

September 19, 1985

AEOD/S503

MEMORANDUM FOR: H. R. Denton, Director
Office of Nuclear Reactor Regulation

FROM: C. J. Heltemes, Jr., Director
Office for Analysis and Evaluation
of Operational Data

SUBJECT: EVALUATION OF RECENT VALVE OPERATOR MOTOR BURNOUT EVENTS

We have continued to monitor operating experience reports involving valve failure to operate associated with valve operator motor burnout since this subject was addressed in the AEOD Case Study, C203, issued in May, 1982. This Case Study covered valve operator events during 1978, 1979, and 1980 and recommended that Regulatory Guide 1.106 be reassessed based on a relationship between valve operator motor burnout and the guidance in the Regulatory Guide to bypass motor thermal overload devices. The enclosed Special Report provides a limited review and evaluation of valve operator motor burnout events subsequent to the 1980 time frame addressed by C203.

References 3 and 4 of the enclosed AEOD Special Report indicate that NRR developed a proposed action plan to address the AEOD recommendations in Case Study C203 concerning bypassing of motor thermal overload devices, but the proposed plan has not yet been approved. This Special Report illustrates that - operating plants have not corrected this problem and thus corroborates the original recommendation. Although only a few events were reviewed and analyzed, the report identifies more than 200 valve operator motor burnout events including more than 180 events during the approximate four year time frame from 1981 to early 1985. The number of events during the most recent four years is significantly greater than the 19 events reported in AEOD/C203 for the preceding three years (1978, 1979, and 1980). This number of events - raises potential significant safety issues for the following reasons: (1) Motor operated valves are used extensively in safety systems where performance of the safety function requires that valves must open and/or close; (2) the motor failure mechanism can be common mode based on an overall plant philosophy covering thermal overload devices and surveillance procedures; (3) the failed motors can remain undetected for long periods of time; and (4) motor burnout has resulted in damage to the valve operator in a manner that prevented valve operation by either motor or manual drive mechanisms.

In view of this situation we recommend that you consider the findings of this report to expedite implementation of the NRR proposed plan to address motor burnout, including reassessment of Regulatory Guide 1.106.

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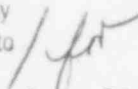
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Should you or your staff have any questions or require additional information, please call Mr. Karl Seyfrit or Mr. Earl J. Brown of my staff. Mr. Seyfrit can be reached at X24440 while Mr. Brown can be reached at X24437.

Original signed by
Thomas A. Ippolito



C. J. Heltemes, Jr., Director
Office for Analysis and Evaluation
of Operational Data

Enclosure:
As stated

cc w/enclosure:
R. B. Minogue, RES

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