



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

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January 24, 2001

MEMORANDUM TO: T. Kress, Chairman, Severe Accident Management Subcommittee

FROM: P. Boehnert, Senior Staff Engineer *B*

SUBJECT: NRC/EPRI MEETING - MAAP COMPUTER CODE ISSUES, DECEMBER 15, 2000, ROCKVILLE, MARYLAND

The subject meeting was held between representatives of the NRC and the Electric Power Research Institute (EPRI) to discuss issues associated with use of the EPRI MAAP severe accident code. This meeting arose because licensees have either made use of the latest version of MAAP (MAAP 4.0.4), or have given indication of intent to use the code in support of license amendment requests (see below). NRR, for its part, has not performed a review of Version 4 of MAAP. A limited review of Version 3 was performed by the staff some time ago.

Highlights of the meeting included the following:

- Mr. J. Wermiel, NRR, noted that Dr. B. Sheron, NRR, had requested a briefing on the status of the use of the MAAP code. Mr. G. Vine, EPRI, noted during his opening remarks that Dr. Sheron had indicated that the staff did not intend to conduct a formal review of MAAP or issue a Safety Evaluation Report; rather, the staff wants to ensure it has an adequate knowledge base for confidence that the code is sufficiently robust for the conditions analyzed.
- R. Henry, FAI, provided a history of the MAAP code versions and its applications. He noted that the current version of the code (4.0) dates from 1994 and was designed to model severe accident behavior and the influence of recovery actions to support Severe Accident Management Guideline development for P & BWRs as well as ALWR plant designs. The code models core, RCS, and containment response and can support both Level 1 and Level 2 PRA success criteria. The

code also incorporates a dynamic benchmarking plan¹ to demonstrate its capabilities.

- A comparison of MAAP4 and SCDAP/RELAP5 calculational results was made by Mr. M. Kenton of Creare. The codes were applied to the problem of prediction of RCS behavior in high-pressure severe accidents to assess thermally-induced steam generator tube rupture (TISGTR). Suggestions were put forth as to what additional work should be done to reconcile the different results calculated by each code.
- EPRI discussed the anticipated usage of MAAP by the MAAP User Group (MUG). Based on a survey of the MUG, a limited number of licensees (~ 6) plan to use the code to support risk-informed licensing submittals within the next 1-2 years. These submittals will focus on allowable outage times, and inspection interval requirements.
- Following a staff caucus, Mr. Wermiel indicated that the staff will likely focus on a review of the MAAP code applications. The results of the review would be published in a NUREG report. The goal is to provide the industry with NRC's reaction to use of the code and stem any potential misuse in the future. The staff made a request for EPRI to provide the staff with information relative to benchmark calculations (e.g., MAAP4 analyses of the TMI-2 accident), and assessments of the code for the TISGTR calculation. EPRI committed to providing the staff with a template of the review scope it could support. The staff also said that its review would be conducted on a generic applicability basis, which would result in EPRI not having to pay review fees.

cc: Balance of ACRS Members
R. Savio

cc w/o attach (via E-mail):
J. Larkins
J. Lyons
S. Duraiswamy
ACRS Technical Staff & Fellows

¹ Dr. Henry is a proponent of dynamic benchmarking for all codes. He made a presentation before the ACRS on this matter during the Committee's May 1998 Meeting.