



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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MEMORANDUM FOR: William Parler, Task Leader, Group 1
FROM: Wayne D. Lanning, Group 1 (NSGE)
SUBJECT: NONSAFETY GRADE EQUIPMENT TO MITIGATE TRANSIENTS

- References:
1. Memorandum, R. Tedesco to D. Vassallo, Board Notification - Recent Issue on Nonsafety Grade Equipment (NSGE) to Mitigate Transients, March 16, 1979
 2. Memorandum, D. Vassallo to G. Christenberry, Board Notification - Nonsafety - Grade Equipment to Mitigate Transients (BN-79-12), March 29, 1979
 3. Staff Discussion of 15 Technical Issues Listed in Attachment to November 3, 1976 Memorandum from Director, NRR to NRR Staff, NUREG-0138, November 1976.
 4. Memorandum, R. Tedesco to D. Vassallo, TMI-2, Input to SER Supplement No. 2, February 6, 1978

Reference 1 acknowledged that credit had been given for nonsafety grade equipment (NSGE); e.g., relief valves, pressurizer level, feedwater control system, etc., to mitigate anticipated operational transients. Furthermore, the reliability of such equipment had not been evaluated by the staff although GDC 29 requires "an extremely high probability of (systems) accomplishing their safety function." In addition, 10 CFR 50.55a requires that protection systems meet the appropriate edition of IEEE Standard 279. The Reference indicated that this issue was relevant to evaluating the consequence of transients for LWRs, particularly BWRs. Reference 2 transmitted Reference 1 to the Chief Hearing Counsel the day after the TMI-2 event. The cover letter stated that "it (use of NSGE to mitigate transients) is of no immediate safety significance but could lead to a change in staff practice in the future." Only BWRs operating experience had been reviewed in Reference 1. "Safety significance" is specifically restricted to exceeding the Safety Limits in the Technical Specifications. Evidently, exceeding the Limiting Conditions for Operation of the Technical Specifications is of no immediate safety significance since there are numerous LERs concerning deviation from these Technical Specifications. This raises the issue of whether the staff has been placing too much emphasis on design basis events (upper safety limits) rather than on

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operational occurrences and transients (margins to safety limits). This was the thrust of R. Fluegge's allegation and exemplified by staff responses concerning overpressure protection in Reference 3. It appears that the staff has been evaluating or should have been evaluating the acceptance of NSGE to mitigate transients since late 1976 (Reference 3).

Although Reference 1 focused on the staff having accepted NSGE to mitigate transients in BWRs, it appears that the same philosophy was applied for PWRs. For example, Reference 4 in the SER input approved both the pressurizer relief valve and the pressurizer level instrumentation and signals to provide overpressure protection during startup and shutdown. Similarly, for operating plants, credit was given for pressurizer relief valve (Reference 3).

In addition, there appears to be inconsistency in staff acceptance of NSGE to mitigate transients and accidents. Credit is given for NSGE to mitigate steamline breaks inside containment, but not for breaks outside containment.

In summary, the staff has identified the use of NSGE to mitigate transients as a generic issue. The staff has further acknowledged that the practice of accepting NSGE to mitigate transients may pose a safety problem and may require a change in staff practice. However, credit continues to be given for NSGE to mitigate transients and credit is given for NSGE as a backup to a single failure in safety grade components.

A followup action may be required to evaluate the staff philosophy of "safety significance."

Wayne D. Lanning
Wayne D. Lanning
Group 1

Where does this fit in to our report?

cc: Group 1