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Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, DC 20555

DOCKET NUMBER
PROPOSED RULE **PR 52**
(60FR 17902) **(4)**

Attention: Docketing and Service Branch

Subject: Comments on Notice of Proposed Rulemaking for Standard Design
Certification of the U.S. Advanced Boiling Water Reactor Design;
60 Fed. Reg. 17902 (April 7, 1995); Docket No. 52-001

Dear Sir:

On April 7, 1995, the NRC published a notice of proposed rulemaking (NPR) for design certification of the Advanced Boiling Water Reactor (ABWR) under 10 CFR Part 52. The following comments are being provided by the applicant for design certification of the ABWR, GE Nuclear Energy (GE).

In promulgating Part 52 in 1989, the Commission stated that the purpose of design certification is to provide for enhanced safety, early resolution of licensing issues and a more stable and predictable licensing process for the next generation of nuclear plants. The Commission identified nuclear power plant standardization, and the enhanced safety and licensing reform which standardization makes possible, as a central reason for issuance of Part 52. In this regard, NRC attempted to cure a fundamental flaw in the Part 50 licensing process -- namely, the lack of finality of issues decided at the construction permit stage, and the re-review and re-litigation of issues at the operating license stage. In establishing the design certification process under Part 52, it was the objective of the Commission to resolve design-related issues as part of design certification and to prevent NRC re-review of these issues and their re-litigation in subsequent licensing proceedings. Realization of that objective was a motivation for the enactment of the licensing reform provisions of the Energy Policy Act of 1992 (EPACT), which gave express statutory sanction to Part 52 design certification and licensing precepts. GE has actively supported these far-sighted Commission and Congressional initiatives, and the comments provided below focus on whether the proposed rule for the ABWR achieves the goals of Part 52 and the EPACT.

Initially, it should be emphasized that the ABWR design has "enhanced margins of safety" and a "higher standard of severe accident safety performance" in furtherance of

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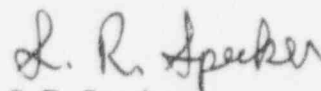
the Commission's policy statements on Advanced Nuclear Power Plants (59 Fed. Reg. 35461; July 12, 1994) and on Severe Reactor Accidents (50 Fed. Reg. 32138; August 8, 1985). The ABWR includes numerous safety improvements relative to the current generation of nuclear power plants, including added features to prevent and mitigate severe accidents. Furthermore, by the NRC's own estimate, the ABWR standard design satisfies the Commission's goals for core damage frequency by at least two orders of magnitude. Thus, the ABWR standard design clearly achieves the Commission's goal of enhanced safety.

Unfortunately, a number of provisions in the NOPR are inconsistent with either the Commission's regulations, prior Commission decisions, the purposes of Part 52, or previous guidance from the NRC Staff. As summarized in Attachment A and discussed in greater detail in the comments submitted by the Nuclear Energy Institute (NEI), (which GE fully endorses and incorporates herein by reference), the NOPR as drafted would greatly decrease the stability and certainty of the licensing process envisioned when the Commission promulgated Part 52. Additionally, as drafted, the NOPR would greatly add to the costs associated with implementation of Part 52, without any increase in safety. There is, indeed, deep-seated concern within the industry that the NOPR provisions discussed herein undermine the objectives of issue finality and licensing predictability and stability, thereby threatening the viability of design certification for use in licensing new nuclear power plants. Therefore, GE urges the Commission to modify the provisions in the proposed rule, as recommended herein and in the NEI comments, in order to ensure the stability and certainty of the Part 52 licensing process.

Based upon its comments (including the incorporated NEI comments), GE is providing a mark-up of the proposed rule identifying the changes which GE is recommending in the rule. This mark-up is provided as Attachment B, with an annotation explaining the basis for the mark-up. A clean text version of GE's recommended rule is provided as Attachment C.

GE is not requesting an informal hearing on these comments because they raise policy-related issues that can be resolved by the Commission without a hearing.

Sincerely,


S. R. Specker

cc (w/attachments):

Chairman Shirley A. Jackson
Commissioner Kenneth Rogers
James M. Taylor, EDO
William T. Russell, NRR
Karen D. Cyr, General Counsel
William H. Rasin (NEI)
Sterling Franks (DOE)

ATTACHMENT A

SUMMARY OF GE'S COMMENTS ON THE PROPOSED DESIGN CERTIFICATION RULE FOR THE ADVANCED BOILING WATER REACTOR (ABWR)

GE assisted the Nuclear Energy Institute (NEI) in preparing its comments on the proposed design certification rules. Given the extensive nature of NEI's comments, GE is hereby incorporating NEI's comments by reference rather than duplicating the analyses contained therein. The purpose of this attachment is to provide a summary of GE's more important comments and concerns.

The Commission Should Reaffirm Its Previous Policy Decisions Regarding the Structure of the Design Certification Rule, Which Are Reflected in the ABWR Design Control Document

The ABWR Design Control Document (DCD), which is incorporated by reference in the proposed rule, fully meets the Commission's goals for design certification. The 31-volume DCD is the product of more than seven years of intensive effort entailing the expenditure of substantial resources by GE, and it reflects NRC's comprehensive review of the ABWR design. The DCD incorporates and implements many of the fundamental policy decisions which the Commission has made over the last several years to promote the stability, predictability, and viability of the licensing process. Specifically, the DCD reflects the following policy decisions by the Commission:

- The decision to create two tiers of information: with Tier 1 reserved for the top level design criteria and performance standards and the inspections, tests, analyses, and acceptance criteria (ITAAC); and with Tier 2 consisting of the information in the standard safety analysis report (SSAR) minus proprietary and safeguards information and details of the probabilistic risk assessment (PRA). See Staff Requirements Memoranda (SRM), dated February 15, 1994, and June 30, 1994. Different change processes are provided in the proposed rule for each Tier, consistent with the safety significance of their respective contents.
- The decision to adopt a graded approach to the level of detail required in Tier 1 and Tier 2, with the level of detail being dependent upon the safety significance of the system or function in question. See SRMs dated February 15, 1991, and September 24, 1991.
- The decision to permit the use of Design Acceptance Criteria (DAC) in lieu of final design details in those areas in which final design details are dependent upon as-built conditions (e.g., ASME piping systems) or in areas of rapidly changing technology (e.g.,

instrumentation and control systems) where it is undesirable to specify a particular technology which may soon be obsolete. See SRMs dated November 7, 1991, April 1, 1992, and June 30, 1994.

The proposed rule appropriately reflects Commission decisions to impose stringent restrictions on the ability of the NRC and applicants for and holders of licenses to change Tier 1 provisions, to impose different restrictions on changes to Tier 2 provisions, and to permit license applicants and holders to make changes to Tier 2 that do not involve unreviewed safety questions in accordance with a process similar to that in 10 CFR § 50.59. See 10 CFR § 52.63(b)(2) and SRMs dated February 15, 1991, and June 23, 1993. GE supports these decisions, and the contents of the DCD are premised on them. In light of the fundamental soundness of these decisions, the Commission should continue to adhere to its previous decisions and adopt a final rule consistent with them.

The Proposed Rule Would Provide Insufficient Finality for the Design Certification

The concept of "finality" is central to design certification and critical to the stability and predictability of the Part 52 licensing process. In particular, 10 CFR § 52.63(a)(4) states that the Commission shall treat as resolved in licensing proceedings "those matters resolved in connection with the issuance or renewal of a design certification." Absent this provision and its meaningful implementation, issues decided during design certification could be re-reviewed by the NRC and re-litigated during subsequent licensing proceedings, resulting in instability and uncertainty akin to that of the Part 50 licensing process.

In at least three aspects, the proposed rule would severely and unnecessarily undermine the finality of design certification and would create substantial uncertainty and instability in the licensing process. First, the proposed rule provides no finality to safety issues within the scope of the standard design unless those issues are discussed in the DCD or the Staff's Final Safety Evaluation Report (FSER). Even definitive treatment in documentation other than the DCD and FSER, such as in the SSAR or docketed reference material, would provide no protection against subsequent reconsideration. Second, the proposed rule provides no finality to issues related to the adequacy of the safety of the approved design. Finally, the proposed rule affords no finality to permitted changes, even changes that have been subject to formal review and hearings. To ensure the stability and certainty of the licensing process under Part 52, GE believes that the scope of issues accorded finality can and should be expanded, and that changes made in accordance with the change

processes specified in Part 52 and the design certification rule should be given finality. Each of these three points is discussed more fully below.

Section 6 of the proposed rule states that the DCD and the Staff's FSER have finality. However, the proposed rule would not extend finality to numerous documents and issues that have been or will be subject to review and approval by the NRC in the design certification process, including references in the DCD that constitute requirements, information in the SSAR for the ABWR, other issues in the ABWR docket, and issues addressed in the rulemaking proceeding. See 60 Fed. Reg. at 17908, 17910-11. All of the foregoing constitute part of the rulemaking record - indeed, the SSAR and the secondary references in the DCD have been explicitly approved by the NRC, and are by definition resolved and should have finality under Section 52.63(a)(4).

The proposed design certification rule does not provide finality to issues related to the adequacy of the standard design. In approving the standard design, the NRC has necessarily made the determination that additional features and functions for the ABWR are unnecessary to provide adequate protection of the public health and safety and to comply with applicable Commission's regulations. The NRC should explicitly incorporate this determination in the design certification rule in order to preclude future claims that additional features and functions are needed for those purposes.

The notice of proposed rulemaking (NOPR) for design certification of the ABWR states that finality would not adhere either to facility-specific exemptions for changes to Tier 1 and Tier 2 (which under Part 52 require prior NRC approval and an opportunity for public hearing) or to changes to Tier 2 made under the § 50.59-type process. See 60 Fed. Reg. at 17904-5, 17909. Changes made in accordance with change processes specified in the design certification rule should be accorded finality in subsequent proceedings involving the plant in question. In particular:

- Changes to Tier 1, changes to the technical specifications, and changes that involve an unreviewed safety question all are subject to formal NRC review and an opportunity for public hearing. Once these changes are finally approved as a result of those processes, they should be accorded finality and should not be subject to later reconsideration by the NRC (either by the Staff or in hearings).
- Changes in Tier 2 that do not involve an unreviewed safety question should also be accorded finality. By definition, such changes are not important to safety (and in fact may be beneficial to safety). Under

Section 50.59 such changes are not subject to prior approval by the NRC or hearings by the public. Simply stated, the proposal to hold hearings on such changes is totally inconsistent and cannot be reconciled with either the current scheme under Section 50.59 or the Section 50.59-like change process embodied in Section 52.63(b)(2), and would provide less finality to such changes than is currently provided to Section 50.59 changes by Part 50 plants. Moreover, the stated reason for requiring hearings on such changes (i.e., to discourage their being made) is a misuse of the public hearing process.

In summary, the NOPR would unduly restrict the matters accorded finality, and would inappropriately subject applicants and licensees to hearings on changes that do not involve an unreviewed safety question. Therefore, GE believes that modification of the finality provisions in the proposed rule is essential in the three respects noted above to ensure the stability and certainty of the licensing process.

The Proposed "Applicable Regulations" Are Unnecessary and Destabilizing

SECY-90-016 and SECY-93-087 identify NRC positions on a number of severe accident and other technical issues that are not embodied in current NRC regulations. The NRC Staff applied these positions in its review of the ABWR, and the Staff's FSER found the ABWR's design to be acceptable with respect to these positions. The Staff has now proposed to designate fourteen of these positions as "applicable regulations" - - i.e., the Staff wants to give these positions a status similar to the status of the Commission's regulations in Part 50 for the purpose of issuing the design certification, imposing backfits, renewing the design certification, and evaluating changes to the DCD. To this end, Section 5 of the proposed rule designates these NRC positions as "applicable regulations." For a number of compelling reasons, GE believes that the "applicable regulations" are unnecessary and would be inconsistent with the over-arching goal of Part 52 to create a stable and predictable licensing process.

The NOPR states that it is necessary to designate the NRC's positions as "applicable regulations" because otherwise there would be no legally binding criteria related to these positions. See 60 Fed. Reg. at 17907, 17910-11. However, this reasoning is flawed and ignores other sources of legally binding requirements. Specifically, each of the NRC's positions is covered in whole or in part by requirements in Tier 1 (see attached Table 1) and is also covered in detail in Tier 2. Therefore, these positions will be embodied in requirements of the certification rule, and

it is not necessary to adopt additional "applicable regulations" in order to establish a base-line for the purpose of issuance or renewal of the design certification. Additionally, because these positions are addressed in Tier 1 requirements, it is not necessary to adopt additional "applicable regulations" in order to restrict future changes by applicants and licensees.

A principal reason why the Staff created this array of "applicable regulations" is to be able to impose backfits on future applicants and licensees. See 60 Fed. Reg. at 17907, 17911. Under 10 CFR § 52.63(a), the NRC may impose backfits on a certified design only when necessary to provide adequate protection of safety or to comply with the "Commission's regulations applicable and in effect at the time the certification was issued." These backfit restrictions are central to the realization of the Part 52 goal of stability for the design being certified. As indicated in SECY-90-016 and SECY-93-087, the NRC's technical positions go beyond NRC's current regulations and are not necessary for adequate protection. Therefore, under Section 52.63(a), the Staff would not be able to justify the imposition of backfits to these positions - - unless the Commission were to give these positions the status of regulations. Thus, the transformation of these positions into "applicable regulations" will enable the Staff to circumvent the restrictions on backfits in 10 CFR § 52.63(a).

Furthermore, the Staff has deliberately drafted the "applicable regulations" using "broadly stated" provisions, which give the Staff more flexibility to impose backfits. See SECY-92-287A. Such "broadly stated" provisions would be susceptible to new interpretations over time by the Staff, and the Staff could then use the "applicable regulations" and the provisions in 10 CFR § 52.63(a) to require applicants and licensees to make backfits to conform with the Staff's new interpretations without any adequate protection justification. In fact, some of the "applicable regulations" are so vague and "broadly stated" that the NRC-approved ABWR design could be construed as being inconsistent with the "applicable regulations" (see attached Table 2). Additionally, many of the "applicable regulations" pertain to severe accident issues, where new information is continuously being developed and where changes in NRC interpretations are likely to occur. Under 10 CFR § 52.63(a), the NRC Staff could require applicants and licensees to make changes to conform with the Staff's new interpretations of these severe accident positions as embodied in the "applicable regulations." This result is totally contrary to the Commission's goal in promulgating Part 52 - - namely, to provide stability for a standard design and certainty to the regulatory process.

In summary, GE urges the Commission to reject the Staff's proposal on "applicable regulations" because it is unnecessary and would be susceptible to destabilizing backfits.

The Staff's Proposed Process for Verifying Satisfaction of ITAAC Is Destabilizing and Contrary to the Purpose of ITAAC

The proposed design certification rule incorporates Tier 1 of the DCD, which includes inspections, tests, analyses, and acceptance criteria (ITAAC). As stated in 10 CFR § 52.97(b)(1), the design certification ITAAC and the associated plant-specific ITAAC in the combined license (COL) must be sufficient to provide reasonable assurance that a plant has been constructed and will be operated in conformity with the license, the provisions of the Atomic Energy Act, and the Commission's rules and regulations. In SECY-94-294 and during recent discussions between the NRC Staff and the industry, the Staff has stated that, in making its determination in implementing 10 CFR § 52.99 that the ITAAC acceptance criteria are met, the NRC Staff will be considering various quality assurance issues. As discussed below, these statements by the Staff are in conflict with the purposes and literal language of the design certification ITAAC and of the stated Congressional intent for ITAAC's role as presented in the Energy Policy Act of 1992.

The design certification ITAAC appropriately focus on the end product of construction; i.e., whether the installed hardware is acceptable. With a few exceptions, the ITAAC do not require that matters typically encompassed within the quality assurance program be verified. The reason why such matters were excluded from the ITAAC is obvious - - as long as the as-built hardware is acceptable, deficiencies in the process of installing the hardware are not material to whether the plant has been constructed and will operate in conformance with applicable requirements. Furthermore, under Appendix B to Part 50, licensees will be obligated to correct such deficiencies, and the NRC will have sufficient power under its inspection and enforcement authority to ensure that corrective action is taken.

The Staff's proposal to conduct broad-ranging quality assurance inquiries in support of its ITAAC compliance determination would be contrary to a basic purpose of ITAAC. A fundamental ITAAC purpose is to provide for the early designation of those acceptance criteria whose satisfaction shall comprise the sole basis for authorizing commencement of operation. As stated in SECY-91-178 (June 12, 1991), pp. 2, "[t]he benefits to the early designation of these [ITAAC] verification requirements include an up-front agreement to requirements and acceptance criteria" for construction. Unless quality assurance matters are an express component of specific ITAAC, consideration of such matters is contrary to the goal of early designation of

requirements to commence operation and would cast into doubt the viability of the Part 52 licensing process. As stated in the Senate Energy Committee report (S. Rep. No. 102-72 (Vol. 2)) for the Energy Policy Act provisions which codified the concept of ITAAC, specification of ITAAC in a design certification and COL will ensure certainty "by spelling out before construction begins what conditions the completed plant must satisfy in order to operate." (Emphasis added). The Staff's approach is contrary to the Part 52 goal of a stable and predictable licensing process and the expressed intent of Congress.

In summary, the approach espoused by the Staff would essentially constitute a return to the two-step licensing process under Part 50, in which the operating license proceeding became a forum for unfocused and open-ended examination of any and all quality assurances issues. To ensure that the specific terms of Part 52 are respected and that its goals will be achieved, the Commission should include provisions within the design certification rule that clearly specify that compliance with ITAAC shall be determined by verifying that the required inspections, tests, and analyses have been successfully completed and that, based solely thereon, the corresponding acceptance criteria have been met.

The Change Process As Applied to Severe Accidents
Is Unnecessary, Inappropriate, and Unduly Burdensome

In accordance with 10 CFR § 52.63(b)(2), the proposed design certification rule establishes a "50.59-like" process which enables license applicants and licensees to make changes in Tier 2 without prior NRC approval unless the change involves a change in Tier 1, a change in the technical specifications, or an unreviewed safety question. However, unlike Section 50.59 (which traditionally has only required evaluations of changes vis-a-vis design basis accidents), Section 8(b)(5) of the proposed rule would also require evaluations of changes in all of the severe accident and probabilistic evaluations in Chapter 19 of Tier 2.^{1/} As discussed below, such an expansion of Section 50.59 is unnecessary and inappropriate, and would be enormously burdensome with no commensurate benefit to safety.

The Commission's SRM dated February 15, 1991, recognized that Section 50.59 has traditionally been applied only to design basis accidents. Nevertheless, the Commission stated that the 50.59-like process should preserve the severe accident insights

^{1/} Part 50 does not require a safety analysis report (SAR) to contain severe accident or probabilistic evaluations. In the past, SARs for Part 50 plants have not contained such evaluations.

in the standard design. The industry supports this direction and has proposed that the traditional 50.59 process be expanded to apply to the important severe accident and PRA features for new reactors. In this regard, GE and the NRC Staff expended considerable time and effort in identifying these important features, and created a new section (Section 19.8 of Tier 2) for the expressed purpose of discussing these features. In accordance with the goal stated in the Commission's SRM, the industry proposed that each change to an important feature identified in Section 19.8 be subject to a 50.59 safety evaluation to determine whether the change would result in a substantial increase in the probability or consequences of a severe accident.

However, the NRC Staff rejected the industry's proposal, and is seeking in the NOPR to apply Section 50.59 to all of the severe accident and probabilistic evaluations in Chapter 19 of Tier 2, not just the important features identified in Section 19.8. In doing so, the NOPR is going well beyond the Commission's previous directions. Most of Chapter 19 discusses features that, by definition, are not important to the prevention or mitigation of severe accidents. Therefore, application of the 50.59-like process to the balance of Chapter 19 is unnecessary to accomplish the Commission's goal of preserving severe accident insights.

Not only is the NRC Staff's proposal unnecessary, it would also be extremely burdensome for applicants and licensees to implement. Chapter 19 of Tier 2 for the ABWR is very lengthy (three volumes) and contains substantial amounts of details which are not important to safety, including details regarding systems which are not designed or intended to perform any safety function or to prevent or mitigate severe accidents. As a result, it may be expected that, under the proposed rule, applicants and licensees would be required to prepare additional or more expansive safety evaluations for many changes that have a trivial impact on safety. At a time when the Commission is trying in general to reduce regulatory burdens that have little or no benefit to safety, it would be inconsistent with the Commission's current regulatory approach to burden applicants and licensees with a requirement to perform safety evaluations for changes that have little or no potential for affecting safety.

Furthermore, with respect to the severe accident and probabilistic evaluations in Chapter 19, Section 8(b)(5) of the proposed rule defines the term "unreviewed safety question" as an increase in the probability or consequences of an accident.^{2/} As

^{2/} In this regard, the provisions in the proposed rule regarding treatment of severe accidents are inconsistent
(continued...)

a result, trivial increases in probabilities of accidents evaluated in Chapter 19 (e.g., an increase from $10E-10$ to $10E-9$ per year) could be classified as an unreviewed safety question, require prior NRC approval, and be subject to the opportunity for public hearings. This result is clearly unwarranted from either a safety or other regulatory perspective, and would needlessly result in the expenditure of industry and NRC resources to evaluate changes that have no impact on safety. GE continues to maintain that only changes to an important feature identified in Section 19.8 of Tier 2 should be subject to a 50.59-type evaluation and that the standard should be whether the change would result in a substantial increase in the probability or consequences of a severe accident.

In summary, the subject NOPR provision is overly broad, is unnecessary to preserve the important severe accident and PRA insights, would be unduly burdensome to both the industry and the NRC, and would divert their attention from matters more important to safety. Consequently, with respect to the severe accident and probabilistic evaluations in Chapter 19 of Tier 2, the Commission should limit the scope of the 50.59-like process to the important features identified in Section 19.8 of Tier 2. Additionally, the Commission should state that only "substantial increases" in the probability or consequences of such accidents constitute an "unreviewed safety question."

Construction Permits that Reference a Design Certification Should Not Be Required To Utilize ITAAC

In developing Part 52, the Commission created the concept of ITAAC - - i.e., inspections, tests, analysis, and acceptance criteria which, if satisfactorily completed, will provide reasonable assurance that a plant licensed under Part 52 has been

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with the DCD Introduction. For more than two years, the industry and the NRC Staff discussed the amount of probabilistic and severe accident information to place in Chapter 19 of Tier 2, and how to treat changes to this information. Based upon these discussions, Section 3.8 of the DCD Introduction for the ABWR was developed. Section 3.8 specifies that, with respect to the probabilistic and severe accident evaluations "included in Chapter 19 of Tier 2," the term unreviewed safety question should be defined as a "substantial increase" in probability or consequences of the accidents evaluated in Chapter 19. Inexplicably, and without any justification, the Staff greatly narrowed the corresponding provision in Section 8(b)(5)(iii) of the proposed rule to refer only to Section 19E and related appendices.

constructed and will operate in accordance with applicable requirements. The sole purpose of ITAAC is to replace the traditional findings the Commission was required to make regarding construction prior to issuing an operating license for a Part 50 plant, with a comprehensive and pre-defined set of inspections, tests, analyses, and acceptance criteria which, if satisfied, provide a sufficient basis for authorizing operation.

The NOPR states that Part 50 applicants and licensees may reference the design certification rule. The NOPR also states that Part 50 applicants and licensees who reference a design certification rule must utilize the ITAAC in the design certification. See 60 Fed. Reg. at 17910. For several reasons, the Commission should give Part 50 applicants and licensees the option of referencing the design certification rule without utilizing the ITAAC.

ITAAC are not compatible with the two-step licensing process in Part 50. Part 50 requires both a construction permit and an operating license proceeding, and one of the primary purposes of the operating license proceeding is to address construction-related issues. In contrast, ITAAC are uniquely a Part 52 concept - - ITAAC were developed to enable the NRC to replace the two-step licensing process with a single combined license, with ITAAC substituting for construction-related findings required in the operating license proceeding. Thus, for a Part 50 licensee, the ITAAC are not applicable, and the normal Part 50 operating license process should govern; i.e., there will be an operating license stage review and hearing opportunity on construction-related issues.

Furthermore, it is desirable for potential buyers of nuclear plants to have regulatory alternatives for licensing their plants, as Part 52 itself contemplates in maintaining the Part 50 option. Although the industry is hopeful that the ITAAC will add greater predictability and certainty to the regulatory process, the ITAAC process remains untried. Therefore, the Commission should allow Part 50 applicants and licensees the option of utilizing the design certification without the ITAAC.

The Substantive Provisions in the DCD Introduction Should Be Incorporated in the Design Certification Rule

The NRC Staff directed the design certification applicants to include an Introduction as part of the DCD in order to serve as an explanation to future users of the DCD. Accordingly, in a process lasting almost one year, the industry and the NRC Staff spent considerable time and effort in crafting the provisions of the DCD Introduction, including word-by-word editing of the DCD Introduction. The final version of the DCD Introduction contains numerous important provisions, including provisions governing

compliance with and duration of ITAAC, COL License Information, Tier 2*, proprietary and safeguards information, references to the SSAR, and severe accident issues.

The NOPR states that the DCD Introduction is not incorporated by reference in the design certification rule, and that in the event of a conflict between the DCD Introduction and the statements of consideration (SOC) for the rule the SOC is controlling. See 60 Fed. Reg. at 17909. This statement is inconsistent with previous guidance provided by the NRC and represents a surprising and unexplained departure from the NRC Staff's stated reasons for developing the DCD Introduction. Furthermore, implementation of this statement would be extremely destabilizing.

Some of the provisions in the NOPR SOC are inconsistent with the provisions in the DCD Introduction (see, e.g., the above discussion on severe accident issues). Other provisions in the NOPR SOC are stated with less precision than in the DCD Introduction and still other provisions are not discussed at all in the NOPR. Given the time and effort expended by the industry and the Staff in developing the precise language in the DCD Introduction and the substantive nature of much of its content, the language in the DCD Introduction should be controlling and its provisions should be incorporated in the design certification rule itself.

In fact, the NOPR is inconsistent with the Staff's previous position. As stated by the NRC Staff in guidance related to the DCD Introduction dated August 26, 1993:

The staff believes that the DCD should be a self-contained document, and should not rely on the DCR's Statement of Considerations to serve this purpose. It is not expected that future users of the DCD be required to research the Statement of Considerations to gain an understanding of the purpose of the DCD and its role in future licensing actions.

Therefore, the Commission should reject the proposal in the NOPR to make the SOC controlling. This proposal would result in confusion and inevitable misunderstandings for future users of the DCD, is inconsistent with the understandings of the industry and the NRC Staff during the development of the DCD Introduction, and would not provide legally-binding effect to the substantive provisions in the DCD Introduction. Instead, the Commission should incorporate the substantive provisions of the DCD Introduction in the design certification rule as reflected in the enclosed mark-up of the proposed rule.

The NOPR's Description of the Change Process
Is Inconsistent With 10 CFR § 52.63 and § 50.59

The NOPR states that a license applicant or licensee who references the design certification must obtain prior NRC approval for departures from Tier 2 information "if the change involves issues that the NRC staff has not previously approved" and if the change is inconsistent with the resolution of an issue in the NRC Staff's FSER. See 60 Fed. Reg. at 17912-17913. GE believes these provisions are contrary to and are inconsistent with 10 CFR § 52.63(b)(2) and 10 CFR § 50.59.

The NOPR's proposed requirement for prior NRC approval of changes involving issues not previously approved by the NRC is entirely new, and is inconsistent with the requirements of Section 50.59 (which is incorporated by reference in 10 CFR § 52.63(b)(2)). Section 50.59 only requires prior NRC approval for changes to the technical specifications or changes involving an unreviewed safety question. Both 10 CFR § 50.59 and Section 8(b)(5) of the proposed rule define "unreviewed safety question" in terms of the impact of the change upon safety: i.e., whether the change involves 1) an increase in probability or consequences of an accident, 2) a new or different kind of accident, or 3) a decrease in the margin of safety. Neither of these sections defines unreviewed safety question in relationship to issues previously approved or resolved by the NRC.

In essence, the proposed language in the NOPR would fundamentally alter over thirty years of practice under Section 50.59. The NOPR not only does not justify this departure from past practice, it does not even acknowledge the departure. Furthermore, this departure is totally unjustified. First, Section 50.59 has proven its value in practice, and there is no compelling reason to fundamentally alter this practice. Additionally, these provisions in the NOPR are not necessary for safety, since the three criteria in Section 50.59 ensure that changes involving issues not previously approved by NRC or inconsistent with an issue resolved in the FSER will not adversely affect safety. Finally, the provisions in the NOPR could actually be contrary to safety since they would discourage applicants and licensees from making improvements involving matters not previously reviewed and approved by the NRC.

On a more practical level, the language in the NOPR would, in essence, prohibit almost all changes without prior NRC approval. By definition, a change involves a departure from a provision that has previously been reviewed and approved by the NRC. As a result, almost all changes either involve matters not previously approved by NRC or involve a resolution that is different from the resolution discussed in the FSER, and therefore would require prior NRC approval. Obviously, this

result would be contrary to Section 50.59 and the intent of the Commission in adopting the 50.59-like process for Tier 2 changes.

In summary, the proposed language in the NOPR is inconsistent with the proposed rule, Section 52.63(b)(2), Section 50.59, and long-standing practice under Section 50.59. Therefore, these provisions should not be included in the Statement of Considerations for the final design certification rule.

The Duration of the ABWR Design Certification Should Be Made Consistent with Part 52

Section 7 of the proposed design certification rule for the ABWR states that the duration of the design certification is fifteen years from May 8, 1995. In contrast, Section 7 of the proposed design certification rule for the System 80+ states that the duration of the design certification is fifteen years from the date of effectiveness of the final rule (i.e., 30 days after publication of the final rule in the Federal Register). As discussed below, the proposed rule for the ABWR should be modified to make it consistent with the proposed rule for the System 80+ and the provisions in Part 52.

The provision in the proposed rule for the System 80+ is consistent with 10 CFR 52.55(a), which states that the design certification is valid for fifteen years from date of issuance. In contrast, the provision in the proposed rule for the ABWR would result in a duration for the ABWR design certification which is inconsistent with Section 52.55(a). Accordingly, the Commission should modify the design certification rule for the ABWR to state that its duration is 15 years from the effective date of the rule. Based upon our discussions with the NRC Staff, we understand that the date of May 8, 1995, was inserted into the proposed rule as a result of an administrative error by the Office of Federal Register, and that GE's recommendation is consistent with the intent of the NRC.

GE Endorses NEI's Comments on Other Issues

GE fully supports and endorses NEI's comments, including its comments on topics not explicitly discussed above. In particular:

- GE fully supports NEI's request that the design certification applicant be allowed to make Tier 2 changes using the 50.59-type change process prior to submission of the first referencing license application.

- For the reasons discussed in the NEI comments, GE requests the Commission to modify the ABWR DCD Introduction to specify that the Tier 2* restrictions for equipment seismic qualification methods and reactor core acceptance criteria expire at first full power, consistent with the expiration date for the corresponding Tier 2* restrictions for the System 80+. Furthermore, as discussed in the NEI comments, GE requests the Commission to specify that all Tier 2* restrictions expire at first full power.

Conclusions

The creation of a stable, predictable licensing environment is an essential step in providing the utility industry the assurance it needs before it can even consider the option of constructing a nuclear plant. Unfortunately, in a number of areas, the proposed rule is either inconsistent with or greatly exceeds the Commission's regulations and prior directions. In each case, the NUPR position would either be destabilizing, add substantial additional cost to the licensing or regulatory process, or impose restrictions that are unnecessary for safety. To ensure that the design certification rule will be a usable product - - one that potential purchasers of new nuclear power plants can look to with confidence - - it is critical that the Commission make the changes summarized above.

TABLE 1

Tier 1 Treatment of the NRC Staff's Proposed
"Applicable Regulations" for the ABWR

"Applicable Regulation"	Relevant Provision from Tier 1 of the ABWR
<p><u>Section 5(c)(1) - Intersystem Loss of Coolant Accident (ISLOCA) -</u></p> <p>In the standard design, the effects of intersystem loss-of-coolant accidents must be minimized by designing low-pressure piping systems that interface with the reactor coolant pressure boundary to withstand full reactor coolant system pressure to the extent practical.</p>	<p>The design pressures of low pressure piping interfacing with the reactor coolant pressure boundary are specified in Tier 1. (e.g., § 2.2.2, § 2.2.4, § 2.4.1, § 2.4.2, § 2.4.4, § 2.6.1, § 2.6.2)</p>

TABLE 1 - Cont.

"Applicable Regulation"	Relevant Provision from Tier 1 of the ABWR
<p><u>Section 5(c)(2) - Inservice Testing of Pumps and Valves -</u></p> <p>Piping systems associated with pumps and valves subject to the test requirements set forth in 10 CFR 50.55a(f) must be designed to allow for:</p> <ul style="list-style-type: none"> (A) Full flow testing of pumps and check valves at maximum design flow, (B) Testing of motor operated valves under maximum achievable differential pressure, up to design basis differential pressure to demonstrate the capability of the valves to operate under design basis conditions. <p>For pumps and valves subject to the test requirements set forth in 10 CFR 50.55a(f), an applicant for a combined license which references this standard design certification rule shall submit as part of the application:</p> <ul style="list-style-type: none"> (A) A program for testing check valves that incorporates advanced non-intrusive techniques to detect degradation and monitor performance characteristics, and (B) A program to determine the frequency necessary for disassembly and inspection of each pump and valve to detect degradation that would prevent the component from performing its safety function and which cannot be detected through the use of advanced non-intrusive techniques. The licensee shall implement these programs throughout the service life of the plant. 	<p>Tier 1 has boilerplate ITAAC for testing motor operated valves (MOVs) and check valves with active safety functions, and discusses design provisions for full flow testing. (e.g., § 1.2, § 2.4.1, § 2.4.2, § 2.4.4)</p>

TABLE 1 - Cont.

"Applicable Regulation"	Relevant Provision from Tier 1 of the ABWR
<p><u>Section 5(c) (3) - Digital Instrumentation and Control Systems -</u></p> <p>For digital instrumentation and control systems, the design must include:</p> <ul style="list-style-type: none"> (i) An assessment of the defense-in-depth and diversity of instrumentation and control systems, (ii) A demonstration of adequate defense against common-mode failures; and (iii) Provisions for independent backup manual controls and displays for critical safety functions in the control room. 	<p>Tier 1 § 3.4 identifies common mode failure design provisions and diversity and defense-in-depth provisions for instruments and controls, including manual scram and isolation function in the main control room. Additionally, Tier 1 § 2.2.6 states that the Remote Shutdown System controls and indicators are hard-wired.</p>
<p><u>Section 5(c) (4) - Alternate Power Source -</u></p> <p>The electric power system of the standard design must include an alternate power source that has sufficient capacity and capability to power the necessary complement of non-safety equipment that would most facilitate the ability of the operator to bring the plant to a safe shutdown, following a loss of the normal power supply and reactor trip.</p>	<p>In addition to Unit Auxiliary Transformers (UATs), Tier 1 § 2.12.1 requires the existence of a separate Reserve Auxiliary Transformer (RAT), which must be sized to supply load requirements for non-class 1E load groups and Class 1E divisions.</p>
<p><u>Section 5(c) (5) - Offsite Power Source -</u></p> <p>The electric power system of the standard design must include at least one offsite circuit supplied directly from one of the offsite power sources to each redundant safety division with no intervening non-safety buses in such a manner that the offsite source can power the safety buses upon a failure of any non-safety bus.</p>	<p>Tier 1 Figure 2.12.1 shows separate feeds to each Class 1E division from a UAT and the RAT, and § 2.12.1 states that Class 1E switchgear are supplied power directly (not through any bus supplying non-Class 1E loads) from a UAT or RAT.</p>

TABLE 1 - Cont.

"Applicable Regulation"	Relevant Provision from Tier 1 of the ABWR
<p><u>Section 5(c) (6) - Fire Protection -</u></p> <p>(i) The requirements of 10 CFR 50.48(a) and 10 CFR Part 50 Appendix R, Section III.G.1.a, apply to all structures, systems, and components important to safety.</p> <p>(ii) Notwithstanding any provisions in paragraph (i) of this section, all structures, systems, and components important to safety in the standard design must be designed to ensure that:</p> <p>(A) Safe shutdown can be achieved assuming that all equipment in any one fire area will be rendered inoperable by fire and re-entry into the fire area for repairs and operator actions is not possible, except that this provision does not apply to (1) the main control room, provided that an alternative shutdown capability exists and is physically and electrically independent of the main control room, and (2) the reactor containment;</p> <p>(B) Smoke, hot gases, or fire suppressant will not migrate from one fire area into another to an extent that could adversely affect safe-shutdown capabilities, including operator actions; and</p> <p>(C) In the reactor containment, redundant shutdown systems are provided with fire protection capabilities and means to limit fire damage such that, to the extent practicable, one shutdown division remains free of fire damage.</p>	<p>Tier 1 contains a number of provisions related to fire protection. Safety-related buildings are divided into separate divisional areas for mechanical and electrical equipment, and interdivisional floors, walls, and penetrations have 3-hour ratings. (Tier 1, §§ 2.15.10 and 2.15.12). The Atmosphere Control System, which provides an inerted atmosphere inside the containment, is discussed in Tier 1 § 2.14.6. Tier 1 § 2.15.5 contains various provisions requiring physical separation of HVAC mechanical divisions and for operation in fire modes.</p>

TABLE 1 - Cont.

"Applicable Regulation"	Relevant Provision from Tier 1 of the ABWR
<p><u>Section 5(c) (7) - Reliability Assurance Program</u></p> <p>The standard design must include and an applicant for a combined license which references this standard design certification rule shall submit as part of the application:</p> <ul style="list-style-type: none"> (i) The description of the reliability assurance program used during the design that includes scope, purpose, and objectives; (ii) The process used to evaluate and prioritize the structures, systems, and components in the design, based on their degree of risk-significance; (iii) A list of structures, systems, and components designated as risk-significant; and (iv) For those structures, systems, and components designated as risk-significant: <ul style="list-style-type: none"> (A) A process to determine dominate failure modes that considered industry experience, analytical models, and applicable requirements; and (B) Key assumptions and risk insights from probabilistic, deterministic and other methods that considered operation, maintenance and monitoring activities. 	<p>Tier 1 § 3.6 contains the reliability assurance program provisions discussed in the "applicable regulation."</p>

TABL - Cont.

"Applicable Regulation"	Relevant Provision from Tier 1 of the ABWR
<p><u>Section 5(c)(8) - Analysis of External Events -</u></p> <p>The probabilistic risk assessment required by 10 CFR 52.47(a)(1)(v) must include an assessment of internal and external events. For external events, simplified probabilistic methods and margins methods may be used to assess the capacity of the standard design to withstand the effects of events such as fires and earthquakes. Traditional probabilistic techniques should be used to evaluate internal floods. For earthquakes, a seismic margin analysis must consider the effects of earthquakes with accelerations approximately one and two-thirds the acceleration of the safe-shutdown earthquake.</p>	<p>The application for design certification of the ABWR contains the specified assessments. In addition, a number of important features from the seismic analysis and flooding analysis are discussed in Tier 1. For example, Tier 1 discusses that the portion of the Fire Protection Water Supply System that feeds the AC Independent Water Addition System remains functional following a Safe Shutdown Earthquake (SSE) (§ 2.15.6); the portions of the Standby Liquid Control System required for reactor pressure vessel injection are Seismic Category I (§ 2.2.4); the containment, reactor building, and control building are seismically qualified (§§ 2.14.1, 2.15.10, 2.15.12); and the Class 1E portions of the Electrical Power Distribution System, DC Power Supply System, and emergency diesel generators are seismically qualified (§§ 2.12.1, 2.12.12 and 2.12.13). Tier 1 §§ 2.15.10 and 2.15.12 also discuss provisions to prevent floods from propagating from one division to another.</p>
<p><u>Section 5(c)(9) - Alternate AC Power Source -</u></p> <p>The standard design must include an on-site alternate ac power source of diverse design capable of powering at least one complete set of equipment necessary to achieve and maintain safe-shutdown for the purposes of dealing with station blackout.</p>	<p>The alternate AC power source (the Combustion Turbine Generator) is discussed in Tier 1 § 2.12.11.</p>

TABLE 1 - Cont.

"Applicable Regulation"	Relevant Provision from Tier 1 of the ABWR
<p><u>Section 5(c)(10) - Core Debris Cooling -</u></p> <p>(i) The standard design must include the features in paragraphs (A) - (C) below that reduce the potential for and effect of interactions of molten core debris with containment structures:</p> <p>(A) Reactor cavity floor space to enhance debris spreading;</p> <p>(B) A means to flood the reactor cavity to assist in the cooling process; and</p> <p>(C) Concrete to protect portions of the lower drywell containment liner and other structural members.</p> <p>(ii) The features required by paragraph (i) of this section, in combination with other features, must ensure for the most significant severe accident sequences that the best-estimate environmental conditions (pressure and temperature) resulting from core-concrete interaction do not exceed ASME Code Service Level C for steel containments of Factored Load Category for concrete containments for approximately 24 hours.</p>	<p>Tier 1 § 2.14.1 contains a number of provisions to protect against core debris, including: the lower drywell floor has a minimum 79 m² clear of obstructions to debris spreading; there are ten thermally activated flooders valves for the lower drywell; the lower drywell floor is provided with corium protection at least 1.5 meters thick; and the reactor pressure vessel pedestal has two concentric steel cylinders filled with concrete. Tier 1 § 2.14.6 discusses the Containment Overpressure Protection System, which protects the containment from overpressurizing in severe accidents.</p>
<p><u>Section 5(c)(11) - High Pressure Core Melt Ejection -</u></p> <p>The standard design must include: (i) A reliable means to depressurize the reactor coolant system and (ii) cavity design features to reduce the amount of ejected core debris that may reach the upper containment.</p>	<p>Tier 1 § 2.1.2 discusses the Automatic Depressurization System. Tier 1 Figure 2.14.1 shows design features which provide interferences to ejected core debris traveling from the lower drywell to upper drywell. Tier 1 § 2.1.1 states that the reactor vessel skirt does not have openings connecting the upper and lower drywells.</p>

TABLE 1 - Cont.

"Applicable Regulation"	Relevant Provision from Tier 1 of the ABWR
<p><u>Section 5(c)(12) - Equipment Survivability -</u></p> <p>The standard design must include analyses based on best-available methods to demonstrate that:</p> <p>(i) Equipment, both electrical and mechanical, needed to prevent and mitigate the consequences of severe accidents is capable of performing its function for the time period needed in the best-estimate environmental conditions of the severe accident (e.g., pressure, temperature, radiation) in which the equipment is relied upon to function; and</p> <p>(ii) Instrumentation needed to monitor plant conditions during a severe accident is capable of performing its function for the time period needed in the best-estimate environmental conditions of the severe accident (e.g., pressure, temperature, radiation) in which the instrumentation is relied upon to function.</p>	<p>The application for design certification contains the specific analyses identified in the "applicable regulations." Additionally, Tier 1 discusses design provisions that pertain to equipment survivability. For example, protection against the effects of severe accidents is provided by locating the following components and systems used in severe accidents outside the primary containment: most of the Residual Heat Removal System (§ 2.4.1); the AC independent firewater addition system (§§ 2.4.1, 2.15.6); recombiners (§ 2.14.8); pressure and water level instrumentation for the reactor vessel and primary containment (§ 2.1.2); and Containment Atmospheric Monitoring System sensors (§ 2.3.3). Additionally, § 3.4 requires safety-related instruments and controls to be qualified for design basis environments, and GE's evaluations indicate that such qualification in many cases provides reasonable assurance of survivability in severe accident environments. Tier 1 also discusses the fail open valves in the Containment Overpressure Protection System (§ 2.14.6) and reactor internal pump (RIP) external restraints which protect against ejection of the RIP caused by failure of casing welds in the event of a core melt event (§ 2.1.1). Finally, as discussed below, Tier 1 contains numerous provisions to assure containment integrity during severe accidents.</p>

TABLE 1 - Cont.

"Applicable Regulation"	Relevant Provision from Tier 1 of the ABWR
<p><u>Section 5(c)(13) - Containment Performance</u> -</p> <p>The standard design must include features to limit the conditional containment failure probability for the more likely severe accident challenges.</p>	<p>Tier 1 contains several factors that contribute to limit the conditional containment failure probability. Protection against large scale steam explosions is provided by the placement of the lower drywell beneath the reactor pressure vessel (§ 2.14.1). Protection against hydrogen deflagration/deconation is provided by an inerted containment atmosphere produced by the Atmospheric Control System (§ 2.14.6). Protection against containment bypass is provided by redundant fail-close main steam isolation valves (§ 2.1.2); the design of the vacuum breaker valves between the drywell and wetwell gas space (i.e., check valves with two position indication switches and control room alarms to detect containment bypass) (§ 2.14.1); and examination of the pressure boundary welds of the safety relief discharge lines in the wetwell using ASME Code Class 2 requirements (§ 2.1.2). Protection against containment failure due to high pressure/temperature combinations is provided by reliable heat removal (three divisions of RHR (§ 2.4.1) and the Reactor Water Cleanup System (§ 2.6.1); a steel drywell head with a thickness greater than or equal to 31.7 mm (§ 2.14.1); containment pressure boundary penetrations that are classified as ASME Code Class III, Division I (§ 2.14.1); and a containment design pressure and temperature of 309.9 kPaG and 171°C, respectively (§ 2.14.1). Additionally, the ABWR has a Containment Overpressure Protection System (§ 2.14.6).</p>

TABLE 1 - Cont.

"Applicable Regulation"	Relevant Provision from Tier 1 of the ABWR
<p><u>Section 5(c)(14) - Shutdown Risk</u> -</p> <p>The standard design must include a systematic examination of features in relation to shutdown risk assessing:</p> <ul style="list-style-type: none"> (A) Specific design features that minimize shutdown risk: (B) The reliability of decay heat removal systems; (C) Vulnerabilities introduced by new design features; and (D) Fires and floods occurring with the plant in modes other than full power. <p>An applicant for a combined license which references this design certification rule must submit as part of the application a description of the program for outage planning and control that ensures:</p> <ul style="list-style-type: none"> (A) The availability and functional capability during shutdown and low power operations of features important to safety during such operations; and (B) The consideration of fire, flood, and other hazards during shutdown and low power operations. The licensee shall implement this program throughout the service life of the plant. 	<p>The application for design certification for the ABWR contains the specified examination. In addition, Tier 1 discusses numerous features that contribute to a low shutdown risk, including three separate divisions of Residual Heat Removal with automatic valve alignment for decay heat removal (§ 2.4.1); alternate decay heat features, including main steam safety relief valves (§ 2.1.2) and heat exchangers in the Reactor Water Cleanup System (§ 2.6.1); reactor vessel water inventory control through automatic initiation of the High Pressure Core Flooder System and Low Pressure Core Flooder upon low reactor vessel water level (§§ 2.4.2 and 2.4.1) or through initiation of the AC Independent Water Addition System (§ 2.4.1) or the Condensate and Feedwater System (§§ 2.10.2 and 2.2.3); multiple sources of AC power (three divisions of electrical distribution, three emergency diesel generators and one combustion turbine generator, and two independent offsite AC power sources) (§§ 2.12.1, 2.12.11, 2.12.13); features to control reactivity (Reaction Protection System high flux trip, control rod brakes to prevent a control rod ejection and refueling interlocks) (§§ 2.2.1, 2.2.2, 2.2.5); instruments to monitor plant conditions during shutdown (§ 2.7.1); minimization of the effects of fires and floods through use separate divisional areas for mechanical and electrical equipment (§§ 2.15.10, 2.15.12); and Standby Gas Treatment System and secondary Containment to mitigate loss of primary containment integrity during refueling (§§ 2.14.4 and 2.15.10).</p>

TABLE 2

"APPLICABLE REGULATIONS" THAT COULD BE INTERPRETED AS BEING
INCONSISTENT WITH THE NRC-APPROVED ABWR STANDARD DESIGN

1) ISLOCA

The Staff's proposed "applicable regulation" on intersystem loss of coolant accidents (ISLOCA) states that low-pressure piping systems that interface with the reactor coolant pressure boundary must be able "to withstand full reactor coolant system pressure to the extent practical." The NRC's Final Safety Evaluation Report (FSER) for the ABWR, pp. 3-71 and 3-72, finds that the ISLOCA provisions for the ABWR "nearly achieves" the NRC Staff's goal of 90% survival probability and that the likelihood of rupture is "low." While the FSER also concludes that these provisions satisfy the "applicable regulations," it is possible that in the future other members of the Staff could reach an opposite conclusion based upon the finding in the FSER. As a result, future members of the Staff could require backfits to the ABWR, even if no new information exists.

2) Core Debris Cooling

The NRC Staff's proposed "applicable regulation" on core debris cooling states that the containment should be able to withstand conditions resulting from core-concrete interactions "for approximately 24 hours." As discussed in the FSER, pp. 19-54 and 19-55, the NRC Staff concluded the ABWR containment is acceptable even though the Staff found that the containment could withstand such conditions for less than twenty hours during several severe accident scenarios. ^{1/} It is possible that future members of the Staff may reach an opposite conclusion based upon the findings in the FSER and could require backfits to the ABWR.

3) Offsite Power Supply

The Staff's proposed "applicable regulation" on offsite power sources states that each safety division must be supplied directly from one of the offsite power sources with no intervening non-safety buses. However, as discussed in the FSER, pp. 8-17 to 8-18, the unit auxiliary transformers (UAT) for the ABWR power both safety divisions and non-safety load groups, and this arrangement could be construed as being inconsistent with the "applicable regulation." The

^{1/} In the FSER, p. 19-53, the Staff stated that the 24-hour period in SECY-93-087 "was developed as a guideline and not a strict criterion in recognition of the uncertainties in severe accident progression and phenomenology." However, by incorporating the 24-hour period in an "applicable regulation," the Staff is attempting to transform this criterion from a "guideline" to a binding requirement.

Staff accepted the ABWR design because it has other provisions to protect the independence of the safety divisions and non-safety load groups, including separation of the non-safety load groups and use of a reserve auxiliary transformer (RAT) that does not power both safety and non-safety loads from the same transformer winding. However, the language of the "applicable regulation" makes no allowance for these other provisions.

Furthermore, as a result of First-Of-A-Kind-Engineering (FOAKE) to develop detailed designs for future use by license applicants referencing the ABWR, it has been determined that a non-safety stub bus should be added between the RAT and the safety-related busses. This stub bus does not power any non-safety loads, use of the stub bus is consistent with the design intent of the approved ABWR design, and the NRC Staff has informally concluded that the addition of the stub bus would satisfy the NRC's desire that faults involving non-safety load groups not affect safety divisions. However, under the literal language of the "applicable regulation," the addition of this stub bus would not be acceptable even though it raises no safety concerns.

4) Fire Protection

The Staff's proposed "applicable regulation" on fire protection references Appendix R, Section III.G.1.a, which requires separation of components important to safe shutdown. However, as discussed in the FSER, pp. 9-59 to 9-61, the ABWR has certain exceptions to this general rule. For example, certain safe shutdown equipment in the main steam tunnel is not separated as required by Appendix R because the equipment would fail in a safe mode. The NRC Staff accepted these exceptions, but makes no allowance for them in its "applicable regulation."

ATTACHMENT B

GE'S SUGGESTED REVISIONS TO THE
LANGUAGE OF THE PROPOSED DESIGN CERTIFICATION RULE FOR THE ABWR

This attachment provides GE's suggested changes to the language of the proposed design certification rule for the ABWR. This attachment identifies GE's suggested additions and deletions. Each change has an associated footnote which explains GE's reasons for the change.

Appendix A To Part 52--Design Certification Rule
for the U.S. Advanced Boiling Water Reactor

1. Scope.

This Appendix constitutes the standard design certification for the U.S. Advanced Boiling Water Reactor (ABWR) design, in accordance with 10 CFR Part 52, Subpart B. The applicant for certification of the U.S. ABWR design was GE Nuclear Energy.

2. Definitions.

As used in this part:

(a) *Design control document (DCD)* means the master document that contains the DCD Introduction,¹ Tier 1 and Tier 2 information that is incorporated by reference into this design certification rule.

(b) *Tier 1* means the portion of the design-related information contained in the DCD that is certified by this design certification rule (hereinafter Tier 1 information). Tier 1 information consists of:

- (1) Definitions and general provisions;
- (2) Certified design descriptions;
- (3) Inspections, tests, analyses, and acceptance criteria (ITAAC);
- (4) Significant site parameters; and
- (5) Significant interface requirements.

The certified design descriptions, interface requirements, and site parameters are derived from Tier 2 information, but may be more general than the provisions in Tier 2. Compliance with the more detailed Tier 2 material provides a sufficient method, but not the only acceptable method, for complying with the more general provisions in Tier 1. However, the methods and provisions specified in Tier 2 shall be followed unless a change is made in accordance with the change processes specified in the design certification rule for the ABWR.

The Design Descriptions in Tier 1 pertain only to the design of structures, systems, and components of the ABWR standard plant and not to their operation, maintenance, and administration. In the event of an inconsistency between Tier 1 and Tier 2, Tier 1 shall govern. Design activities for structures, systems, and components outside the scope of the ABWR standard design may be performed using site-specific design parameters.

(c) *Tier 2* means the portion of the design-related information contained

¹ This addition clarifies that the DCD Introduction is incorporated by reference into the design certification rule. See NEI Comments, Att. B, § VI.

² These additions reflect provisions in the DCD Introduction that have been approved by the NRC. These provisions are needed if the NRC does not incorporate the DCD Introduction into the design certification rule. See NEI Comments, Att. B, § VI.

in the DCD that is approved by this design certification rule (hereinafter Tier 2 information). Tier 2 information includes:

- (1) The information required by 10 CFR 52.47;
- (2) The information required for a final safety analysis report under 10 CFR 50.34(b), and
- (3) Supporting information on the inspections, tests, and analyses that will be performed to demonstrate that the acceptance criteria in the ITAAC have been met. Compliance with Tier 2 is a sufficient, but not necessarily the only, method for complying with the ITAAC. The provisions and methods specified in Tier 2 shall be followed unless a change is made in accordance with the change processes specified in the design certification rule for the ABWR.
- (4) COL License Information Items, which identify certain matters that need to be addressed by an applicant or licensee referencing the design certification rule for the ABWR. The purpose of these COL License Information Items is to identify the type of information that must be addressed in plant-specific safety analysis reports (SAR) that reference the design certification rule for the ABWR. These COL License Information Items do not establish requirements; rather they identify an acceptable set of information, but not the only acceptable set of information, for inclusion in a plant-specific SAR. An applicant may deviate from or omit these COL License Information items, provided that the deviation or omission is identified and justified in the plant-specific SAR. After issuance of a construction permit or license, the COL License Information items have no further effect to that licensee; instead, the corresponding provisions in the plant-specific SAR are applicable.
- (5) Conceptual designs for those portions of the plant which are outside the scope of the ABWR standard design. As provided in 10 CFR 52.47(a)(1)(ix), these conceptual designs are not part of the design certification rule for the ABWR standard design, and do not impose requirements applicable to a license, nor to an application for a license, that references the design certification rule.
- (6) References to the ABWR Standard Safety Analysis Report, which shall not be construed as incorporating these sections, or the information therein, in Tier 2.
- (7) Proposed technical specifications for the portion of the plant within the scope of the standard design. These proposed technical specifications are applicable to an applicant for a combined license or operating license referencing this design certification rule, and shall be incorporated in the technical specifications in the license, except as changed pursuant to the provisions in Section 8 of this design certification rule that apply to changes in Tier 2 information. Changes in the proposed technical specifications by a license applicant are subject to NRC review and approval and a hearing as part of the license proceeding. After issuance of the combined license or operating license, the proposed technical specifications in Tier 2 have no further effect

to that licensee, and the technical specifications in the license are effective.

Tier 2 does not include proprietary and safeguards information from the Standard Safety Analysis Report for the ABWR. This proprietary and safeguards information, or its equivalent, must be included or referenced as part of a license application that references the design certification rule for the ABWR.

(d) Tier 2* means the portion of the Tier 2 information which cannot be changed without prior NRC approval by letter or other written document.⁶ This information is identified in the DCD. The restrictions on changes to Tier 2* information expire at first full power for a plant that references this design certification rule. Thereafter, changes to the Tier 2* information shall be controlled in the same manner as changes to other Tier 2 information.

(e) All other terms in this rule have the meaning set out in 10 CFR 50.2, 10 CFR 52.3, or Section 11 of the Atomic Energy Act of 1954, as amended, as applicable.

3. [Reserved].

4. Contents of the design certification.

(a) ~~{Both Tier 1 and Tier 2 of the}~~ ⁸ The ABWR Design Control Document, GE Nuclear Energy, Revision ~~{2, January 1995 are}~~ ⁹ 3, [dated], is incorporated by reference. This incorporation by reference was approved by the Director of

⁴ This paragraph was added to clarify that the proposed technical specifications in Chapter 16 of Tier 2 are different from the technical specifications discussed in Sections 8 and 9 of the design certification rule. See NEI Comments, Att. B, § IX.

⁵ These additions reflect the provisions in the DCD Introduction which have been approved by the NRC. These provisions are necessary if the NRC does not incorporate the DCD Introduction by reference into the design certification rule. See NEI Comments, Att. B, § VI.

⁶ This addition clarifies that the prior NRC approval of Tier 2* changes does not need to be included as part of a license or license amendment. See NEI Comments, Att. C, Response to Question 7

⁷ This addition indicates that all Tier 2* restrictions expire at first full power. See NEI Comments, Att. B, § VIII.

⁸ This change clarifies that all of the DCD, and not just the Tier 1 and Tier 2, are incorporated by reference into the design certification rule. See NEI Comments, Att. B, § VI.

⁹ This change indicates that a revision to the DCD Introduction will be needed to modify the expiration date of certain Tier 2* restrictions and to specify that the change process only applies to Section 19.8 of Tier 2, rather than all of Chapter 19 of Tier 2. See NEI Comments, Att. B, §§ VIII and IV.

the Office of the Federal Register on [Insert date of approval] in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of the U.S. ABWR DCD may be ~~obtained~~ ¹⁰ purchased from ~~{insert name and address of applicant or organization designated by the applicant}~~ ¹¹ National Technical Information Service, Springfield, VA 22161. Copies are also available for examination and copying at the NRC Public Document Room, 2120 L Street NW. (Lower Level), Washington, DC 20555, and for examination at the NRC Library, 11545 Rockville Pike, Rockville, Maryland 20582-2738.

(b) An applicant for a construction permit, operating license, or combined license that references this design certification shall reference both Tier 1 and Tier 2 of the U.S. ABWR DCD. However, the ITAAC in Tier 1 are not applicable to an applicant for a construction permit or operating license.¹²

(c) If there is a conflict between the U.S. ABWR DCD and either the application for design certification for the U.S. ABWR design or NUREG-1503, "Final Safety Evaluation Report related to the Certification of the Advanced Boiling Water Reactor Design," dated July 1994 (FSER), then the U.S. ABWR DCD is the controlling document.

5. Exemptions and applicable regulations.

(a) The U.S. ABWR design is exempt from portions of the following regulations, as described in the FSER (index provided in Section 1.6 of the FSER):

(1) Section VI(a)(2) of Appendix A to 10 CFR Part 100 - Operating Basis Earthquake Design Consideration;

(2) Section (b)(3) of 10 CFR 50.49 - Environmental Qualification of Post-Accident Monitoring Equipment;

(3) Section (f)(2)(iv) of 10 CFR 50.34 - Separate Plant Safety Parameter Display Console;

(4) Section (f)(2)(viii) of 10 CFR 50.34 - Post-Accident Sampling for Boron, Chloride, and Dissolved Gases; and

(5) Section (f)(3)(iv) of 10 CFR 50.34 - Dedicated Containment Penetration.

(b) Except as indicated in paragraph ~~(c)~~ (a)¹³ of this section, the regulations that apply to the U.S. ABWR design are those regulations in 10 CFR Parts 20, 50, 73, and 100 [July 1994], that are applicable and technically relevant, as described in the FSER.

~~{(c) In addition to the regulations specified in paragraph (b) of this section, the following regulations are applicable for purposes of 10 CFR 52.40, 52.54,~~

¹⁰ This change clarifies that copies of the DCD may not be obtained for free but must be purchased.

¹¹ This change identifies the organization from which the DCD may be purchased.

¹² This addition clarifies that ITAAC are not appropriate for application to Part 50 construction permits. See NEI Comments, Att. B, § X.

¹³ This change reflects deletion of the "applicable regulations." See NEI Comments, Att. B, § II.

~~52.59 and 52.63.~~

~~(1) In the standard design, the effects of intersystem loss of coolant accidents must be minimized by designing low-pressure piping systems that interface with the reactor coolant pressure boundary to withstand full reactor coolant system pressure to the extent practical.~~

~~(2) (i) Piping systems associated with pumps and valves subject to the test requirements set forth in 10 CFR 50.55a(f) must be designed to allow for: (A) Full flow testing of pumps and check valves at maximum design flow, and (B) Testing of motor operated valves under maximum achievable differential pressure, up to design basis differential pressure, to demonstrate the capability of the valves to operate under design basis conditions.~~

~~(ii) For pumps and valves subject to the test requirements set forth in 10 CFR 50.55a(f), an applicant for a combined license which references this standard design certification rule shall submit as part of the application:~~

~~(A) A program for testing check valves that incorporates the use of advanced non-intrusive techniques to detect degradation and monitor performance characteristics, and~~

~~(B) A program to determine the frequency necessary for disassembly and inspection of each pump and valve to detect degradation that would prevent the component from performing its safety function and which cannot be detected through the use of advanced non-intrusive techniques. The licensee shall implement these programs throughout the service life of the plant.~~

~~(3) For digital instrumentation and control systems, the design must include:~~

~~(i) An assessment of the defense-in-depth and diversity of instrumentation and control systems;~~

~~(ii) A demonstration of adequate defense against common-mode failures; and~~

~~(iii) Provisions for independent backup manual controls and displays for critical safety functions in the control room.~~

~~(4) The electric power system of the standard design must include an alternate power source that has sufficient capacity and capability to power the necessary complement of non-safety equipment that would most facilitate the ability of the operator to bring the plant to safe shutdown, following a loss of the normal power supply and reactor trip.~~

~~(5) The electric power system of the standard design must include at least one offsite circuit supplied directly from one of the offsite power sources to each redundant safety division with no intervening non-safety buses in such a manner that the offsite source can power the safety buses upon a failure of any non-safety bus.~~

~~(6) (i) The requirements of 10 CFR 50.48(a) and 10 CFR Part 50, Appendix R, Section III G.1.a, apply to all structures, systems, and components important to safety.~~

~~(ii) Notwithstanding any provision in paragraph (i) of this section, all structures, systems, and components important to safety in the standard design must be designed to ensure that:~~

~~(A) Safe shutdown can be achieved assuming that all equipment in any one fire area will be rendered inoperable by fire and re-entry into that fire area for~~

repairs and operator actions is not possible, except that this provision does not apply to (1) the main control room, provided that an alternative shutdown capability exists and is physically and electrically independent of the main control room, and (2) the reactor containment;

(B) Smoke, hot gases, or fire suppressant will not migrate from one fire area into another to an extent that could adversely affect safe shutdown capabilities, including operator actions; and

(C) In the reactor containment, redundant shutdown systems are provided with fire protection capabilities and means to limit fire damage such that, to the extent practicable, one shutdown division remains free of fire damage.

(7) The standard design must include and an applicant for a combined license which references this standard design certification rule shall submit as part of the application:

(i) The description of the reliability assurance program used during the design that includes scope, purpose, and objectives;

(ii) The process used to evaluate and prioritize the structures, systems, and components in the design, based on their degree of risk significance;

(iii) A list of structures, systems, and components designated as risk-significant; and

(iv) For those structures, systems, and components designated as risk-significant:

(A) A process to determine dominant failure modes that considered industry experience, analytical models, and applicable requirements; and

(B) Key assumptions and risk insights from probabilistic, deterministic, and other methods that considered operation, maintenance, and monitoring activities.

(8) The probabilistic risk assessment required by 10 CFR 52.47(a)(1)(v) must include an assessment of internal and external events. For external events, simplified probabilistic methods and margins methods may be used to assess the capacity of the standard design to withstand the effects of events such as fires and earthquakes. Traditional probabilistic techniques should be used to evaluate internal floods. For earthquakes, a seismic margin analysis must consider the effects of earthquakes with accelerations approximately one and two-thirds the acceleration of the safe shutdown earthquake.

(9) The standard design must include an on-site alternate ac power source of diverse design capable of powering at least one complete set of equipment necessary to achieve and maintain safe shutdown for the purposes of dealing with station blackout.

(10) (i) The standard design must include the features in paragraphs (A) - (C) below that reduce the potential for and effect of interactions of molten core debris with containment structures:

(A) Reactor cavity floor space to enhance debris spreading;

(B) A means to flood the reactor cavity to assist in the cooling process; and

(C) Concrete to protect portions of the lower drywell containment liner and other structural members.

(ii) The features required by paragraphs (i) of this section, in combination with other features, must ensure for the most significant severe accident sequences that the best-estimate environmental conditions (pressure and temperature) resulting from core-concrete interaction do not exceed ASME Code Service Level

~~C for steel containments or Factored Load Category for concrete containments for approximately 24 hours.~~

~~(11) The standard design must include: (i) A reliable means to depressurize the reactor coolant system and (ii) cavity design features to reduce the amount of ejected core debris that may reach the upper containment.~~

~~(12) The standard design must include analyses based on best available methods to demonstrate that:~~

~~(i) Equipment, both electrical and mechanical, needed to prevent and mitigate the consequences of severe accidents is capable of performing its function for the time period needed in the best estimate environmental conditions of the severe accident (e.g., pressure, temperature, radiation) in which the equipment is relied upon to function, and~~

~~(ii) Instrumentation needed to monitor plant conditions during a severe accident is capable of performing its function for the time period needed in the best estimate environmental conditions of the severe accident (e.g., pressure, temperature, radiation) in which the instrumentation is relied upon to function.~~

~~(13) The standard design must include features to limit the conditional containment failure probability for the more likely severe accident challenges.~~

~~(14) (i) The standard design must include a systematic examination of features in relation to shutdown risk assessing.~~

~~(A) Specific design features that minimize shutdown risk;~~

~~(B) The reliability of decay heat removal systems;~~

~~(C) Vulnerabilities introduced by new design features; and~~

~~(D) Fires and floods occurring with the plant in modes other than full power.~~

~~(ii) An applicant for a combined license which references this design certification rule shall submit as part of the application a description of the program for outage planning and control that ensures:~~

~~(A) The availability and functional capability during shutdown and low power operations of features important to safety during such operations; and~~

~~(B) The consideration of fire, flood, and other hazards during shutdown and low power operations. The licensee shall implement this program throughout the service life of the plant.¹⁴~~

6. Issue resolution for the design certification.

(a) The Commission has found that the structures, systems, components, and design features of the standard design as described in the DCD and FSER satisfy the relevant Commission regulations and provide adequate protection of the health and safety of the public. Inherent in this finding is the determination that additional or alternative structures, systems, components, design features, design criteria, testing, analyses, or justifications are not necessary for the standard design. The lack of need thereof is, accordingly, also considered a matter resolved in connection with issuance of this design

certification rule.¹⁵

(b) ~~+(a)+~~ All nuclear safety issues associated with the information in the FSER ~~for DCD~~, DCD, application for design certification of the ABWR including the ABWR Standard Safety Analysis Report, docket of the application for design certification of the ABWR, and the rulemaking record for design certification of the ABWR¹⁶ are resolved within the meaning of 10 CFR 52.63(a)(4). Within the scope of the standard design as discussed in the FSER and DCD, the NRC may not require an applicant or licensee to:

(1) provide structures, systems, components, or design features not discussed in the FSER or DCD; or

(2) provide additional design criteria, testing, analysis, or justification for structures, systems, components, or design features discussed in the FSER or DCD;

except in accordance with the change processes and other provisions in this design certification rule.

(c) ~~+(b)+~~ All environmental issues associated with the information in the NRC's environmental assessment for the ABWR design or the severe accident design alternatives in Revision 1 of the Technical Support Document for the ABWR, dated December 1994, are resolved within the meaning of 10 CFR 52.63(a)(4).

(d) Any change made in accordance with the change process set forth in Section 8 of this design certification rule is resolved within the meaning of 10 CFR 52.63(a)(4).¹⁸

(e) The matters listed above shall be considered resolved in all subsequent proceedings, including proceedings for issuance of a combined license, construction permit, or operating license; permit or license amendment proceedings; design certification and license renewal proceedings; proceedings under 10 CFR 52.103; and enforcement proceedings.

7. Duration of the design certification.

This design certification may be referenced for a period of 15 years from ~~(May 8, 1995)~~ [insert date 30 days after publication of the final rule in the

¹⁵ This addition reflects the need to broaden the scope of issues entitled to finality. See NEI Comments, Att. B, Section I.B.

¹⁶ This addition reflects the need to broaden the scope of issues entitled to finality. See NEI Comments, Att. B, Section I.B.

¹⁷ This addition reflects the need to broaden the scope of issues entitled to finality. See NEI Comments, Att. B, Section I.B.

¹⁸ This addition reflects the need to provide finality for changes made in accordance with the change process specified in the design certification rule. See NEI Comments, Att. B, § I.C.

¹⁹ This addition reflects the need to clarify that design certification issues have finality in all subsequent proceedings. See NEI Comments, Att. B, § I.D.

Federal Register²⁰, except as provided for in 10 CFR 52.55(b) and 52.57(b). This design certification remains valid for an applicant or licensee that references this certification until their application is withdrawn or their license expires, including any period of extended operation under a renewed license.

8. Change process.

(a) Tier 1 information.

(1) Generic (rulemaking) changes to Tier 1 information are governed by the requirements in 10 CFR 52.63(a)(1).

(2) Generic changes to Tier 1 information are applicable to all plants referencing the design certification as set forth in 10 CFR 52.63(a)(2).

(3) Changes from Tier 1 information that are imposed by the Commission through plant-specific orders are governed by the requirements in 10 CFR 52.63(a)(3).

(4) Exemptions from Tier 1 information are governed by the requirements in 10 CFR 52.63(b)(1).

(b) Tier 2 information.

(1) Generic (rulemaking)²¹ changes to Tier 2 information are governed by the requirements in 10 CFR 52.63(a)(1).

(2) Generic changes to Tier 2 information are applicable to all plants referencing the design certification as set forth in 10 CFR 52.63(a)(2).

(3) The Commission may not impose new requirements by plant-specific order on Tier 2 information of a specific plant referencing the design certification while the design certification is in effect under §§ 52.55 or 52.61, unless:

(i) A modification is necessary to secure compliance with the Commission's regulations applicable and in effect at the time the certification was issued, or to assure adequate protection of the public health and safety or the common defense and security; and

(ii) Special circumstances as defined in 10 CFR 50.12(a) are present.

(4) An applicant or licensee who references the design certification may request an exemption from Tier 2 information. The Commission may grant such a request only if it determines that the exemption will comply with the requirements of 10 CFR 50.12(a). The granting of an exemption on request of an applicant must be subject to litigation in the same manner as other issues in the construction permit, operating license, ~~for~~ combined license, or permit or

²⁰ This change is made to be consistent with 10 CFR § 52.55(a). See Attachment A, p. 13.

²¹ This addition is made to be consistent with the language in Section 8(a)(1).

license amendment²² hearing.

(5) (i) An applicant or licensee who references the design certification may depart from Tier 2 information, without prior NRC approval, unless the proposed change involves a change to Tier 1 or Tier 2* information, as identified in the DCD, the technical specifications in an operating license or combined license,²³ or an unreviewed safety question as defined in paragraphs (b) (5) (ii) or (b) (5) (iii) of this section. When evaluating the proposed change, an applicant or licensee shall consider all matters described in the DCD, including generic issues and shutdown risk for all postulated accidents including severe accidents~~†. These changes will no longer be considered "matters resolved in connection with the issuance or renewal of a design certification" within the meaning of 10 CFR 52.63(a)(4)†, but excluding the information in Chapter 19 of Tier 2 other than the information in Section 19.8.~~

(ii) A proposed departure from Tier 2 information, other than severe accident issues identified in Section ~~19.8 including attachments EA through EE of the DCD, must†~~ 19.8, shall²⁵ be deemed to involve an unreviewed safety question if:

(A) The probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the DCD may be increased;

(B) A possibility for an accident or malfunction of a different type than any evaluated previously in the DCD may be created; or

(C) The margin of safety as defined in the basis for any technical specification in an operating license or combined license²⁶ is reduced.

(iii) A proposed departure from information associated with severe accident issues identified in Section ~~19.8 of the DCD, including attachments EA through~~

²² This change reflects the fact that exemptions may also be the subject of construction permit or license amendment proceedings.

²³ This addition clarifies that the technical specifications in question are in the license, as distinct from the proposed technical specifications in Chapter 16 of Tier 2. See NEI Comments, Att. B, § IX.

²⁴ This change serves two purposes. First, it reflects that changes made in accordance with the change processes should have finality. See NEI comments, Att. B, § I.C. Second, it clarifies that only Section 19.8, and not all of Chapter 19, should be subject to the change process. See NEI Comments, Att. B, § IV.

²⁵ This change clarifies that only Section 19.8, and not all of Chapter 19, should be subject to the change process. See NEI Comments, Att. B, § IV.

²⁶ This addition clarifies that the technical specifications in question are in the license, not the proposed technical specifications in Chapter 16 of Tier 2. See NEI Comments, Att. B, § IX.

~~EE, must~~ 19.8 of Tier 2 shall²⁷ be deemed to involve an unreviewed safety question if:

(A) There is a substantial increase in the probability of a severe accident such that a particular severe accident previously reviewed and determined to be not credible could become credible; or

(B) There is a substantial increase in the consequences to the public of a particular severe accident previously reviewed.

(iv) Departures from Tier 2 information made in accordance with Section 8(b)(5) above, technical specification changes, and Tier 2* changes that do not involve an unreviewed safety question²⁸ do not require an exemption from this design certification rule.

(c) Other requirements of this design certification rule.

(1) Generic (rulemaking) changes to the provisions in this Appendix or to the DCD Introduction are governed by the requirements of Subpart H of 10 CFR Part 2.

(2) An applicant or licensee {who references the design certification may not depart from this rule's requirements, other than Tier 1 or 2 information, other than by an exemption} may request an exemption from the provisions in this Appendix or the DCD Introduction in accordance with 10 CFR 50.12(a).²⁹

(d) Generic Changes to the DCD by the Design Certification Applicant

(1) Changes to Tier 1 - Any change to Tier 1 proposed by the design certification applicant shall be the subject of a request for proposed rulemaking in accordance with the provisions specified in subsection (a) of this Section.

(2) Changes to Tier 2 - Prior to the first license application that references the DCD, the design certification applicant may make a change in Tier 2, unless the proposed change involves a change in Tier 1 or an unreviewed safety question. Any change by the design certification applicant to Tier 2* information designated in the DCD shall be subject to prior NRC Staff approval.

(i) The design certification applicant shall submit reports of any changes in Tier 2 to the NRC. The reports shall describe the change and provide a summary of a safety evaluation which provide the basis for the determination that the change does not involve an unreviewed safety question.

²⁷ This change clarifies that only Section 19.8 and not all of Chapter 19 should be subject to the change process. See NEI Comments, Att. B, § IV.

²⁸ This change clarifies that only unreviewed safety questions, and not technical specification changes and Tier 2* changes, require exemptions. See NEI Comments, Att. B, § VII.C.

²⁹ The change to subsection (c) has two purposes. First, it is intended to make the provision in the proposed rule more precise and less confusing. Second, it adds a provisions specifying how changes can be made in the DCD Introduction. See NEI Comments, Att. B, § XI.

(ii) For changes made hereunder, the design certification applicant shall submit to the NRC an update to the DCD on a replacement-page basis, which shall indicate the area changed, e.g., a bold line vertically drawn in the margin adjacent to the portion changed, and a page change identification (date of change or change number, or both).

(iii) A change made hereunder shall be considered resolved under 10 CFR 52.63(a)(4) unless the NRC determines, within six months of submission of the change, that the change involves an unreviewed safety question as defined in Section 8(b)(5) above.

(iv) A license applicant shall reference and utilize the updated DCD, unless the license applicant makes a change in accordance with the other provisions of this section.³⁰

9. Records and Reports.

(a) Records.

(1) The applicant for this design certification shall maintain a copy of the DCD that includes all generic changes to the DCD, including³¹ Tier 1 and Tier 2 information.

(2) An applicant or licensee that references this design certification shall maintain records of all changes to and departures from the DCD pursuant to Section 8 of this appendix. Records of changes made pursuant to Section 8(b)(5) must include a written safety evaluation which provides the bases for the determination that the proposed change does not involve an unreviewed safety question, a change to Tier 1 or Tier 2* information, or a change to the technical specifications in the operating license or combined license.³²

(b) Reports. An applicant or licensee that references this design certification shall submit a report to the NRC, as specified in 10 CFR 50.4, containing a brief description of any departures from the DCD, including a summary of the safety evaluation of each departure.³³ An applicant or licensee shall also submit updates to the DCD to ensure that the DCD contains the latest material developed for both Tier 1 and 2 information. The requirements of 10 CFR 50.71 for safety analysis reports must apply to these updates. These reports and updates must be submitted at the frequency specified below:

³⁰ The addition of subsection (d) allows the design certification applicant to make changes to Tier 2. See NEI Comments, Att. B, § V.

³¹ This addition reflects that changes might be made in the DCD Introduction as well as Tier 1 and Tier 2.

³² This addition clarifies that the technical specifications in question are in the license, not the proposed technical specifications in Chapter 16 of Tier 2. See NEI Comments, Att. B, § IX.

³³ This is an editorial change.

(1) During the interval from the date of application to the date of issuance of either a construction permit under 10 CFR Part 50 or a combined license under 10 CFR Part 52, the report and any updates to the DCD may be submitted along with amendments to the application.

(2) During the interval from the date of issuance of either a construction permit under 10 CFR Part 50 or a combined license under 10 CFR Part 52 until the applicant or licensee receives either an operating license under 10 CFR Part 50 or the Commission makes its findings under 10 CFR 52.103, the report must be submitted ~~(quarterly)~~ semiannually.³⁴ Updates to the DCD must be submitted annually.

(3) Thereafter, reports and updates to the DCD may be submitted annually or along with updates to the safety analysis report for the facility as required by 10 CFR 50.71, or at such shorter intervals as may be specified in the license.

(c) Retention Period. The plant-specific DCD, and the records of changes to and departures from the plant-specific DCD must be maintained until the date of termination of the construction permit or license.³⁵

10. Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC)

(a) An applicant for or holder of a combined license (COL) that references the design certification rule for the ABWR shall perform and demonstrate conformance with the ITAAC prior to fuel load. With respect to activities subject to an ITAAC, an applicant for a COL may proceed at its own risk with design and procurement activities, and a holder of a COL may proceed at its own risk with design, procurement, construction and preoperational activities, even though the NRC Staff may not yet have agreed that any particular ITAAC have been satisfied. In the event that an activity is subject to and in noncompliance with an ITAAC, the applicant for or holder of a COL shall either take corrective actions to successfully complete that ITAAC or request and obtain NRC approval of a change in or exemption from the ITAAC in accordance with the design certification rule for the ABWR.

(b) In accordance with 10 CFR 52.103(g), the Commission must find that the acceptance criteria in the ITAAC are met prior to operation. After the Commission has made the finding required by Section 52.103(g), the ITAAC do not constitute regulatory requirements for subsequent plant modifications. However, subsequent modifications must comply with the Tier 1 Design Descriptions, unless changes are made in the Tier 1 Design Descriptions in accordance with the change processes in Section 8 of this Appendix. Furthermore, after the NRC has issued its finding in accordance with 10 CFR 52.103(g), the ITAAC do not, by virtue of their inclusion in the Design Control Document, constitute requirements for the COL holder or for renewals of the COL.³⁶

³⁴ This change reflects a more reasonable reporting interval. See NEI Comments, Att. B, § VII.D.

³⁵ These changes reflect that the DCD in question is not the generic DCD, but the plant-specific version being maintained by each plant.

³⁶ These additions reflect the provisions in the DCD Introduction, which has been approved by the NRC. These provisions should be added to the design certification rule if the DCD Introduction is not incorporated by reference into the design certification rule. See NEI Comments, Att. B, § VI.

11. ITAAC Verification.

In order to provide a basis for the NRC to make the findings required by §§ 52.99 and 52.103(g), the licensee shall notify the NRC that the required inspections, tests, and analyses specified in the ITAAC have been successfully completed and that the corresponding acceptance criteria have been met. The NRC shall verify that the inspections, tests, analyses referenced by the licensee have been successfully completed and, based solely thereon, find that the prescribed acceptance criteria have been met. The NRC shall publish notice of successful completion of inspections, tests, and analyses in the Federal Register as required by § 52.99.³⁷

----- COMPARISON OF FOOTNOTES -----

†

~~FOOTNOTE 1-~~

~~For the standard design, the footnote reference in 10 CFR 50.46(a) to Branch Technical Position Auxiliary Power Conversion System Branch BTP-APCSB9.5-1, "Guidelines for Fire Protection for Nuclear Power Plants," will be to the July 1981 version.~~³⁸

³⁷ This addition is intended to clarify the requirements for implementation and NRC's verification of ITAAC. See NEI Comments, Att. B, § III.

³⁸ This change deletes a footnote for the "applicable regulations." See NEI Comments, Att. B, § II.

ATTACHMENT C

GE'S PROPOSED DESIGN CERTIFICATION RULE FOR THE ABWR

Appendix A To Part 52--Design Certification Rule
for the U.S. Advanced Boiling Water Reactor

1. Scope.

This Appendix constitutes the standard design certification for the U.S. Advanced Boiling Water Reactor (ABWR) design, in accordance with 10 CFR Part 52, Subpart B. The applicant for certification of the U.S. ABWR design was GE Nuclear Energy.

2. Definitions.

As used in this part:

(a) *Design control document (DCD)* means the master document that contains the DCD Introduction, Tier 1 and Tier 2 information that is incorporated by reference into this design certification rule.

(b) *Tier 1* means the portion of the design-related information contained in the DCD that is certified by this design certification rule (hereinafter Tier 1 information). Tier 1 information consists of:

- (1) Definitions and general provisions;
- (2) Certified design descriptions;
- (3) Inspections, tests, analyses, and acceptance criteria (ITAAC);
- (4) Significant site parameters; and
- (5) Significant interface requirements.

The certified design descriptions, interface requirements, and site parameters are derived from Tier 2 information, but may be more general than the provisions in Tier 2. Compliance with the more detailed Tier 2 material provides a sufficient method, but not the only acceptable method, for complying with the more general provisions in Tier 1. However, the methods and provisions specified in Tier 2 shall be followed unless a change is made in accordance with the change processes specified in the design certification rule for the ABWR.

The Design Descriptions in Tier 1 pertain only to the design of structures, systems, and components of the ABWR standard plant and not to their operation, maintenance, and administration. In the event of an inconsistency between Tier 1 and Tier 2, Tier 1 shall govern. Design activities for structures, systems, and components outside the scope of the ABWR standard design may be performed using site-specific design parameters.

(c) *Tier 2* means the portion of the design-related information contained in the DCD that is approved by this design certification rule (hereinafter Tier 2 information). Tier 2 information includes:

- (1) The information required by 10 CFR 52.47;
- (2) The information required for a final safety analysis report under 10 CFR 50.34(b), and
- (3) Supporting information on the inspections, tests, and analyses that will be performed to demonstrate that the acceptance criteria in the ITAAC have been met. Compliance with Tier 2 is a sufficient, but not necessarily the only, method for complying with the ITAAC. The provisions and methods specified in Tier 2 shall be followed unless a change is made in accordance with the change processes specified in the design certification rule for the ABWR.

(4) COL License Information Items, which identify certain matters that need to be addressed by an applicant or licensee referencing the design certification rule for the ABWR. The purpose of these COL License Information Items is to identify the type of information that must be addressed in plant-specific safety analysis reports (SAR) that reference the design certification rule for the ABWR. These COL License Information Items do not establish requirements; rather they identify an acceptable set of information, but not the only acceptable set of information, for inclusion in a plant-specific SAR. An applicant may deviate from or omit these COL License Information items, provided that the deviation or omission is identified and justified in the plant-specific SAR. After issuance of a construction permit or license, the COL License Information items have no further effect to that licensee; instead, the corresponding provisions in the plant-specific SAR are applicable.

(5) Conceptual designs for those portions of the plant which are outside the scope of the ABWR standard design. As provided in 10 CFR 52.47(a)(1)(ix), these conceptual designs are not part of the design certification rule for the ABWR standard design, and do not impose requirements applicable to a license, nor to an application for a license, that references the design certification rule.

(6) References to the ABWR Standard Safety Analysis Report, which shall not be construed as incorporating these sections, or the information therein, in Tier 2.

(7) Proposed technical specifications for the portion of the plant within the scope of the standard design. These proposed technical specifications are applicable to an applicant for a combined license or operating license referencing this design certification rule, and shall be incorporated in the technical specifications in the license, except as changed pursuant to the provisions in Section 8 of this design certification rule that apply to changes in Tier 2 information. Changes in the proposed technical specifications by a license applicant are subject to NRC review and approval and a hearing as part of the license proceeding. After issuance of the combined license or operating license, the proposed technical specifications in Tier 2 have no further effect to that licensee, and the technical specifications in the license are effective.

Tier 2 does not include proprietary and safeguards information from the Standard Safety Analysis Report for the ABWR. This proprietary and safeguards information, or its equivalent, must be included or referenced as part of a license application that references the design certification rule for the ABWR.

(d) Tier 2* means the portion of the Tier 2 information which cannot be changed without prior NRC approval by letter or other written document. This information is identified in the DCD. The restrictions on changes to Tier 2* information expire at first full power for a plant that references this design certification rule. Thereafter, changes to the Tier 2* information shall be controlled in the same manner as changes to other Tier 2 information.

(e) All other terms in this rule have the meaning set out in 10 CFR 50.2, 10 CFR 52.3, or Section 11 of the Atomic Energy Act of 1954, as amended, as applicable.

3. [Reserved].

4. Contents of the design certification.

(a) The ABWR Design Control Document, GE Nuclear Energy, Revision 3, [date] is incorporated by reference. This incorporation by reference was

approved by the Director of the Office of the Federal Register on [Insert date of approval] in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of the U.S. ABWR DCD may be purchased from National Technical Information Service, Springfield, VA 22161. Copies are also available for examination and copying at the NRC Public Document Room, 2120 L Street NW. (Lower Level), Washington, DC 20555, and for examination at the NRC Library, 11545 Rockville Pike, Rockville, Maryland 20582-2738.

(b) An applicant for a construction permit, operating license, or combined license that references this design certification shall reference both Tier 1 and Tier 2 of the U.S. ABWR DCD. However, the ITAAC in Tier 1 are not applicable to an applicant for a construction permit or operating license.

(c) If there is a conflict between the U.S. ABWR DCD and either the application for design certification for the U.S. ABWR design or NUREG-1503, "Final Safety Evaluation Report related to the Certification of the Advanced Boiling Water Reactor Design," dated July 1994 (FSER), then the U.S. ABWR DCD is the controlling document.

5. Exemptions and applicable regulations.

(a) The U.S. ABWR design is exempt from portions of the following regulations, as described in the FSER (index provided in Section 1.6 of the FSER):

(1) Section VI(a)(2) of Appendix A to 10 CFR Part 100 - Operating Basis Earthquake Design Consideration;

(2) Section (b)(3) of 10 CFR 50.49 - Environmental Qualification of Post-Accident Monitoring Equipment;

(3) Section (f)(2)(iv) of 10 CFR 50.34 - Separate Plant Safety Parameter Display Console;

(4) Section (f)(2)(viii) of 10 CFR 50.34 - Post-Accident Sampling for Boron, Chloride, and Dissolved Gases; and

(5) Section (f)(3)(iv) of 10 CFR 50.34 - Dedicated Containment Penetration.

(b) Except as indicated in paragraph (a) of this section, the regulations that apply to the U.S. ABWR design are those regulations in 10 CFR Parts 20, 50, 73, and 100 [July 1994], that are applicable and technically relevant, as described in the FSER.

6. Issue resolution for the design certification.

(a) The Commission has found that the structures, systems, components, and design features of the standard design as described in the DCD and FSER satisfy the relevant Commission regulations and provide adequate protection of the health and safety of the public. Inherent in this finding is the determination that additional or alternative structures, systems, components, design features, design criteria, testing, analyses, or justifications are not necessary for the standard design. The lack of need thereof is, accordingly, also considered a matter resolved in connection with issuance of this design certification rule.

(b) All nuclear safety issues associated with the information in the FSER, DCD, application for design certification of the ABWR including the ABWR Standard Safety Analysis Report, docket of the application for design certification of the ABWR, and the rulemaking record for design certification of the ABWR are resolved within the meaning of 10 CFR 52.63(a)(4). Within the scope of the standard design as discussed in the FSER and DCD, the NRC may not require

an applicant or licensee to:

(1) provide structures, systems, components, or design features not discussed in the FSER or DCD; or

(2) provide additional design criteria, testing, analysis, or justification for structures, systems, components, or design features discussed in the FSER or DCD; except in accordance with the change processes and other provisions in this design certification rule.

(c) All environmental issues associated with the information in the NRC's environmental assessment for the ABWR design or the severe accident design alternatives in Revision 1 of the Technical Support Document for the ABWR, dated December 1994, are resolved within the meaning of 10 CFR 52.63(a)(4).

(d) Any change made in accordance with the change process set forth in Section 8 of this design certification rule is resolved within the meaning of 10 CFR 52.63(a)(4).

(e) The matters listed above shall be considered resolved in all subsequent proceedings, including proceedings for issuance of a combined license, construction permit, or operating license; permit or license amendment proceedings; design certification and license renewal proceedings; proceedings under 10 CFR 52.103; and enforcement proceedings.

7. Duration of the design certification.

This design certification may be referenced for a period of 15 years from [insert date 30 days after publication of the final rule in the Federal Register], except as provided for in 10 CFR 52.55(b) and 52.57(b). This design certification remains valid for an applicant or licensee that references this certification until their application is withdrawn or their license expires, including any period of extended operation under a renewed license.

8. Change process.

(a) Tier 1 information.

(1) Generic (rulemaking) changes to Tier 1 information are governed by the requirements in 10 CFR 52.63(a)(1).

(2) Generic changes to Tier 1 information are applicable to all plants referencing the design certification as set forth in 10 CFR 52.63(a)(2).

(3) Changes from Tier 1 information that are imposed by the Commission through plant-specific orders are governed by the requirements in 10 CFR 52.63(a)(3).

(4) Exemptions from Tier 1 information are governed by the requirements in 10 CFR 52.63(b)(1).

(b) Tier 2 information.

(1) Generic (rulemaking) changes to Tier 2 information are governed by the requirements in 10 CFR 52.63(a)(1).

(2) Generic changes to Tier 2 information are applicable to all plants referencing the design certification as set forth in 10 CFR 52.63(a)(2).

(3) The Commission may not impose new requirements by plant-specific order on Tier 2 information of a specific plant referencing the design certification while the design certification is in effect under §§ 52.55 or 52.61, unless:

(i) A modification is necessary to secure compliance with the Commission's regulations applicable and in effect at the time the certification was issued, or to assure adequate protection of the public health and safety or the common defense and security; and

(ii) Special circumstances as defined in 10 CFR 50.12(a) are present.

(4) An applicant or licensee who references the design certification may request an exemption from Tier 2 information. The Commission may grant such a request only if it determines that the exemption will comply with the requirements of 10 CFR 50.12(a). The granting of an exemption on request of an applicant must be subject to litigation in the same manner as other issues in the construction permit, operating license, combined license, or permit or license amendment hearing.

(5)(i) An applicant or licensee who references the design certification may depart from Tier 2 information, without prior NRC approval, unless the proposed change involves a change to Tier 1 or Tier 2* information, as identified in the DCD, the technical specifications in an operating license or combined license, or an unreviewed safety question as defined in paragraphs (b)(5)(ii) or (b)(5)(iii) of this section. When evaluating the proposed change, an applicant or licensee shall consider all matters described in the DCD, including generic issues and shutdown risk for all postulated accidents including severe accidents, but excluding the information in Chapter 19 of Tier 2 other than the information in Section 19.8.

(ii) A proposed departure from Tier 2 information, other than severe accident issues identified in Section 19.8, shall be deemed to involve an unreviewed safety question if:

(A) The probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the DCD may be increased;

(B) A possibility for an accident or malfunction of a different type than any evaluated previously in the DCD may be created; or

(C) The margin of safety as defined in the basis for any technical specification in an operating license or combined license is reduced.

(iii) A proposed departure from information associated with severe accident issues identified in Section 19.8 of Tier 2 shall be deemed to involve an unreviewed safety question if:

(A) There is a substantial increase in the probability of a severe accident such that a particular severe accident previously reviewed and determined to be not credible could become credible; or

(B) There is a substantial increase in the consequences to the public of a particular severe accident previously reviewed.

(iv) Departures from Tier 2 information made in accordance with Section 8(b)(5) above, technical specification changes, and Tier 2* changes that do not involve an unreviewed safety question do not require an exemption from this design certification rule.

(c) Other requirements of this design certification rule.

(1) Generic (rulemaking) changes to the provisions in this Appendix or to the DCD Introduction are governed by the requirements of Subpart H of 10 CFR Part 2.

(2) An applicant or licensee may request an exemption from the provisions in this Appendix or the DCD Introduction in accordance with 10 CFR 50.12(a).

(d) Generic Changes to the DCD by the Design Certification Applicant

(1) Changes to Tier 1 - Any change to Tier 1 proposed by the design certification applicant shall be the subject of a request for proposed rulemaking in accordance with the provisions of subsection (a) of this Section.

(2) Changes to Tier 2 - Prior to the first license application that references the DCD, the design certification applicant may make a change to Tier 2, unless the proposed change involves a change in Tier 1 or an unreviewed safety question. Any change by the design certification applicant to Tier 2* information designated in the DCD shall be subject to prior NRC Staff approval.

(i) The design certification applicant shall submit reports of any change in Tier 2 to the NRC. The reports shall describe the change and provide a summary of a safety evaluation which provides the basis for the determination that the change does not involve an unreviewed safety question.

(ii) For changes made hereunder, the design certification applicant shall submit to the NRC an update to the DCD on a replacement-page basis, which shall indicate the area changed, e.g., a bold line vertically drawn in the margin adjacent to the portion changed, and a page change identification (date of change or change number, or both).

(iii) A change made hereunder shall be considered resolved under 10 CFR 52.63(a)(4) unless the NRC determines, within six months of submission of the change, that the change involves an unreviewed safety question as defined in Section 8(b)(5) above.

(iv) A license applicant shall reference and utilize the updated DCD, unless the license applicant makes a change in accordance with the other provisions of this Section.

9. Records and Reports.

(a) Records.

(1) The applicant for this design certification shall maintain a copy of the DCD that includes all generic changes to the DCD, including Tier 1 and Tier 2 information.

(2) An applicant or licensee that references this design certification shall maintain records of all changes to and departures from the DCD pursuant to Section 8 of this appendix. Records of changes made pursuant to Section 8(b)(5) must include a written safety evaluation which provides the bases for the determination that the proposed change does not involve an unreviewed safety question, a change to Tier 1 or Tier 2* information, or a change to the technical specifications in the operating license or combined license.

(b) Reports. An applicant or licensee that references this design certification shall submit a report to the NRC, as specified in 10 CFR 50.4, containing a brief description of any departures from the DCD, including a summary of the safety evaluation of each departure. An applicant or licensee shall also submit updates to the DCD to ensure that the DCD contains the latest material developed for both Tier 1 and 2 information. The requirements of 10 CFR 50.71 for safety analysis reports must apply to these updates. These reports and updates must be submitted at the frequency specified below:

(d) Generic Changes to the DCD by the Design Certification Applicant

(1) Changes to Tier 1 - Any change to Tier 1 proposed by the design certification applicant shall be the subject of a request for proposed rulemaking in accordance with the provisions of subsection (a) of this Section.

(2) Changes to Tier 2 - Prior to the first license application that references the DCD, the design certification applicant may make a change to Tier 2, unless the proposed change involves a change in Tier 1 or an unreviewed safety question. Any change by the design certification applicant to Tier 2* information designated in the DCD shall be subject to prior NRC Staff approval.

(i) The design certification applicant shall submit reports of any change in Tier 2 to the NRC. The reports shall describe the change and provide a summary of a safety evaluation which provides the basis for the determination that the change does not involve an unreviewed safety question.

(ii) For changes made hereunder, the design certification applicant shall submit to the NRC an update to the DCD on a replacement-page basis, which shall indicate the area changed, e.g., a bold line vertically drawn in the margin adjacent to the portion changed, and a page change identification (date of change or change number, or both).

(iii) A change made hereunder shall be considered resolved under 10 CFR 52.63(a)(4) unless the NRC determines, within six months of submission of the change, that the change involves an unreviewed safety question as defined in Section 8(b)(5) above.

(iv) A license applicant shall reference and utilize the updated DCD, unless the license applicant makes a change in accordance with the other provisions of this Section.

9. Records and Reports.

(a) Records.

(1) The applicant for this design certification shall maintain a copy of the DCD that includes all generic changes to the DCD, including Tier 1 and Tier 2 information.

(2) An applicant or licensee that references this design certification shall maintain records of all changes to and departures from the DCD pursuant to Section 8 of this appendix. Records of changes made pursuant to Section 8(b)(5) must include a written safety evaluation which provides the bases for the determination that the proposed change does not involve an unreviewed safety question, a change to Tier 1 or Tier 2* information, or a change to the technical specifications in the operating license or combined license.

(b) Reports. An applicant or licensee that references this design certification shall submit a report to the NRC, as specified in 10 CFR 50.4, containing a brief description of any departures from the DCD, including a summary of the safety evaluation of each departure. An applicant or licensee shall also submit updates to the DCD to ensure that the DCD contains the latest material developed for both Tier 1 and 2 information. The requirements of 10 CFR 50.71 for safety analysis reports must apply to these updates. These reports and updates must be submitted at the frequency specified below:

(1) During the interval from the date of application to the date of issuance of either a construction permit under 10 CFR Part 50 or a combined license under 10 CFR Part 52, the report and any updates to the DCD may be submitted along with amendments to the application.

(2) During the interval from the date of issuance of either a construction permit under 10 CFR Part 50 or a combined license under 10 CFR Part 52 until the applicant or licensee receives either an operating license under 10 CFR Part 50 or the Commission makes its findings under 10 CFR 52.103, the report must be submitted semiannually. Updates to the DCD must be submitted annually.

(3) Thereafter, reports and updates to the DCD may be submitted annually or along with updates to the safety analysis report for the facility as required by 10 CFR 50.71, or at such shorter intervals as may be specified in the license.

(c) *Retention Period.* The plant-specific DCD, and the records of changes to and departures from the plant-specific DCD must be maintained until the date of termination of the construction permit or license.

10. Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC).

(a) An applicant for or holder of a combined license (COL) that references the design certification rule for the ABWR shall perform and demonstrate conformance with the ITAAC prior to fuel load. With respect to activities subject to an ITAAC, an applicant for a COL may proceed at its own risk with design and procurement activities, and a holder of a COL may proceed at its own risk with design, procurement, construction and preoperational activities, even though the NRC Staff may not yet have agreed that any particular ITAAC have been satisfied. In the event that an activity is subject to and in noncompliance with an ITAAC, the applicant for or holder of a COL shall either take corrective actions to successfully complete that ITAAC or request and obtain NRC approval of a change in or exemption from the ITAAC in accordance with the design certification rule for the ABWR.

(b) In accordance with 10 CFR 52.103(g) the Commission must find that the acceptance criteria in the ITAAC are met prior to operation. After the Commission has made the finding required by Section 52.103(g), the ITAAC do not constitute regulatory requirements for subsequent plant modifications. However, subsequent modifications must comply with the Tier 1 Design Descriptions, unless changes are made in the Tier 1 Design Descriptions in accordance with the change processes in Section 8 of this Appendix. Furthermore, after the NRC has issued its finding in accordance with 10 CFR 52.103(g), the ITAAC do not, by virtue of their inclusion in the Design Control Document, constitute requirements for the COL holder or for renewals of the COL.

11. ITAAC Verification.

In order to provide a basis for the NRC to make the findings required by §§ 52.99 and 52.103(g), the licensee shall notify the NRC that the required inspections, tests, and analyses specified in the ITAAC have been successfully completed and that the corresponding acceptance criteria have been met. The NRC shall verify that the inspections, tests, analyses referenced by the licensee have been successfully completed and, based solely thereon, find that the prescribed acceptance criteria have been met. The NRC shall publish notice of successful completion of inspections, tests, and analyses in the Federal Register as required by § 52.99.