



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555

May 26, 1992

Docket No. 52-001

Mr. Patrick W. Marriott, Manager  
Licensing & Consulting Services  
GE Nuclear Energy  
175 Curtner Avenue  
San Jose, California 95125

Dear Mr. Marriott:

SUBJECT: REVIEW OF ADVANCED BOILING WATER REACTOR (ABWR) DESIGN COMPLIANCE WITH APPLICABLE UNRESOLVED SAFETY ISSUE (USI) AND GENERIC SAFETY ISSUE (GSI) REQUIREMENTS

Section 52.47 of 10 CFR Part 52 requires that an applicant for standard design certification include in its application a discussion of the proposed technical resolutions of those USIs and medium- and high-priority GSIs which are identified in NUREG-0933 as applicable to the specific design. You originally provided your input for this requirement in the Standard Safety Analysis Report (SSAR) for the ABWR. Based on an identified need for additional information, the staff issued a letter to GE on December 20, 1990, requesting that you consider four additional lists of issues to better meet the requirements of Part 52. The lists were as follows: (1) medium- and high-priority unresolved GSIs, (2) nearly resolved GSIs, (3) resolved GSIs and USIs (reflected in generic letter (GL), NUREGs, reports, bulletins, etc.), and (4) resolved GSIs and USIs reflected in rules, the Standard Review Plan (SRP), or a Regulatory Guide (RG). GE responded to the information request on February 20, 1991.

The staff expected that GE would take each of the applicable resolved USIs and GSIs and provide a discussion of the design aspects of the ABWR which meet the technical requirements of each issue and would propose a resolution for the ABWR for those items which were still unresolved by the Nuclear Regulatory Commission. For any of those which were not applicable to the ABWR design, the staff expected a justification for non-applicability.

The staff is being assisted in its review of USIs and GSIs by the Idaho National Engineering Laboratory (INEL) staff. The INEL staff has performed a limited evaluation of GE's treatment of the USI and GSI Part 52 requirement in the SSAR to determine the quality of the SSAR discussion of USIs and GSIs. They reviewed a small sample of issues and provided a preliminary evaluation. Enclosed is a summary of the issues which were reviewed with preliminary findings. GE's treatment of USI and GSI issues in the SSAR appears to be inadequate in several areas. The following discusses the bases for the staff's conclusion, and is provided as a follow-on to recent telephone discussions between our staffs.

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Specifically, GE provided a summary for USIs and GSIs (Table 19B.1-2), which included cross references to the specific treatment of each issue for the ABWR. For a number of resolved issues, GE listed appropriate NRC licensing basis documents such as sections of the SRP, GLs, or RGs, but did not reflect in the SSAR how the issue was addressed in the ABWR design. Each issue applicable to the ABWR design should be specifically discussed in the body of the SSAR and cross referenced in the summary table.

For several unresolved issues, GE listed in the table, "Data in Collection." In discussions with GE staff, it was indicated that GE was waiting for the NRC to provide additional guidance on the issue in the resolution process. We require a proposed issue resolution for the application to the ABWR design in accordance with the Part 52 requirement.

For two issues, Table 19B.1-2 cross referenced Table 1.8-22, but the issues were not addressed in the second table. This appeared to be a typographical error and needs to be corrected.

In some cases, GE referenced GLs as a source of resolution of an issue. GLs are applicable almost exclusively to operating plants; however, the guidance included should be used to develop a position applicable to the ABWR and should be discussed in an appropriate SSAR section.

Based on the above findings, the staff requires that GE reconsider its submittal on USIs and GSIs and the staff requests that a revised submittal be provided by June 30, 1992, to meet the following criteria.

1. For each medium- and high-priority issue resolved with or without new requirements which is considered applicable to the ABWR, a SSAR reference or a specific discussion (which will be added to the SSAR in a future amendment) should be provided. The discussion should include the pertinent technical information in sufficient detail to enable a meaningful review of the ABWR resolution for the issue. The information provided or referenced should provide a conclusion that the ABWR design has adequately considered the requirements of each issue.
2. For each unresolved issue applicable to the ABWR, GE needs to provide a proposed resolution for the design that includes pertinent technical information in sufficient detail to enable a meaningful review of the ABWR approach to resolution. This information should also be included in the SSAR in a future amendment.
3. For each resolved or unresolved issue included in NUREG-0933, which is considered not applicable to the ABWR design, GE should provide a justification for its exclusion. The simplest case is listing "applies only to PWRs" but other cases may require a discussion of the design specific characteristics in the ABWR which preclude consideration of the issue.
4. GE should also include in its list of combined operating license applicant action items, those USIs and GSIs the COL applicant will have to address.

We are available to discuss the issues with you at your convenience to enhance timely closure of this portion of the review. Please contact Chet Poslusny at (301) 504-1132 if you have any questions concerning these items.

Sincerely,

*Original Signed By*

Dennis M. Crutchfield, Associate Director  
for Advanced Reactors  
Office of Nuclear Reactor Regulation

Enclosure:  
As stated

cc w/enclosure:  
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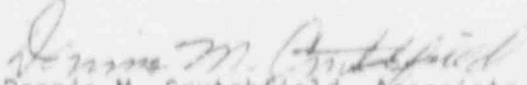
Mr. Patrick W. Marriott

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Sincerely,

  
Dennis M. Crutchfield, Associate Director  
for Advanced Reactors  
Office of Nuclear Reactor Regulation

Enclosure:  
As stated

cc w/enclosure:  
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Mr. Patrick W. Marriott

Docket No. 52-001

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Enclosure

SUMMARY OF SAMPLE REVIEW OF TABLE 19B.1-2

Issue No.	Title	Comments
A-9	Anticipated Transients Without Scram (ATWS)	Acceptable
A-16	Steam Effects on BWR Core Spray Distribution	Not Acceptable. Table 19B.1-2 refers to Table 1.8-22 but the issue is not listed in Table 1.8-22
A-17	Systems interactions in Nuclear Power Plants	Partially Acceptable. Should include element requiring assurance of independence of redundant safety grade equipment is not compromised by common SSCs.
A-25	Non-Safety Loads on Class 1-E Power Sources	Not Acceptable. Table 19B.1-2 refers to Table 1.8-20 and R.G. 1.75. Table 1.8-20 does not contain reference to SSAR
A-29	Nuclear Power Plant Design for Reduction of Vulnerability to Industrial Sabotage	Not Acceptable. Table 19B.1-2 refers to Subsection 19B.2.4. Subsection 19B.2.4 lacks specificity regarding design features pertinent to the issue.
A-44	Station Blackout	Partially Acceptable. Certain sections of R.G. 1.155 not addressed
A-47	Safety Implications of Control System	Not Acceptable. Source of resolution incorrect and SSAR referenced Tech. Specs incorrect.
B-55	Improved Reliability of Target Rock Safety/Relief Valves	Not Acceptable. Data in collection. Information should be provided in the SSAR.

Issue No.	Title	Comments
B-56	Diesel Reliability	Not Acceptable. Data in collection. The information should be provided in the SSAR.
NGI-2	Failure of Protective Devices on Essential Equipment	Not Acceptable. SAR states that the issue is to be addressed later. The information should be provided in the SSAR.
NGI-57	Effects of Fire Protection System Actuation on Safety-Related Equipment	Not Acceptable. SSAR does not address effects of water with electrical equipment and other instrumentation.
NGI-87	Failure of HPCI Steam Line Without Isolation	Not Acceptable. Data in collection. The information should be provided in the SSAR.
NGI-106	Piping and Use of Highly Combustible Gases in Vital Areas	Not Acceptable. Data in collection. The information should be contained in the SSAR.