14 INITIAL TEST PROGRAM

14.3.2.3.6 Structural Task Group Review

The applicant added a definition of "ASME Code" to ABWR DCD, Tier 1, Section 1.1, "Definitions," and made a corresponding addition to Tier 1, Section 2.1.1, "Reactor Pressure Vessel System."

14.3.2.3.6.1 Regulatory Criteria

The applicant added a definition of "ASME Code" to ABWR DCD, Tier 1, Section 1.1, "Definitions," and made a corresponding addition to Tier 1, Section 2.1.1, "Reactor Pressure Vessel System." This definition is consistent with the NRC position on the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (BPV) Code at the time of the original design certification, specifically that the ASME BPV Code may be used contingent on the conditions imposed by the NRC in 10 CFR 50.55a, including any NRC-authorized ASME Code alternatives. The addition to Tier 1, Section 2.1.1 clarifies that the listed ASME materials are in Section II of the ASME Code, which is consistent with the NRC position at the time of the original design certification. As the proposed changes are consistent with the staff position at the time of original design certification, these changes are considered a "modification," as this term is defined in Chapter 1 of this supplement, and will be evaluated using the regulations applicable and in effect at initial certification.

The applicable regulatory requirements for evaluating the proposed DCD modification are as follows:

- 10 CFR 52.47(a)(1)(vi) (1997) requires that a design certification application contain the proposed tests, inspections, analyses, and acceptance criteria which are necessary and sufficient to provide reasonable assurance that, if the tests, inspections and analyses are performed and the acceptance criteria met, a plant which references the design is built and will operate in accordance with the design certification.

- 10 CFR 50.55a (1997) requires compliance with codes and standards incorporated by reference into the regulations, subject to conditions imposed by the NRC and with allowance for NRC-authorized alternatives to the codes and standards.

14.3.2.3.6.2 Summary of Technical Information

ABWR DCD, Revision 6, Tier 1, Section 1.1, as supplemented by RAI response letters described below provides a definition of "ASME Code" to clarify that "ASME Code" refers to Section III of the ASME BPV Code unless specifically stated otherwise and that a Tier 1 departure and associated exemption is not required where Tier 1 requires compliance with the "ASME Code" and the applicant/licensee has received NRC authorization for an alternative under 10 CFR 50.55a to Section III of the ASME BPV Code. The supplemental RAI responses discussed below add the words "Code Section II" between "ASME" and "materials" to Tier 1, Section 2.1.1 to denote the specific Section of the ASME Code being invoked.

14.3.2.3.6.3 Technical Evaluation

ABWR DCD, Revision 5, Tier 1, Section 1.1, did not include a definition for "ASME Code." Without an explicit definition of "ASME Code," a concern was raised regarding whether a COL holder referencing a DCD might need a Tier 1 departure and associated exemption to use an alternative to the Code under 10 CFR 50.55a. The NRC has previously stated explicitly that an exemption would not be needed for NRC-authorized alternatives to the ASME Code (as noted in the statement of considerations for the August 28, 2007 revision to 10 CFR Part 52, 72 FR 49438). This reflects the NRC's historical practice of allowing use of the ASME Code contingent on the conditions imposed by the NRC in 10 CFR 50.55a, including any NRC-authorized ASME Code alternatives. Due to the potential misconception that NRC-authorized alternatives to the ASME Code might be viewed as unacceptable for closure of Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) invoking the ASME Code, staff issued RAI 14.03-1, which raised this potential misconception to GEH. In its RAI response (ADAMS Accession No. ML15092A175), GEH proposed a definition, which was later supplemented by a March 2, 2017 letter (ADAMS Accession No. ML17061A065) and a March 21, 2017 letter (ADAMS Accession No. ML17080A042) after public teleconferences held on February 23, 2017, and March 16, 2017, respectively. The following is the resulting definition:

> **ASME Code** means Section III of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, unless specifically stated otherwise. Some Tier 1 content in the ABWR DCD specifies that structures, systems, and components be designed and constructed in accordance with ASME Code Section III requirements. When this language is used, it indicates that the Tier 1 requirements will be met by satisfying the edition and addenda of the ASME Boiler and Pressure Vessel Code, Section III as specified in the DCD and as incorporated by reference in 10 CFR 50.55a subject to the conditions listed in 10 CFR 50.55a, or in accordance with alternatives authorized by the NRC pursuant to 10 CFR 50.55a.

In conjunction with this change, GEH added a section identifier to an ASME reference in Tier 1, Section 2.1.1, where the ASME Code Section referenced was Section II instead of Section III. Because these changes do not affect previous NRC safety findings in the NUREG–1503 and NUREG–1503, Supplement 1 or change the ABWR's compliance with ASME Code requirements, the staff finds this addition of a definition for ASME Code and a corresponding section identifier in Tier 1, Section 2.1.1 acceptable. The NRC staff confirmed that the initially proposed wording was incorporated in DCD Revision 6 (February 2016), and considers incorporation of the markups from the March 2, 2017 and March 21, 2017 letters to be a confirmatory item for Revision 7 of the DCD. The incorporation of these markups in Revision 7 of the DCD is being tracked as **Confirmatory Item 14.03-1**.

14.3.2.3.6.4 Conclusion

The NRC staff reviewed the licensee's proposed changes to ABWR DCD, Tier 1, Section 1.1, "Definitions," and Section 2.1.1, "Reactor Pressure Vessel System." Based on the staff's technical evaluation described in this section, the staff found that:

(1) The proposed changes do not adversely affect any previous NRC safety findings.

(2) The proposed changes provided additional clarity to existing documentation.

For the reasons specified above, the staff found that the proposed changes to ABWR DCD, Tier 1, Section 1.1, "Definitions," and Section 2.1.1, "Reactor Pressure Vessel System," were acceptable.

Based on this finding, the staff concludes that there is reasonable assurance that the requirements of 10 CFR 52.47(b)(1) and 10 CFR 50.55a continue to be met with the change described in this safety evaluation.

14.3.2.3.8 Verification of As-Built Components

In RAI 14.03.01, the NRC staff asked whether revisions made to the Economic Simplified Boiling Water Rector (ESBWR) design certification ITAAC to enhance the clarity of ASME Code requirements would be considered appropriate for the content of the ABWR DCD. Specifically, the requirement for ASME Code component design verification was clarified to indicate that the activities performed to satisfy the ITAAC should be performed at the as-built stage, and should involve a design verification and as-built reconciliation using ASME Code design reports. In response to RAI 14.03.01, the applicant provided confirmation of the NRC staff's understanding that ASME Code component design verification relies on testing performed post-construction, once the as-built component is in its final installed location at the plant site, with the exception of two ITAAC, which clearly state the document to be reviewed (ADAMS Accession No. ML15092A175). This response did not result in a change to the DCD, but the response is noted here to preserve information for future use.

14.3.2.3.8.1 Regulatory Criteria

There is no change to the DCD proposed by this RAI response, but the RAI response clarifies the meaning of the DCD. The applicable regulatory requirements in effect at initial certification are:

- 10 CFR 52.47(a)(1)(vi) (1997) requires that a design certification application contain the proposed tests, inspections, analyses, and acceptance criteria which are necessary and sufficient to provide reasonable assurance that, if the tests, inspections and analyses are performed and the acceptance criteria met, a plant which references the design is built and will operate in accordance with the design certification.

- 10 CFR 50.55a (1997) requires compliance with codes and standards incorporated by reference into the regulations, subject to conditions imposed by the NRC and with allowance for NRC-authorized alternatives to the codes and standards.

14.3.2.3.8.2 Summary of Technical Information

The applicant responded to RAI 14.03.01, providing confirmation of the NRC staff's understanding that ASME Code component design verification relies on testing performed post-construction, once the as-built component is in its final installed location at the plant site, with the exception of two ITAAC, which clearly state the document to be reviewed.

14.3.2.3.8.3 Technical Evaluation

The NRC staff agrees with the applicant's response, indicating that ASME Code component design verification relies on testing performed post-construction, once the as-built component is in its final installed location at the plant site, with the exception of two ITAAC, which clearly state

the document to be reviewed. The intent of ASME Code component design verification is not to review as-designed components, but rather to ensure that the as-built components are consistent with the design. This is consistent with the definitions in ABWR DCD Tier 1, Section 1.1, and with the guidance in NUREG–0800, SRP Section 14.3, Draft Revision 0, both of which define "as-built" as "the physical properties of the structure, system, or component following the completion of its installation or construction activities at its final location at the plant site," and provide that a test's purpose is to "evaluate the performance or integrity of as-built structures, systems, or components, unless explicitly stated otherwise."

14.3.2.3.8.4 Conclusion

As described in the staff's evaluation above, there are no changes to the ABWR DCD. There is no change to the licensing basis as a result of this RAI response, but the applicant confirmed the NRC staff's understanding of how ASME Code component design verification is accomplished, which provides reasonable assurance that the ITAAC meet the requirements of 10 CFR 52.47(a)(1)(vi) and will verify that 10 CFR 50.55a will be met for the as-built plant since it must meet the design requirements.