range of 600 to 1000 amperes.

National Electrical Manufactures Association (NEMA) Standard AB-2 specifies that the acceptable trip range during verification testing of the molded case circuit breaker is between .75 of the lower limit and 1.4 of the upper limit. Therefore, the acceptable trip range for verification testing should be 450 to 1400 amperes and not 300 to 980 amperes which was being used by the Seabrook Nuclear Station. A copy of the letter from ITE/Siemens-Allis to Gould Inc., discussing details surrounding the deficiency and corrective actions regarding the ITE HE-3-M040 molded-case circuit breaker is attached for your information and use.

It is our understanding that Gould Inc. has committed to performing 100% inspection on all new or replacement circuit breakers to ensure that required time-current trip range limits are being met when tested one pole at a time (there are three poles to each molded case circuit breaker).

It should be noted that the changes in the published time-current trip range could affect the coordination between breakers at your facility.

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the Regional Administrator of the appropriate regional office or this office.

Edward L. Jordan, Director
Division of Emergency Preparedness
and Engineering Response
Office of Inspection and Enforcement

Technical Contact: V. D. Thomas, IE
(301) 492-4755

Attachments:
1. ITE/Siemens-Allis letter to Gould Inc. dated January 11, 1985
2. List of Recently Issued IE Information Notices

I-T-E Electrical Products
A Division of Siemens-Allis, Inc.

I-T-E Electrical Products
3496 Montreal Industrial Way
Tucker, GA 30084
(404) 939-7530

January 11, 1985

Gould, Inc. Industrial Controls Division
2002 Bethel Road
Westminster, MD 21157

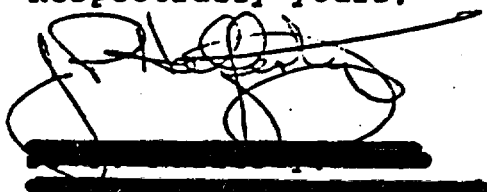
Attn: Mr. Michel Fenneteau
Quality Manager

Subject: Circuit Breakers - Catalog HE3-M040

As you know, engineering control of the subject breaker is now the responsibility of the Siemens-Allis, I-T-E Electrical Products development group here in Tucker, GA. You questioned the proper magnetic tripping range for the subject breaker. Our investigation and review of the breaker construction indicates this to be 600 to 1000 Amperes. This is identical to HE "M" type breakers rated 50 to 100 Amps. Time response curve TD-4999, Rev. 3, Sheet 2 of 2, dated December 8, 1976 is incorrect since it shows the Fixed Instantaneous Trip range for the 40 Amp rating to be 400-700. I have issued instructions to have this information corrected. The same armature spring which controls the magnetic tripping level is used throughout the 40 to 100A range on the HE "M" type.

[redacted]

Respectfully yours,



[redacted]

Attachment 2
IN 85-16
February 27, 1985

LIST OF RECENTLY ISSUED
IE INFORMATION NOTICES

Information Notice No.	Subject	Date of Issue	Issued to
85-15	Nonconforming Structural Steel For Safety-Related Use	2/22/85	All power reactor facilities holding an OL or CP
85-14	Failure Of A Heavy Control Rod (B4C) Drive Assembly To Insert On A Trip Signal	2/22/85	All power reactor facilities holding an OL or CP
85-13	Consequences Of Using Soluble Dams	2/21/85	All BWR and PWR facilities holding an OL or CP
85-12	Recent Fuel Handling Events	2/11/85	All power reactor facilities holding an OL or CP
85-11	Licensee Programs For Inspection Of Electrical Raceway And Cable Installation	2/11/85	All power reactor facilities holding a CP
85-10	Posttensioned Containment Tendon Anchor Head Failure	2/6/85	All power reactor facilities holding an OL or CP
85-09	Isolation Transfer Switches And Post-Fire Shutdown Capability	1/31/85	All power reactor facilities holding an OL or CP
85-08	Industry Experience On Certain Materials Used In Safety-Related Equipment	1/30/85	All power reactor facilities holding an OL or CP
85-07	Contaminated Radiography Source Shipments	1/29/85	All NRC licensees authorized to possess industrial radiography sources
85-06	Contamination of Breathing Air Systems	1/23/85	All power reactor facilities holding an OL or CP

OL = Operating License
CP = Construction Permit