



General Electric Company
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April 1, 1994

MFN No. 042-94
Docket No. 52-004

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Dennis M. Crutchfield, Associate Director
Advanced Reactors and License Renewal

Subject: Simplified Boiling Water Reactor (SBWR) Testing Program

Reference: Letter, Crutchfield (USNRC) to Marriott (GE), same subject,
dated March 7, 1994

This letter outlines the approach GE will undertake to address the issues identified in the Reference.

As background, the SBWR testing program evolved over several years under GE's leadership in association with DOE, EPRI, the University of California, the Massachusetts Institute of Technology, several consultants, and our International Technical Associates. Given this significant effort, and considering that the SBWR is an evolutionary step using demonstrated technology from operating reactors, GE is confident that a satisfactory basis can be developed for Certification.

Nevertheless, based on receipt of the referenced letter which culminates several years of dialog, GE plans to conduct a systematic reassessment of the SBWR test and analysis program. In this context we will review the existing BWR databases, and how they support the SBWR technology, as well as any unique features associated with the SBWR to ensure their adequacy for Certification. To provide additional assurance of the completeness of the testing and analysis program, upon completion of the reassessment we intend to conduct an independent oversight review using outside experts.

The reassessment will address and document the technical issues identified in the Reference. It will also provide the basis for documenting the adequacy of the overall testing approach. A comprehensive SBWR Test & Analysis Program Plan will be prepared; also, a revision to Section 1.5 of the SSAR, drawn from this

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documentation, will be submitted. An outline of the reassessment is enclosed for your information. Our intent is to initiate this effort in May and present the results to the Staff in July.

Sincerely,

P. W. Marriott for

P. W. Marriott, Manager
Advanced Plant Technologies

Enclosure

cc: S. M. Franks (DOE)
W. T. Russell (USNRC)
J. Santucci (EPRI)
D. R. Wilkins (GENE)

SBWR TEST AND ANALYSIS PROGRAM REASSESSMENT

PURPOSE

GE will perform a reassessment of the technology supporting the SBWR design, and specifically the adequacy of the test data supporting that technology. The reassessment will include the technology basis for all aspects of SBWR design. The purpose of this activity is twofold: first, to clearly establish an adequate testing basis for the SBWR design; and second, to form the framework of a convincing logic, to be submitted to the NRC staff, of the adequacy of that database.

STRUCTURE AND DELIVERABLES

The review will be structured as a top-down, disciplined, quantitative assessment. Following completion, conclusions of the reassessment will be reviewed by a team of independent experts. Any identified open items will be resolved. Following completion of the independent review, a concise SBWR Test & Analysis Program Plan and a revision to Section 1.5 of the SSAR will be prepared and submitted to NRC. The SBWR Test & Analysis Program Plan, and the ancillary documentation supporting it, comprise the deliverables for this activity.

METHODOLOGY

The reassessment will utilize existing information to the maximum extent possible. Features of the SBWR design will be listed, and phenomena important to that feature will be established using a process similar to the Phenomena Identification and Ranking Table (PIRT) method. High ranked items will then be quantitatively assessed to assure that models exist to capture the phenomena, and that test data exists or will be obtained, over the appropriate SBWR range, to support the analytical methods employed.

Concurrent with the top down technology reassessment, GE proposes to perform a LOCA margin assessment for the SBWR design. GE believes that one of the major strengths of the SBWR is the robustness of its design and the simplicity of its systems. A series of TRACG SBWR calculations will be performed to assess the margins in the design. These calculations will focus on expected SBWR performance, and take advantage of EOP and PRA results to establish likely operator actions and potential systems failures. Additionally, the calculations will be reviewed specifically with respect to potential systems interactions. The result of this assessment will be a quantification of the margins, and will be used

with the results of the test database assessment to determine any critical features where additional data or model improvements are required. As a result of this overall review and reassessment, any additional testing found necessary to support the SBWR design will be clearly identified.

SCHEDULE

GE proposes to perform the above assessments, and prepare for presentation of the conclusions to the independent review team by late-May 1994. Open items will be addressed, and the SBWR Test & Analysis Program Plan prepared and forwarded to the NRC in July, 1994.

TRM
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