TIC

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

August 27, 1980

Docket Nos. 50-317
50-318

Baltimore Gas and Electric Company
ATTN: Mr. A. E. Lundvall, Jr.
Vice President, Supply
P. O. Box 1475
Baltimore, Maryland 21203

Gentlemen:

The enclosed IE Information Notice No. 80-31, "Maloperation of Gould-Brown Boveri Type 480 Volt Type K-600S and K-DON 600S Circuit Breakers," is forwarded to you for information. No written response is required. If you desire additional information regarding this matter, please contact this office.

Sincerely,

Boyce H. Grier

Boyce H. Grier
Director

Enclosures:
1. IE Information Notice No. 80-31
2. List of Recently Issued IE Information Notices

CONTACT: S. D. Ebneter
(215-337-5283)

cc w/encls:
R. M. Douglas, Manager, Quality Assurance
L. B. Russell, Plant Superintendent
T. Sydnor, General Supervisor, Operations QA
R. C. L. Olson, Principal Engineer
J. Deegan, Assistant General Supervisor, Programs Unit
J. A. Tiernan, Manager, Nuclear Power
R. E. Denton, General Supervisor, Training and Technical Services

SSINS No.: 6870
Accession No.:
8006190040
IN 80-31

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

August 27 , 1980

IE Information Notice No. 80-31: MALOPERATION OF GOULD-BROWN BOVERI 480 VOLT-TYPE K-600S AND K-DON 600S CIRCUIT BREAKERS

Description of Circumstances:

The Cincinnati Gas & Electric Company reported problems with the Gould-Brown Boveri Type K-600S and K-DON 600S circuit breakers used in 480 volt a.c. circuits at the William H. Zimmer nuclear stations. The problem involved inadvertent circuit breaker closure during operation of the breaker charging springs when the breaker was racked out to the test position.

The problem resulted from the use of undersized bushings in the circuit breaker secondary close latches. The undersized bushings caused the secondary close latch to hang-up on the shunt trip device resulting in an inadvertent circuit breaker closure when the spring charging motor was energized.

The vendor has stated that the problem does not exist during normal operations with the circuit breaker in the connected position.

Recommended Action for Licensees and Holders of Construction Permits:

All licensees of operating nuclear power reactors and holders of construction permits should be aware of the potential problems described above. The vendor has stated that a small number of circuit breakers were assembled with undersized secondary latch bushings between 1969 and 1977. It is recommended that the following actions be taken:

(1) Determine if the subject circuit breakers are installed in any safety-related application at your facility. The affected circuit breakers are manufactured by Gould-Brown Boveri and are types K-600S and K-DON 600S, 480-volt a.c. electrically operated, drawout type with static trip device.

(2) If it is determined that your facility has the circuit breakers described in Item (1) above, perform the K-600S, K-DON 600S Field Test Procedure attached to this information notice (Gould-Brown Boveri I.B.-9.1.7-6 Issue F, Addendum 2, dated March 4, 1980).

(3) If maloperation of the circuit breaker occurs during performance of the field test procedure described in Item (2) above, perform the corrective action described in the attached field test procedure (installation of a 0.050 shim to the secondary close latch and retest of the circuit breaker).

No written response to this information notice is required; however, if additional information is required, contact the Director of the appropriate NRC Regional Office.

Enclosure:
Excerpt from Gould-Brown Boveri
Letter to NRC Region III dated
June 2, 1980.

IN 80-31
August 27, 1980

Excerpt from Gould-Brown Boveri I.B.-9.1.7.6 Issue F, Addendum 2, Page 1, dated March 4, 1980

K-600S, K-DON 600S FIELD TEST PROCEDURE

CAUTION: REFER TO I.B-9.1.7-6 FOR CIRCUIT BREAKER INSTRUCTIONS AND SAFETY PROCEDURES

A. This procedure is to be performed to determine if the secondary close latch hangs up on the shunt trip device causing inadvertent closing of the circuit breaker at the completion of the closing springs charging.

1. Rack out the circuit breaker to the test position.

2. Move the toggle switch to the "on" position to charge the closing springs.

3. Move the toggle switch to the "off" position.

4. Perform a trip free operation by holding the manual red trip button in and lifting the manual close lever to discharge the closing springs. (The breaker should not close)

5. Move the toggle switch to the "on" position to charge the closing springs. Note at the end of the charging if the breaker inadvertently closed.

6. If the breaker closed during Step 5, then it has failed and a 0.050 shim must be added per page 2 of this procedure.

7. If the breaker did not inadvertently close during Step 5, then Steps 3 thru 5 should be repeated twelve times without failure. A 0.050 shim must be added if any failures occur.

B. If it was necessary to install a 0.050 shim, then repeat Steps 3 thru 5 twelve times to check that the breaker does not inadvertently close.

IN 80-31
August 27, 1980

Excerpt from Gould-Brown Boveri I.B.-9.1.7-6 Issue F, Addendum 2, Page 2, dated March 4, 1980

PROCEDURE FOR ASSEMBLING SHIM IN K-600S, K-DON 600S BREAKER WITHOUT REMOVING THE OPERATING MECHANISM

CAUTION: REFER TO I.B-9.1.7-6 PAGE 10 FOR CIRCUIT BREAKER REMOVAL (DRAWOUT TYPE) BEFORE PROCEEDING.

DISASSEMBLY:

1. Tilt breaker back, loosen wires by removing cleat 650441-D, from left side of breaker frame.

2. Remove relay from bottom of breaker by removing screws that hold relay. Do not disconnect wires.

3. Block jack bar open to move arm away from mag-latch.

4. Enter through left side of breaker and remove three screws, 54341-E2, that hold the mag-latch to the mechanism side plate. Slide mag-latch and shunt trip away from mechanism frame. Use care not to disconnect spring, 650216-A11, between primary latch and mag-latch.

ASSEMBLY:

1. Slide shim, 711917-B, in between mechanism side plate and mag-latch and reattach mag-latch with longer screws, 54341-E3

2. Tighten screws, making sure spring, 650216-A11, is connected.

3. Replace parts in reverse order.