

August 10, 2007

MEMORANDUM TO: Luis A. Reyes
Executive Director for Operations

FROM: Annette L. Vietti-Cook, Secretary /RA/

SUBJECT: STAFF REQUIREMENTS - SECY-07-0082 - RULEMAKING TO MAKE RISK-INFORMED CHANGES TO LOSS-OF-COOLANT ACCIDENT TECHNICAL REQUIREMENTS; 10 CFR 50.46A, "ALTERNATIVE ACCEPTANCE CRITERIA FOR EMERGENCY CORE COOLING SYSTEMS FOR LIGHT-WATER NUCLEAR POWER REACTORS"

The Commission has approved a modified Option 3. The Commission agrees with the staff recommendation that the rulemaking be given a medium priority, but that the 50.46a and 50.46b rulemakings should be given a higher priority than the Pressurized Thermal Shock (PTS) rulemaking effort, and that the LOOP-LOCA rulemaking priority should be lower than the one for PTS. The Commission expects the staff to make progress on the 50.46 rules and to apply resources to the effort in FY 2008. Additionally:

1. The final rule should require licensees to justify that the generic results in the revised NUREG-1829, "Estimating Loss-of-Coolant Accident Frequencies Through the Elicitation Process," are applicable to their individual plants. The staff should develop regulatory guidance that will provide a method for establishing this justification.
2. If a 50.46a rule is completed prior to revising 50.46b and license amendment applications using 50.46a are submitted, staff should ensure an appropriate safety margin for fuel clad integrity that will have high assurance of meeting the final acceptance criteria.
3. The staff should strengthen the assurance of defense-in-depth for breaks beyond the transition break size (TBS). In particular, the rule, in consonance with other applicable regulations, should not permit removal of existing mitigation equipment or alteration of mitigation capability without prior staff approval. However, equipment whose only function is to mitigate beyond TBS LOCAs should be permitted reclassification as non-safety. Other requirements to strengthen the assurance of defense in depth may include those already proposed by the ACRS, or alternatives developed by the staff including specific limits on the availability of equipment used to mitigate breaks beyond the TBS.
4. The revision of NUREG-1829 should be completed before the rule is finalized. The staff should incorporate, as appropriate, the changes resulting from the resolution of public comments to the final rule.

5. In order to more closely follow the approach presented in Regulatory Guide 1.174, the staff should modify the proposed rule to ensure that any changes under this rule be further restricted to very small risk increases, notwithstanding the fact that they would otherwise be permitted under 50.59. Therefore, staff should add the word "very" before the word "small" in section (f)(1)(i) so that it reads "...the total increase in core damage frequency and large early release frequency are very small and the overall risk remains small..." or make other changes as appropriate to achieve the above objective.
6. The staff should evaluate various approaches for enhancing the rule with requirements for improved leak detection methods and thorough diagnosis of observed defects for generic implications. Regulatory guidance for this rule should ensure that potentially significant defects are fully evaluated for generic implications. The staff should interact with the appropriate ASME codes and standards committees to explore ways to improve regulatory confidence that greater-than-TBS LOCAs remain an insignificant contributor to risk. Also, the staff should continue research activities that lead toward an improved understanding of aging mechanisms and fracture mechanics in support of more accurately predicting the likelihood of pipe breaks.

cc: Chairman Klein
Commissioner McGaffigan
Commissioner Jaczko
Commissioner Lyons
OGC
CFO
OCA
OPA
Office Directors, Regions, ACRS, ACNW, ASLBP (via E-Mail)
PDR