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September 20, 1984

Dr. Thomas E. Murley, Administrator
U. S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region I
631 Park Avenue
King of Prussia, Pennsylvania 19406

Dear Dr. Murley:

SIGNIFICANT CONSTRUCTION DEFICIENCY
GENERAL ELECTRIC "HEA" RELAYS
HOPE CREEK GENERATING STATION

On May 2, 1984, a verbal report was made to Region I, Office of Inspection and Enforcement representative, Mr. E. C. McCabe, advising of a potentially significant construction deficiency concerning HEA relays supplied by General Electric. On June 1, 1984, an interim report was sent to your office. The following final report is provided in accordance with 10CFR50.55(e).

Description of the Deficiency

General Electric indicated in Service Advice Letter PSM 175.1 that HEA relays manufactured between September, 1980 and August, 1983 may exhibit trip force values which could cause misoperation. The potential for malfunction is related to a minor design change that was implemented during the above time frame. General Electric recommended that all HEA relays manufactured between the above dates, corresponding to date codes KS, LS, MS, AT through MT, AU through MU, and AW through HW, should be checked to determine the force required to trip the relay; and that any HEA relay not meeting specification be replaced. Our Architect/Engineer and Constructor, Bechtel, advised us that thirteen (13) HEA relays installed in safety

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related systems failed to meet the specified trip force values when tested in accordance with General Electric's instructions. Bechtel issued Nonconformance Report No. 3108 to document and control the discrepant hardware.

During a review of QA Information Flyers and Problem Investigation Requests conducted by Bechtel's Site QA organization, an additional potential deficiency was identified concerning HEA relays. General Electric advised in Service Advice Letter PSM 165.1 that some of the HEA relays manufactured between May, 1979 and December, 1980 may fail to operate due to malformed torsion springs. General Electric recommended that all HEA relays manufactured between the above dates, corresponding to date codes ER, FR, GR, HR, JR, KR, LR, MR, AS, BS, CS, DS, ES, FS, GS, HS, JS, KS, LS and MS, be tested to verify that they will operate at the minimum voltage for the specific relay rating. Bechtel issued Nonconformance Report No. 2264 to document and control the suspect hardware.

Corrective Action

The thirteen (13) HEA relays that failed to meet the specified trip force values have been removed from the equipment and shipped offsite. Twelve (12) of the relays have been replaced with acceptable spares drawn from storage. Closure of Nonconformance Report No. 3108 is pending receipt and installation of the one remaining HEA relay.

All twenty-six (26) potentially defective relays have been replaced with HEA relays with acceptable date codes. Given the nature of the potential deficiency (i.e., malformed torsion springs), Bechtel Engineering elected to replace the twenty-six (26) HEA relays identified rather than test them for performance at the minimum voltage.

Safety Analysis

The HEA relays in question are Class 1E safety related components installed in systems required for safe operation

and shutdown of the plant. It has been determined that failure of one or more HEA relays to perform as intended could adversely affect critical functions, to include the alignment of emergency power to Class 1E busses and Emergency Diesel Generator load shedding. We therefore consider this condition to be reportable in accordance with 10CFR50.55(e).

Very truly yours,



C Office of Inspection and Enforcement
Division of Reactor Construction Inspection
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