



UNITED STATES
NUCLEAR REGULATORY COMMISSION

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MEMORANDUM TO: William D. Travers

Executive Director for Operations

FROM:

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Office of Nuclear Regulatory Research

SUBJECT:

DPO PANEL REVIEW OF STEAM GENERATOR INTEGRITY

Your memorandum of December 29, 1998 on the same subject advised that the staff will forward their position on the DPO for my review and to an ad-hoc panel for final resolution following the public comment period on Draft DG-1074. It is now three months since public comments were received and I still have not seen the staff latest position regarding the DPO. Meanwhile, the staff continues to use arbitrary and non scientific methods in making changes to licensing amendments under the auspice of risk informed regulations. I am concerned that the public will be at risk if risk informed regulation is allowed to mask a procedure for reaching a desired outcome with inadequate analysis.

Recently, the staff employed risk informed approaches to provide regulatory relief to the Southern Nuclear Operating Company (1). The above evaluation is inadequate to justify relief. Neither the Southern Company nor the NRC staff showed that the large early release frequency (LERF) during cycle 16 will meet Commission safety goals and not exceed the DPO predicted value of 10E-4. Southern Company predicted that there was a high probability for short cracks to penetrate tubing wall at the end of the cycle. The DPO analysis shows that such cracks can lead to a rapid tube-to-tube propagation following main steam line break and station blackout accidents, leading to an unacceptable public risk. In granting relief to the Southern Company the staff dismissed this risk by merely stating that "the staff believes that a few short cracks are not likely to cause sufficient large failure of the primary to secondary boundary." This cavalier approach to serious safety issues disregards the guidance of the Standard Review Plan (SRP), chapter 16, on risk informed decision making. The SRP specifies that changes to technical specifications must be based on analysis and data uncertainties and not on beliefs. There is room for Informed judgement in risk analysis, however, given the history of staff inability to identify important accident phenomena the validity of "staff beliefs" must be seriously questioned. Allowing defective steam generators to remain in service represents a major revision to the FSAR and should be granted only after all uncertainties for tube-to-tube propagation have been considered.

It is of interest to note that Southern Nuclear endorsed the Nuclear Energy Institute (NEI) position, (2), that DG-1074 should not be issued because, among other deficiencies, it does not provide specific guidance and acceptance criteria for the consequences of severe accidents. When, however, the Southern Company stood to save \$30 million by avoiding a mid-cycle outage they apparently changed their position. It is difficult to understand how 10CFR100 dose requirements can be met when accident leakage uncertainties are very large.

Tube-to-tube failure propagation and the resulting primary to secondary leakage is an unresolved DPO issue which impacts 10CFR100 and safety goal calculations. The sole reliance on subjective judgements and the disregard these issues damages the credibility of risk informed regulations. To prevent erosion of public confidence, the NRC should institute controls to remove subjectivity and financial pressures before proceeding further with risk informed regulation. Risk informed regulations should not be allowed to be used selectively to obtain the desired results and be rejected when the answer shows an unacceptable core damage frequency.

After six years of failed attempts to obtain a resolution to the DPO I requested that an ad-hoc panel from outside the agency be selected to address the DPO issues. My request was rejected on the ground that it will take a long time to obtain a resolution if an outside panel is involved. It is now more than three years since that request was made, and the DPO remains unresolved. The reasoning of timeliness for not selecting an outside panel has proven to be invalid. Work initiation on the related HIGH priority GSI-163 has also been delayed with various excuses, for eight years.

It is very important to resolve the DPO and GSI-163 because they relate to accidents which were not foreseen when the plants were designed and therefore they were not included in the FSAR's. Given our present experience with steam generators tube corrosion, main steam line break accidents followed by rapid tube-to-tube propagation and containment bypass should be included in the analysis of license renewals. Consistent with ACRS recommendations (3), the 40% plugging rule should be delayed pending the resolution of the DPO and GSI-163.

In as much that NRC procedures for resolving my DPO and GSI-163 were ignored and staff attempts to address the related technical issues indicate poor analytical capabilities in accident transients, thermal-hydraulics, and radiation transport I reiterate my request that the formation of an ad-hoc panel from outside the agency be reconsidered.

cc: Chairman Dicus
Commissioner Diaz
Commissioner McGaffigan
Commissioner Merrifield
Sher Bahadur

REFERENCES

1. Letter, L.Mark Pedovan, U.S. NRC, " Joseph M. Farley Nuclear Plant, Unit 1, Issuance of Amendment RE: Cycle 16 Extension Request (TAC No. MA5356) ," August 17, 1999
2. Letter, Nuclear Energy Institute, " Transmittal of NEI Comment on Draft Regulatory Guide DG-1074, Steam Generator Tube Integrity (64 Fed. Reg. 3138) , June 29, 1999
3. Memo, T.S. Kress U.S. Nuclear Regulatory Commission Memorandum to J.M. Taylor, U.S. NRC " Proposed Rule on Steam Generator Integrity" May 13, 1997