

POWER REACTOR

EVENT NUMBER: 24505

FACILITY: BROWNS FERRY
UNIT: [1] [2] [3]
RX TYPE: [1] GE-4, [2] GE-4, [3] GE-4

REGION: 2
STATE: AL

NOTIFICATION DATE: 10/27/92
NOTIFICATION TIME: 08:24 [ET]
EVENT DATE: 10/27/92
EVENT TIME: 00:00[CST]
LAST UPDATE DATE: 10/27/92

NRC NOTIFIED BY: EARL RIDGELL
HQ OPS OFFICER: THOMAS ANDREWS

NOTIFICATIONS

EMERGENCY CLASS: NOT APPLICABLE
10 CFR SECTION:
CCCC 21.21 UNSPECIFIED PARAGRAPH

UNIT	SCRAM CODE	RX CRIT	INIT PWR	INIT RX MODE	CURR PWR	CURR RX MODE
1	N	N	0	REFUELING	0	REFUELING
2	N	Y	89	POWER OPERATION	89	POWER OPERATION
3	N	N	0	REFUELING	0	REFUELING

EVENT TEXT

THE FOLLOWING INFORMATION WAS RECEIVED VIA FACSIMILE.

COMPONENT OR SYSTEM IDENTIFICATION:

GENERAL ELECTRIC AK CIRCUIT BREAKER, RMS-9 TRIP DEVICES WITH INSTANTANEOUS TRIP ADJUSTMENT

SUPPLIER:

GENERAL ELECTRIC (GE) CORPORATION

NATURE OF DEFECT OR NONCOMPLIANCE AND CAUSE:

THE 480 VOLT DISTRIBUTION SYSTEM AT BROWNS FERRY HAS EXPERIENCED EXTREMELY SHORT DURATION, HIGH AMPLITUDE CURRENT TRANSIENTS THAT WILL CAUSE THE RMS-9 UNIT TO TRIP. THE RMS-9 TRIP DEVICE WAS CERTIFIED BY GE AS SUITABLE REPLACEMENT FOR THE EC TRIP UNITS THAT WERE PREVIOUSLY INSTALLED IN GE AK CIRCUIT BREAKERS. PER GE, TO PREVENT SPURIOUS TRIPS, A HOLD-OFF CIRCUIT ENSURES THAT THE FAULT CONDITION PERSISTS FOR A SUFFICIENT DURATION TO INSURE THAT A TRIP SIGNAL WITH DURATION OF OVER 300 MICRO SECONDS FOR THE RMS-9 TO INITIATE AN INSTANTANEOUS TRIP SIGNAL. HOWEVER, SUBSEQUENT TESTING DEMONSTRATED THAT THE RMS-9 UNIT WILL TRIP IN RESPONSE TO A 100 MICRO SECOND PULSE WIDTH IF THE CURRENT VALUE IS SUFFICIENTLY ABOVE THE INSTANTANEOUS SETPOINT.

EXTEND OF SAFETY HAZARD:

TENNESSEE VALLEY AUTHORITY HAD INSTALLED A LIMITED NUMBER (6) OF GE AK CIRCUIT BREAKERS WITH RMS-9 TRIP DEVICES IN THE 480 VOLT DISTRIBUTION SYSTEM FOR UNITS 1 AND 3 AND HAD PLANNED TO INSTALL THESE BREAKERS THROUGHOUT THE 480 VOLT DISTRIBUTION SYSTEM FOR ALL THREE UNITS. THE OPERABILITY OF THE INSTALLED CIRCUIT BREAKERS HAS BEEN EVALUATED AND

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DETERMINED TO HAVE NO ADVERSE EFFECT ON PLANT OPERATION. HAD THE RMS-9 CONVERSION BEEN COMPLETED PRIOR TO DISCOVERY OF THIS DEVIATION, AN ELECTRICAL SYSTEM DISTURBANCE COULD HAVE RESULTED IN TRIPPING OF THE SAFETY RELATED MOTORS RECEIVING MOTIVE POWER FROM ONE 480 VOLT SHUTDOWN BOARD WHILE A SINGLE FAILURE COULD HAVE DISABLED THE REMAINING DIVISION'S BOARD, RESULTING IN THE LOSS OF BOTH DIVISION I AND DIVISION II MOTORS FED FROM THE 480 VOLT SHUTDOWN BOARDS.

DATE WHICH INFORMATION OF DEFECT OR NONCOMPLIANCE WAS OBTAINED:
OCTOBER 16, 1992.

NUMBER OF IDENTICAL COMPONENTS IN USE OR SUPPLIED:
SIX INSTALLED, TWENTY-THREE IN WAREHOUSE.

LOCATION OF INSTALLED COMPONENTS:

480 VOLT SHUTDOWN BOARDS 1A (COMPT. 3D - UNIT 1 I&C BUS A AND COMPT. 5A - CONTROL AIR COMPRESSOR A), 1B (COMPT. 3D - UNIT 1 I&C BUS B), 2A (COMPT. 5A - CONTROL AIR COMPRESSOR D), 3A (COMPT. 2B - UNIT 3 I&C BUS A) AND 3B (COMPT. 5B - UNIT 3 I&C BUS B).

CORRECTIVE ACTION AND RECURRENCE CONTROL TAKEN OR TO BE TAKEN:
DISCONTINUED INSTALLATION OF RMS-9 WITH INSTANTANEOUS TRIP FUNCTION.

EXPECTED COMPLETION DATE:
TO BE DETERMINED.