



UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D. C. 20555

Feb. 7, 2000

MEMORANDUM TO: ACRS Members and Staff
MEMORANDUM #: AWC-102.2000
FROM: A. W. Cronenberg
SUBJECT: Central Observations from Power Uprate Review

I believe my presentation to the ACRS on Power Uprates did not adequately focus on the primary observations noted from that review. This one-page memo is a follow-up to that presentation, where I summarize my primary observations.

Potential Synergistic Safety Issues: The original focus of my efforts were directed at an assessment of potential synergisms related to higher power levels when combined with component aging and extended-fuel life effects. Although several operational events point to evidence for compounding degradation due to increased flow and vibration (uprate effects) on corrosion (ageing effect) induced pipe ruptures, as well as control rod insertion problems for extended-life fuel assemblies (burnup effect) exacerbated at high-power core locations (uprate effect), a synergistic linkage is sketchy at best. My recommendation to ACRS is simply to encourage staff cognizance of potential synergistic concerns.

Adequacy Of Agency Uprate Review Procedures: The agency's Maine Yankee Lessons Learned effort indicated the need for a more comprehensive/consistent review of power uprate applications, with a primary recommendation for development of a Uprate Standard Review Plan. My observations concur with the Maine Yankee findings. An examination of agency uprate Safety Evaluation Reports (SERs) does not reveal consistency in the scope and level of detail of the subject matter reviewed. The SERs do not generally specify how the review was accomplished, the acceptance criteria for the conclusions reached, or include staff analysis (use of agency thermal-hydraulic and core physics codes) to audit the accuracy of information provided by the licensee. This type of information would normally be expected under stipulations of a Standard Review Plan.

Agency in-action for a more comprehensive uprate review process is being justified by risk arguments of minor changes in CDF for power uprates. This indeed may be the case, nevertheless operational events have been noted for uprated plants, as well as violations of Tech. Specs, and reductions in margins at ever-higher power levels. In light of these considerations, I recommend that ACRS encourage the development of a Uprate Standard Review Plan and the exercise of agency thermal-hydraulic and core physics codes to audit the accuracy of uprate submittals.