M S D inc.
700 Orange St.
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Engineering Department
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April 19, 1996

FAX TO:
U.S. Nuclear Regulatory Commission
Operations Center

SUBJECT: Report of discovered defect

Gentlemen;
It has come to our attention that a quantity of Struthers-Dunn type 236APX135NE time delay relays built in 1983 have incorrect coils in them. Specifically, the affected relays contain 39 gauge coils, they should have 43 gauge. As a result, the coils consume several times the required power which is dissipated as heat, and upon prolonged energization may overheat to the point of self-destruction. We have one such occurrence to date.

We believe the defect was caused by person or persons who relied on memory rather than documentation when building these devices. They were intended for use on 125 volt DC circuits; the coils installed are those normally used on 120 volt AC. Since the relays would function properly for brief periods, the defect was obviously overlooked.

To date we have found nine relays as described, all at Georgia Power's Plant Hatch. All are date coded 8335, which indicates they were built in the 35th week of 1983. We are of the opinion this was the only time this occurred, but there is no way to prove it. All indications are the documentation in effect at the time was, had been, and still is correct.

Fortunately, these relays' coils are clearly marked, and verification of correct coil gauge can be accomplished with a visual inspection. The markings consist of the basic coil part number which may be either 45769 or 45770, followed by a dash, followed by the wire gauge number. Some gauges, such as the 43, may be followed by a letter (43 is usually followed by "C"). On the 45769, the wire code is followed by "X". Thus, the incorrect coils are marked 45769-39X; a correct coil for this relay would be marked either 45769-43CX or 45770-43C. In any case, the coils are also marked beneath the part number with a four-digit date code. We strongly recommend any facility that may have additional affected product inspect their installations immediately, and to replace any relays found to have incorrect coils. Again, we believe Plant Hatch has the only ones, but we cannot be

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certain.

Since the assets of Struthers-Dunn were acquired in 1990 by MSD, inc. there really is no recourse to be taken. At MSD, we feel we have sufficient safeguards in place to prevent occurrences as described above. We also stand ready to render whatever advice or assistance you or any user of these products may require. If anyone has any question or problem, they are invited to call. In addition to the numbers above, my direct phone line is (803) 395 8512. Please feel free to distribute copies of this letter as you see fit.

Sincerely,

Thomas R. Mahaffey
Product Engrng. Mgr.

cc: J. Steinback
D. Scimeca
T. Metzler

GENERAL INFORMATION or OTHER

EVENT NUMBER: 30322

LICENSEE: MSD, INC
CITY: DARLINGTON REGION: 2
COUNTY: STATE: SC
LICENSE#: AGREEMENT: Y
DOCKET:

NOTIFICATION DATE: 04/19/96
NOTIFICATION TIME: 12:03 [ET]
EVENT DATE: 04/19/96
EVENT TIME: 00:00[EDT]
LAST UPDATE DATE: 04/19/96

NOTIFICATIONS

NRC NOTIFIED BY: MAHAFFEY
HQ OPS OFFICER: BOB STRANSKY

VERN HODGE NRR

EMERGENCY CLASS: NOT APPLICABLE
10 CFR SECTION:
CDEF 21.21(b)(2) DEFECTS/NONCOMPLIANCE

EVENT TEXT

PART 21 REPORT - INCORRECT COILS INSTALLED IN TIME DELAY RELAYS

THE FOLLOWING IS TEXT EXCERPTED FROM A FACSIMILE SUBMITTED BY THE VENDOR:

"IT HAS COME TO OUT ATTENTION THAT A QUANTITY OF STRUTHERS-DUNN TYPE 236ABX135NE TIME DELAY RELAYS BUILT IN 1983 HAVE INCORRECT COILS IN THEM. SPECIFICALLY, THE AFFECTED RELAYS CONTAIN 39 GAUGE COILS; THEY SHOULD HAVE 43 GAUGE. AS A RESULT, THE COILS CONSUME SEVERAL TIMES THE REQUIRED POWER WHICH IS DISSIPATED AS HEAT, AND UPON PROLONGED ENERGIZATION MAY OVERHEAT TO THE POINT OF SELF-DESTRUCTION. WE HAVE ONE SUCH OCCURRENCE TO DATE.

WE BELIEVE THE DEFECT WAS CAUSED BY PERSON OR PERSONS WHO RELIED ON MEMORY RATHER THAN DOCUMENTATION WHEN BUILDING THESE DEVICES. THEY WERE INTENDED FOR USE ON 125 VOLT DC CIRCUITS; THE COILS INSTALLED ARE THOSE NORMALY USED ON 120 VOLT AC. SINCE THE RELAYS WOULD FUNCTION PROPERLY FOR BRIEF PERIODS, THE DEFECT WAS OBVIOUSLY OVERLOOKED.

TO DATE, WE HAVE FOUND NINE RELAYS AS DESCRIBED, ALL AT GEORGIA POWER'S PLANT HATCH. ALL ARE DATE CODED 8335 WHICH INDICATES THEY WERE BUILT IN THE 35TH WEEK OF 1983. WE ARE OF THE OPINION THIS WAS THE ONLY TIME THIS OCCURRED, BUT THERE IS NO WAY TO PROVE IT ... FORTUNATELY, THESE RELAYS' COILS ARE CLEARLY MARKED, AND VERIFICATION OF CORRECT COIL GAUGE CAN BE ACCOMPLISHED WITH A VISUAL INSPECTION ... AGAIN, WE BELIEVE PLANT HATCH HAS THE ONLY ONES, BUT WE CANNOT BE CERTAIN."

THE ASSETS OF STRUTHERS-DUNN WERE PURCHASED IN 1990 BY MSD, INC.

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