

# **Enclosure 1**

**M170049**

## **Response to NRC Feedback**

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### **NRC Request**

In a non-public teleconference held January 19, 2017, GEH and the NRC discussed security-related information regarding the ABWR design certification renewal application aircraft impact assessment (AIA). The NRC asked questions and provided feedback on its review of technical report NEDE-33875P, Revision 2. In addition, in a January 25, 2017 letter to GEH regarding the GEH response to the NRC AIA inspection report notice of violation, the NRC asked if NEDE-33875P is incorporated by reference into the ABWR Design Control Document (DCD).

### **GEH Actions**

GEH responded to the NRC regarding incorporation by reference in a letter dated February 1, 2017. GEH committed to submit revisions to the NED technical report (public and non-public versions) and the associated DCD markups by no later than February 28, 2017. GEH also indicated that it would clarify that NEDE-33875P is intended to be incorporated by reference in the DCD.

In the table below, GEH describes the actions taken to resolve the NRC questions and feedback (without including security-related or proprietary information). In addition, GEH submits revisions to the technical report NEDE-33875P, along with markups to the draft Revision 7 of the ABWR Design Control Document (DCD). GEH notes that additional changes are made in the reports or in the DCD based on a broader review for other similar items (extent of condition) and for ensuring clarity in describing the intent and purpose of the technical report.

Because there are portions of the report that contain proprietary or security-related information, a non-public version (NEDE-33875P) and a public version (NEDO-33875) are provided in the enclosures.

### **Impact on the ABWR DCD**

Changes to the following sections are shown on the enclosed DCD markups. The draft Revision 7 pages for Sections 3.H.6 and 19G key design features are included and the pages with no changes for this response are so marked.

- Section 1.6, including Table 1.6-1, and new Table 1.6-2
- Section 3H.6 shows number changes for Items (6) and (7) from earlier DCD markups that use (6a) and (6b)
- Section 9A.5.5.10
- Section 19G (Subsections 19G.4.2, 19G.4.3, and 19G.6)

Changes in NEDE-33875P are described in the Revision Summary for the enclosed report.

NEDO-33875 is revised to contain the information in NEDE-33875P, with proprietary information and security-related information redacted.

**Table 1, Issues and Resolutions**

NEDE-33875P Rev. 2, Section or Table No.	Description of Issue	Resolution
General Comment	The NRC asked GEH to clearly incorporate by reference (IBR) the technical report (NEDE-33875P) and to indicate that Appendix A (NRC rule) and Appendix D (affidavit) are not part of the IBR.	The NEDE-33875P report (NED report) is clarified and a new Table 1.6-2, "Reports Incorporated by Reference," is added to the ABWR DCD, Tier 2. Note that the incorporation by reference does not include Appendices A and D (a restatement of 10 CFR 50.150 and the GEH Affidavit).
General Comment	Because the document is IBR, the NRC asked GEH to review the NEDE document to separately mark the proprietary information and security-related information so that the public version would redact only that information.	The original request to withhold the document was largely to protect AIA information. GEH has reviewed the report to separately mark the proprietary information and identify the parts that are security-related information and has included a more information in the public version.
Sections 1.1 and 1.2	Better clarify how the NED is part of the DCD (IBR) and describe its use in these sections. Consider explaining which revision was used for the AIA and if the NEDE report applies to later revisions.	These sections are revised to improve clarity for the content of the document and the revisions of the DCD used for the AIA and for further revisions.
Table 3-2	Noted that approximate values are given for distances between structures, without a tolerance.	The NED report is revised to more clearly address the relative location and separation distances of the intervening structures with respect to the shielded structure, when used in conjunction with the DCD (19G.4.2 and Figure 1.2-1).  Specifically, the NED report is revised in Table 3-2 and a new drawing (Figure 3-1) is added.
Table 4-2	T4-2 does not tabulate SS400 structural steel. T4-3 does tabulate SS400 structural steel. SS400 structural steel is a foreign material not used in the U.S.	SS400 is not used as structural steel in the ABWR. SS400 was the representative material used for the trolley properties in the assessment to obtain representative mass and stiffness. ABWR trolley is detailed design, so this information is not considered a design requirement for the ABWR design certification. Accordingly, SS400 is removed from Table 4-3, as it is not necessary. For consistency, Table 4-1 is updated to remove the associated design input.
Table 4-4	Please explain why the interior walls J, K, and L are not strengthened at all elevations.	The NEI guidance was followed to determine strike locations addressing the worst-case conditions. The strengthening measures described in Table 4-4 reflect the structural

NEDE-33875P Rev. 2, Section or Table No.	Description of Issue	Resolution
		AIA Finite Element model. Table 4-4 is consistent with the strengthening measures applied for rebar configuration in the model at those locations. The rebar configuration in the FE AIA structural model adequately addresses the strike at that location per NEI guidance and reflects a minimum strengthening requirement to be further detailed per design code requirements in detailed design space. Accordingly, no changes are necessary for this item.
Table 4-4	<p>Strengthening of interior wall L says in second column: Elevation 12300mm to 18100mm RC Between R6-R7</p> <p>Third column states: Elevation 12300mm to 18100mm Wall Along RC Between R6 and Door Opening</p> <p>This appears to be inconsistent with Figure 4-1.</p>	There appears to be a mismatch between Table 4-4 and Figure 4-1. The table is being modified to more precisely clarify the strengthening of the wall sections for interior wall L. GEH confirmed that Figure 4-1 is correct.
Tables 5-1 and 5-2	The NRC found references in these tables to the NED report itself, which was somewhat confusing. Consider rewording the reference "(Reference 19G-3)" in the NED report from Table 5-1 Items (1), (4), (11) & Table 5-2 Items (1), (2), (3), (6), (7) as appropriate.	The tables are modified to reword the references to NEDE-33875P to address this issue.
Table 5-2 and Table 3-2	Table 5-2 refers to Table 3-2 for locations and separation distances for intervening structures.	<p>The NED report is revised to more clearly address the relative location and separation distances of the intervening structures with respect to the shielded structure, when used in conjunction with the DCD (19G.4.2 and Figure 1.2-1).</p> <p>Specifically, the NED report is revised in Table 3-2 and a new drawing (Figure 3-1) is added.</p>
Table 5-2	A key design feature is added regarding the C/B roof: Any permanent structure that penetrates the C/B roof is sized to preclude a strike from the east and west directions.	Although NEI rules do not require assessing a direct hit on the roof, this key design feature was added to ensure that penetrations are not installed on the C/B roof without an AIA cognizant engineer's review. Section 3.5 is updated to include information to alert users accordingly.

<b>NEDE-33875P Rev. 2, Section or Table No.</b>	<b>Description of Issue</b>	<b>Resolution</b>
Table 5-2	The NRC suggested that the key design feature for HVAC ducting locations be related directly to the performance criteria so that AIA strikes do not result in a loss of all divisions of core cooling.	Key design feature (9) in DCD Section 19G.4.2 is revised to address this feedback. Table 5-2 is revised to be consistent with this change in the key design feature in the DCD.
Table 5-2	The NRC suggested that the key design feature for the fire areas listed in DCD Section 9A.5.5.10 be revised to ensure that AIA credited equipment is not added to rooms on the list without an AIA cognizant engineer's review.	The key design feature is updated in DCD Section 19G.4.3 and the NED report is updated to be consistent with the DCD. A new paragraph added to the NED report (Section 3.5) alerts a designer to the key design feature.
Figures in Appendices B and C	These figures do not give elevations.  [Note that these figures show the floor number rather than the elevation.]	Elevations are added to the figure titles.