

May 6, 2004

Mr. Alex Marion
Director, Engineering
Nuclear Energy Institute
1776 I Street, NW, Suite 400
Washington, DC 20006-3708

SUBJECT: NRC STAFF STEAM GENERATOR SAFETY FACTOR REVIEW GROUP -
CONCLUSIONS

Dear Mr. Marion:

During a meeting with the NRC staff on January 21, 2004, industry representatives presented the status and Phase 2 plans for resolving issues relating to the steam generator structural integrity performance criteria (SIPC) which are part of the Nuclear Energy Institute (NEI) Steam Generator Generic License Change Package (GLCP) initiative. The industry representatives presented a version of the SIPC that its Phase 2 studies are intended to support. This version includes a 1.2 safety factor criterion applicable to combined primary loads during design basis accidents.

This letter is to inform you of conclusions reached by an ad-hoc NRC staff review group which met on March 22 and 23, 2004 to consider the 1.2 safety factor that the industry is expected to propose, including the industry's basis for this proposal. The staff review group participants are listed in the following enclosure. Three expert NRC contractors (also listed in the enclosure) assisted the staff during the review group meeting.

As a result of the meeting, the NRC staff review group reached the following conclusions:

1. The industry's assumption of a flow stress coefficient equal to 0.5 was reasonable for determination of collapse load under axial bending.
2. The industry's use of ASME Code minimum properties for determining plastic collapse is reasonable.
3. The industry utilized F-1331.1(c)(2) correctly in its development of the 1.2 safety factor.
4. The industry proposed 1.2 safety factor for combined primary loads has an adequate technical basis.

A. Marion

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5. NRC staff should follow up with industry regarding any needed changes to the forthcoming structural integrity criteria proposal with respect to the following:
 - a. The failure mode to which the 1.2 safety factor for combined primary loads should apply should be broadened from simply "burst" to encompass bending collapse;
 - b. For tubes with large circumferential flaws, it may be necessary to treat axial thermal loads as primary loads to ensure a conservative analysis.

Please contact Louise Lund (301 415-3248) should you have any questions concerning these findings.

Sincerely,

/RA/

Cathy Haney, Program Director
Policy and Rulemaking Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Enclosure: As stated

PARTICIPANTS
AT STEAM GENERATOR
SAFETY FACTOR REVIEW GROUP MEETING
MARCH 22 AND 23, 2004

Staff Review Group

William H. Bateman, NRR/DE/EMCB
A. Louise Lund, NRR/DE/EMCB
Kamal A. Manoly, NRR/DE/EMEB
Kenneth J. Karwoski, NRR/DE/EMCB
Keith R. Wichman, NRR/DE/EMCB
Emmett L. Murphy, NRR/DE/EMCB
James A. Davis, RES/DET/MEB

Staff Contractors

Gery M. Wilkowski, Engineering Mechanics Corporation of Columbus
William J. Shack, Argonne National Laboratory
Saurin Majumdar, Argonne National Laboratory

ENCLOSURE

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Project No. 689

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