



**HITACHI**

**GE Hitachi Nuclear Energy**

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U.S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, D.C. 20555-0001

**Subject: Submittal of Human Factors Engineering (HFE) LTR Change Logs**

The purpose of this letter is to submit the GE Hitachi Nuclear Energy (GEH) HFE Change Logs to the U.S. Nuclear Regulatory Commission (NRC). Please note that these Change Logs are being submitted as reviewer aids only and do not alter or affect the content of the previously issued and submitted topical reports.

The HFE LTR Change Logs that are being submitted are listed below:

- NEDE-33217P, Revision 4 - Man-Machine Interface System and Human Factors Engineering Implementation Plan (MMIS)
- NEDE-33276P, Revision 2 - HFE Verification and Validation Plan (V&V)
- NEDO-33262, Revision 2 - Operating Experience Review (Human Factors) Implementation Plan (OER)
- NEDO-33219, Revision 2 - Functional Requirements Analysis Implementation Plan (FRA)
- NEDO-33220, Revision 2 - Allocation of Functions Implementation Plan (AOF)
- NEDO-33221, Revision 2 - Task Analysis Implementation Plan (TA)
- NEDO-33266, Revision 2 - HFE Staffing and Qualifications Implementation Plan (S&Q)
- NEDO-33267, Revision 3 - HFE Human Reliability Analysis Implementation Plan (HRA)
- NEDO-33268, Revision 3 - Human-System Interface Design Implementation Plan (HSI)
- NEDO-33274, Revision 3 - HFE Procedure Development Implementation Plan (Proc)
- NEDO-33275, Revision 2 - Training Development Implementation Plan (Train)
- NEDO-33278, Revision 3 - HFE Design Implementation Plan (DI)

D068  
NRC

NEDO-33277, Revision 3 - Human Performance Monitoring Implementation Plan  
(HPM)

Please note that LTRs NEDE 33245P (Software Quality Assurance Program Manual (SQAP) and NEDE-33226P (I&C Software Management Program Manual (SMPM) contained the revision log, in the NEDE itself, and were transmitted as part of the LTR submittal. Therefore, they were not included in this submittal.

If you have any questions or require additional information, please contact me.

Sincerely,



James C. Kinsey  
Vice President, ESBWR Licensing

References:

Attachment:

1. MFN 08-546 – Change Logs for HFE LTRs

cc: AE Cabbage USNRC (with enclosure)  
RE Brown GEH/Wilmington (with enclosure)  
DH Hinds GEH/Wilmington (with enclosure)  
GB Stramback GEH/San Jose (with enclosure)  
eDRF 0000-0087-4989

**Attachment**

**MFN 08-546**

**Human Factors Engineering**

**Change Logs for HFE LTRs**

**NEDO 33217 Changes From Revision 3 to Revision 4**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
1.	Global	Replaced "work plan" with "work instructions" to incorporate RAI 18.2-10 S02	RAI 18.2-10 S02
2.	Global	Replaced COLOG with fleet-wide owner's group	
3.	Global	Replaced GE with GEH and corrected name of QA plan from GEEN to GEH Nuclear Energy QA Plan	
4.	Global	Global replaced software plan titles. Replaced "SMP" with "SMPM", "Software Management Plan" with "Software Management Program Manual", and "SQAP" with "SQAPM" and "Software Quality Assurance Plan" with "Software Quality Assurance Program Manual"	
5.	Global	Replaced reference to plans "described in section 4" with "listed in section 2.1.2"	
6.	Global	Corrected paragraph number references to SQAPM and SMPM resulting from revisions to the documents	
7.	Global	Deleted section that described implementation descriptions in the deleted section 4 and references to section 4.	
8.	Global	Replaced "reference plants" with "predecessor plants" to include all ABWR predecessors within operating experience	
9.	Global	Deleted "high level" before task analysis for consistency with TA plan	
10.	2.1 - 2.5	Revised Applicable Documents section numbers to be consistent with NEDO established format	
11.	1.3.2	Deleted COLOG from Acronyms	
12.	1.3.2	Corrected acronyms modified as a result of software plan changes: SIntP, SMPM, SQAPM, STP,	
13.	1.3.2	Deleted acronym for GEEN and added GEH	
14.	2 all subsections	Deleted * and note concerning Appendix E. Appendix E is deleted	
15.	2.1.2	Revised names to software plans (13) and (14)	
16.	2.3.2	Updated reference to Cyber Security Plan	
17.	2.4(8)	Corrected date to applicable reference	

**NEDO 33217 Changes From Revision 3 to Revision 4**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
18.	3.1.3	Corrected names of QA plan	
19.	3.1.3(3)	Added Separation of Protection and Control Systems as relevant GDC section - Comment from Cyber Security CAR/ACT	
20.	3.1.3 (5)	Added statement of requirements for cyber security and reference to cyber security plan for guidance	
21.	3.1.4.1(2)	Added a bullet to HFE design team for Cyber Security	
22.	3.1.4.2	Replaced Figure 3.1.4-2 with COLOG deleted	
23.	3.1.4	Deleted reference to GEH internal engineering procedures	
24.	3.1.4.1(7)	Added new section and table 3.1.4-1 for team composition to address RAI 14.3-271	RAI 14.3-271
25.	3.2.4.1	Added Revised Figure 1. No technical change to drawing.	
26.	3.1.4.1(7)	Added a bullet for Cyber Security life cycle	
27.	3.2.3(1), (2), (8)	Revised text to include other ABWR plants as reference	
28.	3.2.3(13)	Added a new requirement (13) for cyber security requirement and reference to plan	
29.	3.2.4.2(6)	Included cyber security in item (6) as part of the CRDT team membership.	
30.	3.2.4.2 (7)	Included "and guidance on issues of cyber security" in item (7) for input to procedures and training development	
31.	3.2.4.4	Revised section (added in earlier rev to incorporate RAI 19.2-37) to be consistent with roles and responsibilities in GEH Procedures Development implementation plan.	RAI 19.2-37
32.	3.2.4.4 (1), 3rd bullet	Added "including cyber security risk analysis" for GEH role in support of emergency management program development	

**NEDO 33217 Changes From Revision 3 to Revision 4**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
33.	3.2.5	Added "Application of cyber security methods including secure design/coding practices and training of operators to recognize cyber threats results in a safe and secure plant" in response to CAR/ACT	
34.	3.2.6	Moved summary introductory statement from section 4 to this section. and deleted reference to deleted section 4.	
35.	3.3.1	Corrected software plan changes and added Software Test Plan in SQAPM list	
36.	3.3.3.8	Added requirement statement " The implementation of cyber security program requirements for the software development and testing are described in the ESBWR Cyber Security Plan." in response to CAR/ACT	
37.	3.3.4(7)	Added O&M abbreviation	
38.	3.3.4.1 – 3.3.4.8	Deleted duplicated text from HFE and software NEDO plans in accordance with RAI 18.2-18 and MFN #07-428	RAI 18.2-18
39.	4.1.1 – 4.1.12	Deleted duplicated text from HFE and software NEDO plans in accordance with RAI 18.2-18 and MFN #07-428	RAI 18.2-18
40.	4.2.1.2 – 4.2.1.6	Deleted duplicated text from HFE and software NEDO plans in accordance with RAI 18.2-18 and MFN #07-428	RAI 18.2-18
41.	4.2.2.2 – 4.2.2.6	Deleted duplicated text from HFE and software NEDO plans in accordance with RAI 18.2-18 and MFN #07-428	RAI 18.2-18
42.	4.2.3 – 4.2.10	Deleted duplicated text from HFE and software NEDO plans in accordance with RAI 18.2-18 and MFN #07-428	RAI 18.2-18
43.	Appendix A	Revised section based on released HFEITS software content and deleted sample form	
44.	Appendix E	Deleted duplicated text from HFE and software NEDO plans in accordance with RAI 18.2-18 and MFN #07-428	RAI 18.2-18

**NEDO 33217 Changes From Revision 3 to Revision 4**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
45.		Confirmed changes implemented from RAIs 18.0-4, 18.2-3, 18.2-4, 18.2-8, 18.2-8 S01, 18.2-9, 18.2-10, 18.2-12, 18.2-15, 18.2-16, 18.2-16 S01, 18.2-17, 18.2-17 S01, 18.2-18, 18.3-20	Various
46.		RAI 18.2-10S02, 18.2-18, 18.2-20 calls for submittal of new revision to the document	RAI 18.2-10S02, 18.2-18, 18.2-20
47.		RAI 18.6-1 refers to the staffing table. This was revised, but then removed in preference to referencing the S&Q plan for Table 1 included in that plan.	18.6-1
48.		RAI 18.12-6 refers to changes to material contained in the deleted section 4 content (see change #s 34-37).	18.12-6

## NEDO 33276 Changes From Revision 1 to Revision 2

Item	Location in NEDO (Section #, Paragraph)	Description of Change	RAI #
1.	General	Corrected typos, extra spaces, formatting, and syntax as needed.	N/A
2.	General	<p>To reflect the level of detail required for an Implementation plan, both the text and document organization of NEDO-33276 were revised.</p> <p>To increase consistency, decrease redundancy, and create a document more closely aligned with the structure of NUREG-0711, rev. 2, the document was reorganized.</p> <p>This complete restructuring and substantial rewriting of the NEDO-33276 resulted in revision bars adjacent to all text in the body of the document. Because reviewers would not be assisted by a revision bar that spans the entire document, no revision bars are included.</p>	18.11-36
3.	Section 1	Section 1 was rewritten to present an accurate representation of the new content of NEDO-33276.	N/A
4.	Section 2	Section 2 references were updated to reflect new document content.	N/A
5.	Section 3.1	To reflect the level of detail required for an Implementation plan, Section 3.1, HSI Inventory and Characterization, was separated from Task Support Verification and rewritten with increased detail and elaborated methodology.	N/A
6.	Section 3.2	To reflect the level of detail required for an Implementation plan, Section 3.2, Task Support Verification, was separated from HSI Inventory and Characterization and rewritten with increased detail and elaborated methodology.	N/A
7.	Section 3.3	To reflect the level of detail required for an Implementation plan, Section 3.3, HFE Design Verification was rewritten to separate out activities belonging to Integrated System Validation and to provide increased detail and elaborated methodology.	N/A
8.	Section 4	To reflect the level of detail required for an Implementation plan, Section 4, Operational Conditions Sampling, was rewritten to provide increased detail and elaborated methodology.	N/A

## NEDO 33276 Changes From Revision 1 to Revision 2

Item	Location in NEDO (Section #, Paragraph)	Description of Change	RAI #
9.	Section 5	<p>To reflect the level of detail required for an Implementation plan, Section 5, Integrated System Validation, was rewritten to provide increased detail and elaborated methodology.</p> <p>Areas of revision include: testbeds, participant selection, scenario definition, performance measures, acceptance criteria, test design, test procedures, and data analysis.</p>	N/A
10.	Section 6	<p>To reflect the level of detail required for an Implementation plan, Section 6, HED Identification and Resolution, was rewritten to provide increased detail and elaborated methodology.</p>	N/A
11.	Section 7	<p>Section 7 was rewritten to conform to the ITAAC and DCD.</p>	N/A
12.	Figures 2, 3, and 4	<p>Figures 2, 3, and 4 were changed to reflect revised content.</p>	N/A

**NEDO 33276 Changes From Revision 1 to Revision 2**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
13.	<p>Section 2</p> <p>Sections 3.3.4.1, 4.4.1.2, 4.4.1.3, and 5.4.1.5</p> <p>Section 2</p> <p>Section 1.2</p>	<p>RAI 18.11-1 (A) expresses concern regarding the relationship of NEDO-33276 to GEEN EOPs. Section 2 no longer states that GEEN EOPs supplemented by the V&amp;V plan, thus the concern expressed in this RAI section no longer applies.</p> <p>RAI 18.11-1(B) expresses concern regarding the criteria used to select the LCSs included in HFE V&amp;V. Respectively, sections 3.3.4.1, 4.4.1.2, 4.4.1.3, and 5.4.1.5 state that risk significant LCSs are included in the scope of HFE design verification, operational conditions sampling, and integrated system validation.</p> <p>RAI 18.11-1(C) expresses concern regarding applicable documents that are old and do not reflect current control and display technology, such as EPRI and NUREG CR-4227. During the revision of the V&amp;V plan, content was revised, and the references updated accordingly. As a result, these reference documents were removed from the document during revision, thus the concern is no longer applicable.</p> <p>RAI 18.11-1(D) expresses concern regarding which facilities are included within the scope of V&amp;V. Section 1.2 states that the facilities included within the scope of V&amp;V are the main control room, the remote shutdown system, and risk significant local control stations.</p> <p>Section 1.2 also indicates that HSI data and screens used for monitoring plant parameters in the emergency response facilities and the Emergency Operations Facility are within the scope of the V&amp;V plan. The COL applicant performs the integrated V&amp;V of the TSC and EOF because these facilities are not part of the ESBWR standard design.</p>	18.11-1
14.	General; Section 4	<p>RAI 18.11-2 expresses concern regarding subsections that do not seem to be related to operational conditions sampling.</p> <p>To reflect the level of detail required for an Implementation plan, both the text and document organization of NEDO-33276 were revised. Section 4, operational conditions sampling, no longer contains the subsections indicated in the RAI, and the concern is no longer applicable.</p>	18.11-2

## NEDO 33276 Changes From Revision 1 to Revision 2

Item	Location in NEDO (Section #, Paragraph)	Description of Change	RAI #
15.	Sections 4, 4.4.1, and 4.4.1.1 – 4.4.1.4	<p>To reflect the level of detail required for an Implementation plan, both the text and document organization of NEDO-33276 were revised.</p> <p>Sections 4, 4.4.1, and 4.4.1.1 – 4.4.1.4 contain the new content indicated in RAI response 18.11-3 S01.</p> <p>RAI 18.11-3 expresses concern regarding the sampling dimensions and methodology used to select operation conditions. These concerns have been addressed in Sections 4, 4.4.1, and 4.4.1.1 – 4.4.1.4, in which the sampling methodology used to select operational conditions is described.</p>	18.11-3 & 18.11-3 S01
16.	Sections 4.4.2, 4.4.2.1 – 4.4.2.7, and 4.4.3	<p>To reflect the level of detail required for an Implementation plan, both the text and document organization of NEDO-33276 were revised.</p> <p>Sections 4.4.2, 4.4.2.1 – 4.4.2.7, and 4.4.3 contain the new content indicated in RAI response 18.11-4 S01.</p> <p>RAI 18.11-4 expresses concern regarding the identification of scenario and the methodology for scenario development. The concerns have been addressed in Sections 4.4.2, 4.4.2.1 – 4.4.2.7, and 4.4.3, in which the methodology to develop scenarios is described.</p>	18.11-4 & 18.11-4 S01
17.	Section 3.2.1	<p>RAI 18.11-5 expresses concern regarding the scope of task support verification.</p> <p>This concern is addressed in section 3.2.1. The scope of the task support verification applies to all of the ESBWR HSIs associated with the personnel tasks selected based upon the operational condition sampling process, and associated HSI characteristics and tasks analyzed in task analysis.</p>	18.11-5
18.	Section 3.2	<p>RAI 18.11-6 expresses concern regarding subsections that do not seem to be related to task support verification.</p> <p>To reflect the level of detail required for an Implementation plan, both the text and document organization of NEDO-33276 were revised. Section 3.2, task support verification, no longer contains the subsections indicated in the RAI, and the concern is no longer applicable</p>	18.11-6

## NEDO 33276 Changes From Revision 1 to Revision 2

Item	Location in NEDO (Section #, Paragraph)	Description of Change	RAI #
19.	Sections 3.2.4.1 and 3.2.4.1.1 – 3.2.4.1.3	<p>To reflect the level of detail required for an Implementation plan, both the text and document organization of NEDO-33276 were revised.</p> <p>Sections 3.2.4.1 and 3.2.4.1.1 – 3.2.4.1.3 contain the new content indicated in RAI response 18.11-7 S01.</p> <p>RAI 18.11-7 expresses concern regarding the criteria to be used in task support verification. The concerns have been addressed in Sections 3.2.4.1 and 3.2.4.1.1 – 3.2.4.1.3, in which task support verification criteria are described.</p>	18.11-7 & 18.11-7 S01
20.	Section 3.2.4.2	<p>RAI 18.11-8 &amp; 18.11-8 S01 express concerns regarding the process used to perform task support verification. Section 3.2.4.2 contains new content regarding task support verification methodology that addresses these concerns.</p>	18.11-8 & 18.11-8 S01
21.	Sections 3.2.5 and 6.5	<p>RAI 18.11-9 expresses concern regarding the HFE issue entry criteria for task support verification and what information is logged into the HFEITS. Section 3.2.5 delineates the HFE issue entry criteria for task support verification. Section 6.5 specifies the information to be included in the HFEITS.</p>	18.11-9
22.	Section 3.3	<p>RAI 18.11-10 expresses concern regarding the presence of personnel task requirements in HFE design verification. Section 3.3 was revised, and states that the objective of HFE design verification is to verify that the implemented HSI component design and environment conform to the HFE guidelines, standards, and principles reflected in the ESBWR HFE style guide. Thus the concern has been addressed.</p> <p>The additional concerns expressed in RAI 18.11-10 regarding “HFE analyses” have been addressed or are no longer applicable due to the revision of Section 3.3.</p>	18.11-10
23.	Section 3.3	<p>Due to content changes resulting from the revision to Section 3.3, the concerns expressed in RAI 18.11-10 are not applicable.</p>	18.11-11

## NEDO 33276 Changes From Revision 1 to Revision 2

Item	Location in NEDO (Section #, Paragraph)	Description of Change	RAI #
24.	Section 3.3.4.2	RAI 18.11-10 expresses concern regarding which testbeds are used using HFE design verification. Section 3.3.4.2 discusses the methods used to perform HFE design verification. For each HSI feature, requirements are compared to the characteristics of the installed HSI using high fidelity part-task and full scope simulators	18.11-12
25.	Sections 3.3.4, 3.3.4.1, and 3.3.4.2  Section 5.2	<p>Sections 3.3.4, 3.3.4.1, and 3.3.4.2 contain new content that addresses the concerns regarding HFE design verification methodology indicated in RAI 18.11-13 and RAI 18.11-13 S01.</p> <p>RAIs 18.11-13 (A) and 18.11-13 S01 (A) express concerns regarding HFE design verification for panel anthropometrics. Section 3.3.4.2 (Anthropometrics) addresses this issue.</p> <p>RAI 18.11-13 (B) expresses concern regarding design verification for operating procedures. To reflect the level of detail required for an Implementation plan, Section 3.3, HFE Design Verification was rewritten to separate out activities belonging to Integrated System Validation. As indicated in Section 5.2, the adequacy of procedures within the integrated system is one of the objectives of validation. Thus, the concern in RAI 18.11-13 (B) is no longer applicable.</p> <p>RAIs 18.11-13 (C) and 18.11-13 S01 (C) express concerns regarding HFE design verification of HSI components. Section 3.3.4.2 (HSI Components) addresses this issue.</p> <p>RAI 18.11-13 (D) expresses concern regarding HFE design verification of HSI components. Section 3.3.4.2 (Integrated HSI and Local Environment) addresses this issue.</p>	18.11-13 & 18.11-13 S01
26.	Sections 3.3.5 and 6.5	<p>RAI 18.11-14 expresses concern regarding the documentation of HFE design verification results, HFE issue entry criteria for task support verification, and what information is logged into the HFEITS. .</p> <p>Section 3.3.5 delineates the outputs for HFE design verification. Section 6.5 specifies the information to be included in the HFEITS.</p>	18.11-14

## NEDO 33276 Changes From Revision 1 to Revision 2

Item	Location in NEDO (Section #, Paragraph)	Description of Change	RAI #
27.	<p>Sections 5.3, 5.4.4, and 5.5.</p> <p>Sections 5.4.1.1, 5.4.1.2, 5.4.1.3, 5.4.2.3, and 5.4.3.13</p>	<p>RAI 18.11-15 expresses concern regarding the relationship between validation and training described in the V&amp;V plan.</p> <p>Training represents one of the areas to be validated during integrated system validation. This intent is indicated in Sections 5.3, 5.4.4, and 5.5.</p> <p>In addition, the relationship of training with V&amp;V is also discussed in Sections 5.4.1.1, 5.4.1.2, 5.4.1.3, 5.4.2.3, and 5.4.3.13.</p>	18.11-15
28.	Sections 5.4.1 and 5.4.1.1-5.4.1.3	RAI 18.11-16 expresses concern regarding when simulators are available relative to HFE activities. Sections 5.4.1 and 5.4.1.1- 5.4.1.3 discuss simulators and how they are used in V&V.	18.11-16
29.	Sections 5.4.1 and 5.4.1.1-5.4.1.3	RAI 18.11-17 expresses concern regarding whether the FSS will be ANSI/ANS-3.5 compatible. Sections 5.4.1 and 5.4.1.1- 5.4.1.3 discuss simulators and their attributes and fidelity.	18.11-17
30.	Sections 5, 5.2, and 5.3	<p>RAI 18.11-18 expresses concern regarding the role of ESBWR procedures in integrated system validation testing.</p> <p>Section 5 contains information regarding the role of procedures in integrated system validation incorporated throughout.</p> <p>As indicated in Section 5.2, the adequacy of procedures within the integrated system is one of the objectives of integrated system validation testing. Section 5.3 also indicates the role that procedures play as an input to integrated system validation.</p>	18.11-18

## NEDO 33276 Changes From Revision 1 to Revision 2

Item	Location in NEDO (Section #, Paragraph)	Description of Change	RAI #
31.	Sections 5.4.1 and 5.4.1.1–5.4.1.5, 5.4.3.6, and General.	<p>To reflect the level of detail required for an Implementation plan, both the text and document organization of NEDO-33276 were revised.</p> <p>Sections 5.4.1.1– 5.4.1.5 contain the new content indicated in RAI response 18.11-19 S01. In addition, the wording and content throughout the document was corrected to achieve consistency with these definitions.</p> <p>Additional content in Section 5.4.1 addresses validation testbed criteria.</p> <p>RAI 18.11-19 expresses concern regarding how actions outside the control room are included in validation scenarios and how these actions are modeled. These concerns have been addressed in Sections 5.4.1.4 and 5.4.1.5, which describes how the RSS and risk significant LCSs are included in validation. Section 5.4.3.6 also discusses how remote actions are modeled during simulation.</p>	18.11-19 & 18.11-19 S01
32.	Section 5.4.1	<p>RAI 18.11-20 expresses concern regarding how testbeds are verified before validation tests are conducted.</p> <p>This concern is addressed in Section 5.4.1 (Testbed Verification)</p>	18.11-20
33.	Sections 5.4.2 and 5.4.2.1 – 5.4.2.3	<p>To reflect the level of detail required for an Implementation plan, both the text and document organization of NEDO-33276 were revised.</p> <p>Sections 5.4.2 and 5.4.2.1 – 5.4.2.3 contain the new content indicated in RAI response 18.11-21 S01.</p> <p>RAI 18.11-21 expresses concern regarding the types of personnel who act as crews during validation tests and how these individuals are sampled. These concerns have been addressed in Sections 5.4.2 and 5.4.2.1 – 5.4.2.3.</p>	18.11-21 & 18.11-21 S01
34.	Section 5.4.2.2	Added statement that a minimum number of three crews are used.	18.11-21 S02

## NEDO 33276 Changes From Revision 1 to Revision 2

Item	Location in NEDO (Section #, Paragraph)	Description of Change	RAI #
35.	Sections 5.4.3, 5.4.3.1 – 5.4.3.13, and 5.4.5.2 (6)	<p>To reflect the level of detail required for an Implementation plan, both the text and document organization of NEDO-33276 were revised.</p> <p>Sections 5.4.3 and 5.4.3.1 – 5.4.3.13 contain the new content indicated in RAI response 18.11-22 S01. Information regarding what, when and how data are to be collected and stored was added to Section 5.4.5.2 (6).</p> <p>RAI 18.11-22 expresses concern regarding validation scenarios and how they are defined. These concerns have been addressed in Sections 5.4.3 and 5.4.3.1 – 5.4.3.13, in which information regarding scenario definition and documentation is provided.</p>	18.11-22 & 18.11-22 S01
36.	<p>Section 5.4.4</p> <p>Section 5.4.4.1 and 5.4.4.2</p> <p>Section 5.4.4.3</p> <p>Section 5.4.4.5</p> <p>Section 5.4.4.6</p> <p>Section 5.4.4.4</p> <p>Section 5.4.4.7</p>	<p>To reflect the level of detail required for an Implementation plan, both the text and document organization of NEDO-33276 were revised.</p> <p>Section 5.4.4 contains the new content indicated in RAI responses 18.11-23 S01, 18.11-24 S01, 18.11-26 S01.</p> <p>RAI 18.11-23 expresses concern regarding the measurement characteristics of performance measures. These concerns have been addressed throughout Section 5.4.4, in which information regarding the measurement characteristics for each performance measure are described.</p> <p>Plant/System level performance measure measurement characteristics are located in Sections 5.4.4.1 and 5.4.4.2.</p> <p>Personnel task performance measure measurement characteristics are located in Section 5.4.4.3.</p> <p>Situation awareness performance measure measurement characteristics are located in Section 5.4.4.5.</p> <p>Operator workload performance measure measurement characteristics are located in Section 5.4.4.6.</p> <p>Crew communication and coordination performance measure measurement characteristics are located in Section 5.4.4.4.</p> <p>Anthropometric performance measure acceptance criteria are located in Section 5.4.4.7.</p>	18.11-23 & 18.11-23 S01



**NEDO 33276 Changes From Revision 1 to Revision 2**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
38.	<p>Section 5.4.4</p> <p>Section 5.2</p> <p>Section 5.2</p> <p>Section 5.2</p>	<p>RAI 18.11-25 (A) expresses concern regarding automation, as it applies to performance measures. In response to RAIs 18.11-23 S01, 18.11-24 S01, 18.11-26 S01, section 5.4.4 was restructured and contains new content regarding performance measures. Because the content on which this question was based is not in the revised V&amp;V plan, this question is no longer applicable. The adequacy of automation is one of the objectives of validation, as can be seen in Section 5.2.</p> <p>RAI 18.11-25 (B) and RAI 18.11-21 S01 (A) express concerns regarding procedures, as they apply to performance measures. In response to RAIs 18.11-23 S01, 18.11-24 S01, 18.11-26 S01, section 5.4.4 was restructured and contains new content regarding performance measures. Because the content on which this question was based is not in the revised V&amp;V plan, this question is no longer applicable. The adequacy of procedures is one of the objectives of validation, as can be seen in Section 5.2.</p> <p>RAI 18.11-25 (C), RAI 18.11-21 S01 (B), and RAI 18.11-21 S02 express concerns regarding displays, as they apply to performance measures. In response to RAIs 18.11-23 S01, 18.11-24 S01, 18.11-26 S01, section 5.4.4 was restructured and contains new content regarding performance measures. Because the content on which this question was based is not in the revised V&amp;V plan, this question is no longer applicable. The adequacy of displays is one of the objectives of validation, as can be seen in Section 5.2.</p>	18.11-25, 18.11-25 S01, & 18.11-25 S02



**NEDO 33276 Changes From Revision 1 to Revision 2**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
41.	Section 5.4.5.1	RAI 18.11-28 and RAI 18.11-28 S01 express concerns regarding subjecting a crew to the same scenario twice. These concerns have been addressed in Section 5.4.5.1, in which scenario assignment to crews is discussed, states that presentation of the same scenario to the same crew for a second time may not occur in the context of integrated system validation.	18.11-28 & 18.11-28 S01
42.	Section 5.4.7	<p>To reflect the level of detail required for an Implementation plan, both the text and document organization of NEDO-33276 were revised.</p> <p>Section 5.4.7 contains the new content indicated in RAI response 18.11-29 S01.</p> <p>RAI 18.11-29 expresses concerns regarding data analysis and interpretation. These concerns have been addressed in Section 5.4.7, in which data analysis and interpretation methodology is discussed. This includes the methods used to analyze data and assess performance criteria, to identify HEDs, to establish consistency across measures, and to verify data analysis for correctness.</p>	18.11-29 & 18.11-29 S01
43.	Sections 5.4.7 and 5.5	<p>RAI 18.11-30 expresses concern regarding the evaluation and documentation of conclusions from integrated system validation, the basis for determining that performance of the integrated system was acceptable, and how potential limitations to the validation are assessed.</p> <p>These concerns are addressed in Sections 5.4.7 and 5.5, discuss data analysis and interpretation, integrated system validation out put, and documentation.</p>	18.11-30
44.	General; Section 6	RAI 18.11-31 expresses concern regarding human factors issue resolution. The change in wording from “issues” to “HEDs” was maintained during the revision, both in Section 6, and throughout the document. Thus, the concern has been addressed.	18.11-31

**NEDO 33276 Changes From Revision 1 to Revision 2**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
45.	<p>Section 6 and Figure 4</p> <p>Section 6.4.3</p> <p>Figure 4 and Section 6.4.3</p> <p>Section 6.4.2</p> <p>Figure 4</p> <p>Figure 4</p> <p>Section 6 and Figure 4</p>	<p>To reflect the level of detail required for an Implementation plan, both the text and document organization of NEDO-33276 were revised.</p> <p>RAI 18.11-32(A) expresses concern regarding the ranking and prioritizing of HEDs. This is described in Section 6.4.3.</p> <p>RAI 18.11-32(B) expresses concern regarding Figure 3. This was replaced by the new Figure 4, in which issues are classified by priority. Priority rankings are detailed in Section 6.4.3.</p> <p>RAI 18.11-32 S01 (A) and RAI 18.11-32 S02 (A) expresses concern regarding the provision for justifying discrepancies. This is described in Section 6.4.2.</p> <p>RAI 18.11-32 S01 (B) and RAI 18.11-32 S02 (B) expresses concern regarding a style guide requirements block in (old) Figure 4. This was replaced by the new Figure 4, which represents a methodology for dealing with all types of HEDs.</p> <p>RAI 18.11-32 S01 (C) expresses concern regarding the restrictiveness of final solutions specified in (old) Figure 4. This was replaced by the new Figure 4, in which HED solutions are less rigid.</p> <p>The additional concerns expressed in RAI 18.11-32 S02 have been addressed by the new Figure 4 and the revision to Section 6.</p>	<p>18.11-32, 18.11-32 S01, &amp; 18.11-32 S02</p>

## NEDO-33262 OER Rev 1 to Rev 2 Change Log

Item	Location	Description of Change	RAI
1	Various	Corrected typos, extra spaces, formatting, and syntax as needed.	
2	Page i	Procedure incorrectly referenced as NEDE below the Proprietary Information Notice page. The procedure name was corrected to read NEDO-33262, Revision 2.	
3	Sect 1 Paragraph 1	Grammatically corrected and split into two paragraphs for ease of reading and comprehension.	
4	Sect. 1.2 Paragraph 4	Statement changed to reflect the actual connection for input into the AOF process	
5	Section 1.2 Paragraph 6	Criteria for HFEITS entries is located in appendix A of NEDE 33217P MMIS-HFE implementation plan	
6	Sect 2.1	All applicable revision numbers need to be updated. Reference to NEDO 33181 deleted – not relevant to current document.	
7	Sect 3 Paragraph 3	NUREG/CR-6400 categories added to match the wording in the current DCD revision	
8	Sect 3 Paragraph 6	As developed from Table 3.1 of NUREG 0711... #4 was changed to read Human reliability analysis and #8 was changed to Training Development to match NUREG-0711.	
9	Section 3.2.2	Added Criteria from NUREG-0711 for clarification & consistency	
10	Section 3.2.3.2 Paragraph 2	Administrative procedure that defines the criteria for HFEITS entries is located in appendix A of NEDE 33217P MMIS-HFE implementation plan	
11	Section 3.2.3.4 Paragraph 1 & 2	Removed wording about classification that is not used in the Task Analysis Implementation Plan. The items are classified in accordance with their issues and this facilitates their disposition.	
12	Section 3.2.4	Section rewritten for clarity. Condensed two paragraphs into one.	
13	OLD Section 4.1.3.1 & Sect. 4.1.3.2	'OLD' Sections removed since these sections do not describe any part of the OE process plan. The existence and content of these parts are covered in NEDE 33217P section 3.2.3, Requirements for HFE process.). Subsequent sections were renumbered.	
14	NEW Section 4.1.3.1	Added the documentation reference in response to RAI 18.3-20. Criteria for HFEITS entries are located in appendix A of NEDE 33217P MMIS-HFE implementation plan. Text changed to reflect the fact that the OER and BRR do not create but rather identify issues.	18.3-20
15	Section 4.1.3.2 Paragraph 1-2	This section was renamed for the program. Deleted "as inputs to the plant design" since this input is only "as necessary".	
16	Section 5.1	This section completely changed to conform to the ITAAC and DCD Section 18.3 for this section. The Results Summary Report (RSR) needs to contain: <ul style="list-style-type: none"> <li>• The scope and conduct of the activity</li> <li>• The results of the activity</li> </ul>	
17	Section 5.2 –5.3	Sections deleted due to information not needed. HRA/PRA process information is duplicated in section 4.1.6 of NEDE 33217P. Duplicate information from NEDE 33217P section 3.1.4 and 4.1.11 also reside in the deleted information.	
18	Appendix A.2.2	Removed bullet not applicable to BWR.	

## NEDO 33219 Changes From Revision 1 to Revision 2

Item	Location in NEDO (Section #, Paragraph)	Description of Change	RAI #
1.	Various	Corrected typos, extra spaces, formatting, and syntax as needed.	
2.	Various	Changed "plant function" to "plant process function" where appropriate. Change was made to enhance document clarity.	
3.	Various	Changed mode of operation to configurations with regards to system "modes" of operation. Change was made to eliminate confusion over the use of modes in the context of system operation. Reactor modes and plant modes are still used in the document were appropriate.	
4.	1	Added statement to the end of this section identifying the Tables and Appendices as generic examples that may change during the design process.	
5.	1.1, 7 <sup>th</sup> bullet	Changed first part of bullet to read "Develop a functional structure that can be used to..." Instead of "Provide analysis method to..." to align with paragraph content and FRA process.	
6.	1.2, 5 <sup>th</sup> bullet	Added the text "configuration changes which lead to" to the bullet item. The change was made to clarify relationship between the system analysis and Human-System Interface requirements.	
7.	1.2, 2 <sup>nd</sup> Paragraph	Deleted "as a design input" with regards to gap analysis output. The change was made to remove the implication that all gap analysis outputs would be used as design input. As discussed in Section 3.3 and illustrated by Figure 6, design input is only one of several outcomes of the gap analysis.	
8.	1.3	Corrected acronyms and definitions in section 1.3	
9.	2.1	Updated list of supporting and supplemental documents. Changes included the deletion of NEDO 33181, EPI 20-15, and the ESBWR Design Specification for the Plant Automation System. These deleted references were not needed at the implementation plan level.	

**NEDO 33219 Changes From Revision 1 to Revision 2**

Item	Location in NEDO (Section #, Paragraph)	Description of Change	RAI #
10.	2.2	Updated reference information and removed date/revision association with the Composite Specification that is no longer referenced by this plan.	
11.	2.3	Added reference to 10CFR50 Appendix A	
12.	3.0 (5)	Deleted "COL (applicant/holder) owners' group" from this item. This change was made to correct that turnover of the Functional Requirements Analysis is only to the COL Applicants.	
13.	3.1; Figure 4	Added statement that includes input to Minimum Inventory HSI as scope item for the PFRA. This change was also made to Figure 4. Revised the last two sentences to align PFRA outputs with the correct phases of the analyses.	
14.	3.1.1	Removed bullets for "goals". Change was made to eliminate inconsistencies in the document. Goals are stated in Section 4.1.3.1.	
15.	3.1.2	Removed indications and controls as direct outputs of PFRA. Indications and controls that are a result of PFRA are specified through AOF and TA. Also, the last sentence was re-worded to correctly reflect that PFRA process is an input to AOF and TA. Previous wording limited the AOF and TA input scope to certain PFRA outputs.	
16.	3.2	Statement added to the end of the paragraph to clarify that SFRA is performed in phases along with the other elements of operational analysis.	
17.	3.2.2; 3.2.4	Removed "process control requirements" as and output of the SFRA. Control requirements that are a result of SFRA are specified through AOF and TA.	
18.	3.2.4, last paragraph	First sentence regarding the AOF process was revised to align with terminology utilized in the AOF implementation plan.	

**NEDO 33219 Changes From Revision 1 to Revision 2**

Item	Location in NEDO (Section #, Paragraph)	Description of Change	RAI #
19.	3.3	Removed indications and controls as direct outputs of PFRA. Indications and controls that are a result of PFRA are specified through AOF and TA.	
20.	3.3.1; Figure 3; Figure 4; Figure 6	Output of PFRA that is compared during SFGA changed from system (function) to process function. Change was made to eliminate inconsistencies within the document.	
21.	4.1.2	Changed the 3rd bullet to be "plant specific analysis" instead of "plant functions". Specific functions are not considered in the PFRA using the top down approach.	
22.	4.1.3.1; Figure 4	Combined "Operate Economically" and "Protect Economic Operation" into one goal to align the implementation plan with the current analysis structure.	
23.	New	Added new Section 4.1.3.2 "NPP Condition Identification" to align the implementation plan elements with the current analysis structure.	
24.	4.1.3.3	First and second sentence edited to correctly establish that the plant states are not needed to support the plant goal but are states that are applicable to the plant goal. Section was re-numbered as 4.1.3.3 due to changes associated with this implementation plan revision.	
25.	New	Added new Section 4.1.3.4 "Plant Sub Goal Identification" to clarify the process. This change was included in the responses to RAIs 18.4-1 and 18.4-7. Plan section number differs from section number included in RAI response due to changes associated with this implementation plan revision.	RAI 18.4-1 S02 and RAI 18.4-7 S02
26.	4.1.3.3	Replaced the content of Section 4.1.3.3 "Plant Function Identification" to provide additional clarification and detail. This change was included in the response to RAI 18.4-1. Section was re-numbered as 4.1.3.5 and differs from section number included in RAI response due to changes associated with this implementation plan revision.	RAI 18.4-1 S02

**NEDO 33219 Changes From Revision 1 to Revision 2**

Item	Location in NEDO (Section #, Paragraph)	Description of Change	RAI #
27.	4.1.3.5	Replaced the content of Section 4.1.3.5 "Critical Safety Function Identification" to provide additional clarification and detail. This change was included in the response to RAI 18.4-7. Section was re-numbered as 4.1.3.7 and differs from section number included in RAI response due to changes associated with this implementation plan revision.	RAI 18.4-7 S02
28.	4.1.3.6	Added amplifying detail regarding plant process functions. Removed statement regarding "similar methods". The statement regarding similar methods was no longer applicable with the changes made in response to RAI 18.4-7. Section was re-numbered as 4.1.3.8 due to changes associated with this implementation plan revision.	
29.	4.1.4, 4 <sup>th</sup> Bullet; Figure 4	Corrected examples presented as "procedure process outlines" to the procedures outlines to be produced by PFRA. Figure 4 was also revised to represent the correct outlines.	
30.	4.2, 1 <sup>st</sup> paragraph	Changed "performed by" to "is the responsibility of" the responsible engineer. Change was made to reflect that the responsible engineer does not necessarily perform analysis but the analysis requires this engineers direction and approval.	
31.	4.2.3.5, 2 <sup>nd</sup> paragraph 3 <sup>rd</sup> and 4 <sup>th</sup> bullet	Changed "design" to "economic" SFRA. This change was made to align the examples with the correct phase of the SFRA.	
32.	4.2.3.6, 2 <sup>nd</sup> paragraph	The description of support requirements was re-written in this paragraph to provide specific examples of these requirements.	
33.	4.2.3.7	Replaced "number and a letter, which in some cases is followed by another number" with "unique letter number combination" to provide a more accurate description of the alignment numbering convention.	

**NEDO 33219 Changes From Revision 1 to Revision 2**

Item	Location in NEDO (Section #, Paragraph)	Description of Change	RAI #
34.	4.2.4, 4 <sup>th</sup> and 5 <sup>th</sup> Bullets	Deleted these bullets as outputs of the SFRA. Operational and control requirements that are a result of SFRA are specified through AOF and TA.	
35.	4.3.3.1	Corrected title by removing "System". New title more accurately describes comparison performed during SFGA.	
36.	4.3.3.2	Sentence revised to more accurately describe linking process of SFGA.	
37.	4.3.4; 5.1	Added new Section 4.3.3.8 "Plant Function Operational Summary" to provide more detail on the information documented for each high-level function. The output of Section 4.3.3.8 was also added to Section 4.3.4 and Section 5.1. This change was included in the response to RAI 18.4-26.	RAI-18.4-26 S02
38.	4.3.4, 4 <sup>th</sup> Bullet	The bullet item was changed to correct the stated relationship between the SFGA and requirements for Human System Interface Design.	
39.	5.0	Section 5.0 "Results" was completely re-written to consolidate items that were previously part of DCD Tier 1 ITAAC Table 3.3 and DCD Tier 2 Chapter 18 results. The re-write was also to establish consistency between the implementation plans.	
40.	Figure 3	Removed "AOF" as an output of gap analyses. The correction was needed since this direct output relationship does not exist.	
41.	Figure 6	Removed "Remove from SFRA" from the Reconciliation Action section of the figure. Some SFRA functions will not be identified by the PFRA but are desired for other reasons beyond the PFRA and therefore will not necessarily be removed.	
42.	Appendix F	Deleted descriptions of different configurations. This level of detail was not appropriate for an implementation plan document.	

## NEDO 33220 Changes From Revision 1 to Revision 2

Item	Location in NEDO (Section #, Paragraph)	Description of Change	RAI #
1.	Various	Corrected typos, extra spaces, formatting, and syntax as needed.	
2.	Various	Replaced HRA Significance with HRA/PRA risk significance.	
3.	Cover page	Added "Implementation Plan" to the end of document title for consistency with other HFE LTRs.	
4.	1.2	Re-structured and added text to Section 1.2 for clarity and consistency.	
5.	1.3	Corrected acronyms and definitions in section 1.3	
6.	2.3, 2.5	RAI 18.4-2 – In response to this RAI written regarding outdated or non-applicable references, NUREG-0700 and the 1984 version of EPRI-NP-3659 were removed from the list of reference documents.	RAI 18.4-2
7.	3.1.2	Replaced COL owners group with Fleet-wide owners group.	
8.	3.1.2	First 2 bullets listing the ESBWR goals were revised to be consistent those stated in NEDO-33219, Revision 2.	
9.	3.1.4, 4.1.3, 4.1.3.1 items 2, 3, & 4, 4.1.3.2 items 1, 2, 3, 4, & 6	RAI 18.4-21 SO1 – In response to this RAI written regarding the use of Appendix A (which was not referenced anywhere in the document), the general process description and applicable process steps were revised to correctly reference and use Appendix A.	RAI 18.4-21 SO1
10.	3.1.4	The discussion regarding the treatment of "shared" functions was modified to remove the implication that analysts must break a function down into sub-functions during allocation.	
11.	3.1.3, 3.1.4, 4.1.3.1, 4.1.4	Changed table 1 to Figure 4 under "Shared" function. Table 1 was the wrong reference and has been deleted.	

## NEDO 33220 Changes From Revision 1 to Revision 2

Item	Location in NEDO (Section #, Paragraph)	Description of Change	RAI #
12.	4.1.3.1 items 2, 3, 4, & 6, 4.1.3.2 items 1, 2, 3, 4, 5, 6, 7, & 8	Changed the words used to describe the lists of information to be considered when making these process decisions during the allocation process from “criteria” to “technical bases”. This change provides some differentiation from the “criteria” presented in Appendix A. This differentiation is not intended to lessen applicability, use, or importance of the information but rather to allow clearer references during execution and documentation of the allocation process.	
13.	4.1.3.1 item 5	Deleted the words “do not” from this textual description of the “configuration change required” flow chart decision block. This better aligns the text with the flow chart and the example presented in this same paragraph.	
14.	4.1.4	Removed section addressing the sequencing of sub-functions. This is not an Output of the AOF process.	
15.	5.0	Section 5.0 "Results" was completely re-written to consolidate items that were previously part of DCD Tier 1 ITAAC Table 3.3 and DCD Tier 2 Chapter 18.4 results. The re-write was also to established consistency between the implementation plans.	
16.	Table 1	Table 1 “Shared Sub-functions” was deleted. During pilots of the AOF process, it was determined that Table 1, as a single source provided no benefit to the analysis. The actions represented by the table are addressed with every shared allocated step and assigned the most efficient and appropriate combination of human and/or machine performance, limitation, and backup as per Figure 4. The details of sequence conditions for initiation, control, monitoring, and termination criteria are addressed in Task Analysis with the TA-1 “Sequence Narrative” and TA-2 “Sequence Automatic Initiation for Shared or Machine Only Allocations” steps. Each sub-function step is allocated and analyzed in the same manner as any other function step, so there was no need to have a separate sub-function Table.	

## NEDO 33221 Changes From Revision 1 to Revision 2

Item	Location in NEDO (Section #, Paragraph)	Description of Change	RAI #
1.	Various	Corrected typos, extra spaces, formatting, and syntax as needed.	
2.	Section 3, fourth bullet	Replaced COL owners group with Fleet-wide owners group.	
3.	TOC 3.3, 4.3 Section 1.1, 1.2, 1.3, 2.3, 2.5, 3.3, 4.3, 5.1	RAI 18.5-27 SO2 – In response to this RAI requesting additional information regarding how minimum inventory will be identified and categorized, two new subsections, a new definition, and three new references were added. Additionally, several existing areas of the document had minimum inventory HSI requirements added.	RAI 18.5-27
4.	1.1	Removed the words “Provide analysis methods to” from beginning of sentence beside seventh bullet to be consistent with the format used for the other bullets. The meaning did not change.	
5.	1.2, second paragraph	Remove “component-level” from listing of functions that are analyzed. Listing separately implied that a separate component-level analysis would be performed. Components are analyzed as part of the system-level analyses.	
6.	1.2, third paragraph	Replaced plant “operating modes” with “conditions”. The use of “condition” more accurately describes the items in the bullet list that follows the statement.	
7.	1.2	RAI 18.5-19 SO1 – In response to this RAI additional specificity regarding the identification of risk important tasks, NEDO-33267, ESBWR HFE Human Reliability Implementation plan was added as the determining process.	RAI 18.5-19
8.	1.3	Corrected acronyms and definitions in section 1.3	
9.	3.1.4 and 3.2.4	References to Table 1 removed. There is no Table 1 in this document. It was located under the Shared description.	

### NEDO 33221 Changes From Revision 1 to Revision 2

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
10.	3.1.4 and 3.2.4, 4 <sup>th</sup> paragraph	Added "input to" to the sentence describing the relationship between task sequences and automation logic. Change was made to clarify the relationship between these two design elements.	
11.	4.1.3.5 and 4.2.3.5	Reworded these similar sentences and added detail for clarity	
12.	5.0	Section 5.0 "Results" was completely re-written to consolidate items that were previously part of DCD Tier 1 ITAAC Table 3.3 and DCD Tier 2 Chapter 18 results. The re-write was also to established consistency between the implementation plans.	

**NEDO 33266 Changes From Revision 1 to Revision 2**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
1.	Various	Corrected typos, extra spaces, formatting, and syntax as needed. This includes replacing some words with acronyms. This also includes the addition of LTRs full titles including the NEDO number.	
2.	Cover page	Changed “HFE” to “Human Factors Engineering” in the title and added “Implementation Plan” to the end of document title for consistency with other HFE LTRs.	
3.	Section 1, first paragraph; Section 4.2.1, first paragraph	Replaced references to “ABWR reference” plant with references to “predecessor BWR” plants to eliminate the implication that S&Q lessons learned from designs prior to the ABWR are not considered.	
4.	Section 1.2, first paragraph	Added accidents to the scope of conditions considered for Staffing and Qualifications.	
5.	Section 1.2, fifth paragraph; Section 3.1.3.1, bullet 5	Deleted the words “high level” preceding task analysis. The change was made to establish consistency in task analysis term usage.	
6.	Section 1.2, seventh paragraph	Deleted the words “design phase” from this sentence as they implied that only the “design phase” HFE would input to the topic being presented. The ESBWR HFE process will be conducted in three phases: design, detailed, and economic. Data from all three phases will influence S&Q determinations.	
7.	Section 1.2, seventh and eight paragraphs; Section 4.6.3.4 second and third paragraphs	Deleted these sentences as their content goes well beyond the scope of ESBWR HFE S&Q. Processes and regulations outside HFE will determine what staffing and qualifications are required for a given station’s security, engineering, fire response, and similar organizations. Other areas such as cafeteria and janitorial staffing are decisions that are also outside the ESBWR HFE process.	
8.	Section 1.2, eighth paragraph	Reworded these sentences (which previously referred to the information deleted in item 7 above) to present their content without referring to the deleted support staff material.	
9.	Section 1.3	Updated Definitions and Acronyms. This includes the deletion of definitions that are not applicable and the addition of applicable definitions and acronyms.	

**NEDO 33266 Changes From Revision 1 to Revision 2**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
10.	Section 2	Corrected reference documents including title corrections, revision corrections, and deletion of documents that were not applicable to the plan	
11.	Section 2.5	Removed the statement “Reference documents that have been removed may be re-added to the next revision, as they become available to the HFE design team.” This statement is being removed because it implies there are documents we need but are not available.	
12.	Section 3.1.2	Sentence modified to extend goals of the shift staff size evaluation to determine if the crew size is sufficient to “manage design basis and beyond design basis accident sequences as modeled in the PRA”. Original sentence limited the evaluation to “necessary crew to accomplish risk-important human actions”.	
13.	Section 3.1.4.1, first paragraph	Replaced “high risk Human Actions (HAs)” with “actions that are classified as risk-important HAs”. Change was made to correct terminology for consistency within the plan and consistency with other HFE implementation plans.	
14.	Section 4.2.1, second paragraph; 4.3.2.1	Replaced “reference” to “predecessor” in regards to the ABWR plant’s relationship with the ESBWR. The term predecessor more accurately describes the relationship between the two designs. The ESBWR is also based on other design such as the SBWR.	
15.	Section 4.3.2	Deleted NRC and Industry reports. This is not an input to the deterministic consideration for S&Q.	
16.	Section 4.4.2	Added “Design improvement / feedback on ESBWR specifications provides feedback into probabilistic evaluation.” To more accurately reflect the inputs during phase 3.	

**NEDO 33266 Changes From Revision 1 to Revision 2**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
17.	Section 4.5.2.2 and Table 2	Revised section 4.5.2.2 and table 2 to clarify the actions performed during the qualitative assessment. Reaffirmed the intent to evaluate staff workload and provide a hierarchical ranking process whereby lower priority tasks can be assigned to plant staff other than control room personnel (if needed). Changed the section title to be "Qualitative assessment of manual tasks" to more accurately reflect the content of the section. Removed the implication that the ESBWR project would reuse previous task analysis assessments for some tasks.	
18.	Section 4.5.2.3, last sentence	Removed implication that PRA training and qualification requirements will be determined in the PRA and instead refer the training implementation plan NEDO-33275	
19.	Section 4.6.3.2, first bullet	Removed statement that concurrent implementation of more than one procedure by a crew member will be avoided as in some instances (EOPs for example) operators are required to implement more than one procedure concurrently.	
20.	Section 4.6.3.4, first paragraph	Deleted the reference to Figure 1. This figure is not specific to this section. Text "As shown in Figure 2, adequacy of the recommended S&Qs will be systematically checked during procedure development and training programs" was re-located to the first paragraph with changes made from change 7 above. This is the appropriate figure for this section.	
21.	Section 5.0	Section 5.0 "Results" was completely re-written to consolidate items that were previously part of DCD Tier 1 ITAAC Table 3.3 and DCD Tier 2 Chapter 18.4 results. The re-write was also to establish consistency between the implementation plans.	

**NEDO –33267 Changes From Revision 2 to Revision 3**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
1	00.00.00	Notice updated to GEH LTR writers guide standard 012808.	
2	00.00.00	Many editorial clarifications provided to enhance readability with no technical impact. For example, improved process description of Figure 1.	
3	00.00.00	Update the cover page (e.g., match the eDRF number to storage file)	
4	01.00.00	Match the DCD 18.7 scope objectives in the introduction to the LTR.	DCD 18.7.1; RAI 18.7-7 S03 18.7-8 S03
5	01.00.00	Use of LRF as a measure of risk to match Chapter 19 part of RAI 18.7-7 S02. 02.	RAI 18.7-7 S02
6	01.01.00	Clarify the e.g., list by adding additional scope examples.	
7	01.03.01	“Action task” changed to “implementation task” to clarify usage in HRA models.	
8	01.03.01	RAI 18.7 clarification of the LTR by using a consistent definition for risk important human action through out document. (This terms applies to an action or HI after evaluation by the HFE team and TA and quantification in the PRA)	RAI 18.7-9 S03, and RAI 18.7-8 S03
9	01.03.01	Clarify definitions by removing the term “Standard Interface” which is no longer used in the HRA LTR document.	
10	01.03.01	RAI 18.7 clarification by adding a definition for the HI to show when the basic event comes from the PRA and may include different boundary conditions from the TA.	RAI 18.7-9 S03, and RAI 18.7-8 S03
11	01.03.01	Table 19.1-3, Importance Analysis Results, is not discussed or explained in the text of Ch. 19. Col. 2 of the Table gives the basis for inclusion of items in the Table as RAW, FV, and CCF, but does not list values or selection criteria. Rev. 2 of Plan gives acceptance criteria as FV greater than 0.1 and RAW of 2.0 for both CDF and LERF. However, these criteria are not specifically linked to the RI HAs. This should be clarified. Added definition for LRF to match Chapter 19 use of term since Large early releases are highly unlikely in ESBWR and address how importance measures will be used.	RAI 18.7-7 S02
12	01.03.01	Clarify definition of HSI by matching names of operating modes to the names used in the tech specs.	
13	01.03.01	Update the definition of reactor safety to latest version of the ANS statement.	
14	02.01.01	Replace supplemental with supporting	Editorial clarification
15	02.02.00	References updated to match writer’s guide requirements	
16	03.01.00	Clarify definitions of HA and HI for more precise response to RAI 18.7-7 S03, human interactions used for PRA generated results and human action for TA results. This clarification is applied through out LTR as edits	RAI 18.7-7 S03
17	03.01.00	Clarification to match the sentences using accident to the definitions of accident situations, accident class and accident scenario.	
18	03.02.01	Global changes to verify the correct use of HI and HA throughout the document.	RAI 18.7-7 S03
19	03.02.01	Clarify the use of LRF as large release frequency rather than fraction (in acronyms also).	
20	03.02.01	Clarify that the PRA use of risk importance measures is for different purposes than just the ranking of HIs.	RAI 18.7-9 S03, and RAI 18.7-8 S03
21	03.02.01	Clarify that the HRA uses special thresholds to classify actions as risk significant, and that we try to keep the risk measures as low as practical.	RAI 18.7-9 S03, and RAI 18.7-8 S03
22	03.02.01	Clarify the process description by separating goal setting from process issues.	RAI 18.7-9 S03, and RAI 18.7-8 S03
23	03.02.01	Clarify the process steps to separate the identification and evaluation steps.	RAI 18.7-9 S03, and RAI 18.7-8 S03

Item	Location in NEDO (Section #, Paragraph)	Description of Change	RAI #
24	03.02.01	Clarify the process steps by separating goal setting from process issues and changing and to or to verify that the either case produces a risk important human action.	RAI 18.7-9 S03, and RAI 18.7-8 S03
25	03.02.01	Clarify what is done if the HI cannot be lowered to below the threshold. Clarify that either the RAW of the FV importance measure can produce a risk important HA classification.	RAI 18.7-9 S03, and RAI 18.7-8 S03
26	03.02.01	Clarify that the particular importance measures to be used and the acceptance criteria (or cutoff values), for determining which human actions (HAs) are risk important, match the risk importance measures used in Chapter 19 and the way the measures are processed.	RAI 18.7-8 S02
27	03.02.01	Revised to provide the IMs and the criteria to be used for determining the risk important HAs. Rev. 2 of the Plan (33267) cites a RAW value of > 2.0 and a FV of > 0.1 in Section 3.2.1. Revised to clarify type of risk measure also use the term human interaction (HI) to match NRC questions in RAIs 18.7-7, -8 and -9 and clarify difference between PRA use and Task analysis of a human action.	RAI 18.7-8 S02
28	03.02.01	Revise text to clarify and commit to using all PRA analyses in determining the risk important HAs. Revised text commits to the use of all types of PRA analysis provided by the PRA team.	RAI 18.7-9 S03
29	03.02.01	Revised paragraph clarify how the PRA and the HFE uses quantitative goals.	RAI18.7-7 S02
30	03.02.02	Clarified use of the term "error forcing context" through out the LTR to address information in recent HRA application NUREG reports.	
31	03.02.03	Revised for consistency with other sections addressing RAIs.	RAI 18.7-9 S03, and RAI 18.7-8 S03
32	04.01.00	Clarified how all portions of the PRA will be used to compute the actual list of R-I HAs. Added summary to clarify the application of qualitative criteria and quantitative values in the context of risk importance measures of human interactions with the HSI interface. Provided details of the process for using quantitative risk measures and qualitative criteria with links to other HFE processes.	RAI 18.7-9 S03, and RAI 18.7-8 S02
33	04.01.02	Clarified how the criteria for selection of the R-I HAs are addressed in the HFE Program. Revised section describes the specific response by listing the specific quantitative criteria to address HI risk importance, and the qualitative criteria used to justify a HI as feasible.	RAI 18.7-9 S03, RAI 18.7-8 S02
34	04.03.01	Clarified use of the term "accident class".	
35	04.03.01	Clarified use of the term "at power" by changing sentence to match the definition.	
36	04.03.01	Incorporated changes to address editorial clarifications and typos.	
37	04.03.04	Incorporated changes to address editorial clarifications and typos.	
38	04.04.01	Clarified the use of error forcing context – It is used whenever a normal operating situation is modified externally to increase the potential for an error.	
39	04.04.02	Incorporated changes to address editorial clarifications and typos.	
40	04.04.02	Clarified the use of "failure mechanism" definition in the LTR.	
41	04.04.03	Clarified the use of "human error recovery" definition in the LTR.	
42	04.04.03	Clarify section by adding a title to each paragraph.	
43	04.05.00	Moved content from the 5.3 to address content of the documentation for HIs that are potentially risk significant	
44	04.06.00	Clarified text to address use of error forcing context in NUREG/CRs 4903, and 4969.	
45	05.01.00	Transferred to HRA LTR: Requirement for including in the summary report The scope of the HRA in the summary report	Transfer HRA ITACC item a to LTR
46	05.01.00	Transferred to HRA LTR: Requirement for including in the summary report. Description of the methodology and implementation of the HRA activity.	Transfer HRA ITACC item b to LTR
47	05.01.00	Transferred to HRA LTR: Requirement for including in the summary report Risk important human actions and how these are addressed in the HF design process.	Transfer HRA ITACC item c1 to LTR
48	05.01.00	Transferred to HRA LTR: Requirement for including in the summary report Conclude that the activity was performed in accordance with implementation plans	Transfer HRA ITACC item c2 to LTR
49	05.01.00	Transferred to HRA LTR: The scope of the HRA.	ITACC HRA item a rev 3

Item	Location in NEDO (Section #, Paragraph)	Description of Change	RAI #
50	05.01.00	Transferred to HRA LTR: Describe the methodology and implementation of the HRA activity.	ITACC HRA item c1 rev 3
51	05.01.00	Transferred to HRA LTR: Risk important human actions and how these are addressed in the HF design process.	ITACC HRA item b rev 3
52	05.01.00	Transferred to HRA LTR: Conclude that the activity was performed in accordance with implementation plans	ITACC HRA item c2 rev 3
53	Figure 1	Title change to "HFE Implementation Process" for consistency with other LTRs	
54	0A.01.00	Incorporated changes to address editorial clarifications and typos.	
55	0A.01.01	Clarify the relationship between the goal for the ESBWR HRA and the process requirements in PRA standards.	
56	0A.01.02	Editorial Clarification of HRA model levels and number of models.	
57	0A.01.02	Clarified text to address use of error forcing context in NUREG/CRs 4903, and 4969. The development of the PSF values can be supported through the use of an error forcing context.	
58	0A.01.02	Editorial clarification by adding reference to ASME-SA-2002.	
59	0A.01.02	Editorial improvements to description of equations that use various forms of P (e.g., P1+2 and P1A and P1B). Each use is defined for the equations where they are used. The P with subscripts is developed from the top down.	
60	0A.04.01	Simplified the long footnote for clarity	
61	0A.04.04	The equation in section A.4.4 was clarified by including an Algebraic version of the equation.	

**NEDO 33268 Changes From Revision 2 to Revision 3**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
1.	General	Typo's, Spelling error and grammatical corrections throughout document modified and corrected	N/A
2.	General	<p>All RAIs included in MFN 06-443 that were written against 18.8 were reviewed for inclusion in the document. Where applicable, the LTR has been modified to address omissions and/or errors in the way the RAI edits were made.</p> <p>Included all RAIs identified in the most recent batch from the NRC and have included response edits as needed.</p>	
3.	General	Deleted Tables 1, 2, and 3; and Figures 3, 4, 5, and 6 as well as references to them throughout document.	18.8-41 S02 18.8-33
4.	General	<p>Replace "risk significant LCSs" with "LCSs with a safety related function or as defined by TA" throughout document.</p> <p>For consistency with the DCD and other LTRs language.</p>	N/A
5.	General	Removed revision levels of references from text except where different from section 2 references or where it is germane to the discussion for consistency	N/A
6.	1	Corrected General Electric Energy to "General Electric Hitachi" to reflect proper business name	N/A
7.	Section 1.2 new paragraph after item (6)	<p>Added RAI Response Txt: "Operational aspects of the HSI process are addressed in the Human Performance Monitoring program, reference 2.1.2(12). These involve the process for refining and updating the HSI design, including:</p> <ul style="list-style-type: none"> <li>▪ Modifying and updating the HSI.</li> <li>▪ Making temporary changes to the HSI.</li> <li>▪ Creating operator defined HSIs (temporary displays defined by operators for monitoring specific plant situations).</li> <li>▪ Procedures governing permissible operator initiated changes to HSIs."</li> </ul>	18.8-49 S02

**NEDO 33268 Changes From Revision 2 to Revision 3**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
8.	1.2 new last paragraph	Add: "The scope includes the MCR, RSS, LCSs with a safety related function or as defined by TA, the Technical Support Center (TSC) and the Emergency Operations Facility (EOF). "	18.8-7
9.	1.2 (3)	Updated text to include RAI response text "Methods to evaluate the HSI equipment design to support the human performance characteristics established in the task analysis and the workplace factors under which the operators will perform the associated tasks."	18.8-7
10.	1.3.1	Revised definition of "Accident" for consistency with other LTRs.	N/A
11.	1.3.1	<p>Corrected definition of "HFE Issue Tracking System (HFEITS)", "Human Action (HA)", "Human System Interface (HSI)", and "Task" for consistency with other plans.</p> <p>Deleted definitions of "Performance Shaping Factor (PSF)" and "Slip" because they are not used or not used in the defined context within the plan.</p> <p>Deleted second "Recovery" definition to eliminate confusion and provide consistency between plans.</p> <p>Deleted "Verification" definition for consistency with other plans.</p>	N/A
12.	1.3.1	<p>Added reference to ASME-RA-S-2002 to definitions of "Human Reliability Analysis (HRA)", "Recovery", "Safety Systems", and "Support System".</p> <p>Added reference to NUREG-0711 to definition of "Risk Important Human Actions".</p>	N/A

**NEDO 33268 Changes From Revision 2 to Revision 3**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
13.	1.3.1	<p>Added definition of “HSI technology” and “operating crew”</p> <p>Notes:</p> <ul style="list-style-type: none"> <li>• operating crew size is determined by NEDO-33266 and, therefore, not presented in this NEDO.</li> <li>• with the deletion of figure 3 and updates to the NEDO, “minimum displays controls and alarm list” are no longer called out as inputs in the process flow of the HSI design.</li> </ul>	18.8-41
14.	1.3.2	D3 changed to correct definition of Defense-in-Depth and Diversity	N/A
15.	1.3.2	Added “Q-DCIS” acronym to complement “N-DCIS” acronym and to define as used throughout the document	N/A
16.	2	Revised reference format to conform to LTR writers guide and included references that are used within the document as well as references that were committed to be included in previous RAI response. Eliminated several references that are not referenced in the text, outdated, or incorporated within existing references.	18.8-8 S02
17.	2.1.2	Added reference to NEDO-33251 “ESBWR I&C Diversity and Defense-In-Depth Report” because the plan refers to D3 design in a few locations.	N/A
18.	2.2	Added new reference to ASME-RA-S “Standard for Probabilistic risk Assessment For Nuclear power Plant Applications”, 2002 because a reference to the standard was added to several definitions for consistency.	N/A
19.	2.3	Add reference: Regulatory Guide 1.105, "Setpoints for Safety-Related Instrumentation, and Regulatory Guide 1.22 “Periodic Testing Of Protection System Actuation Functions”	18.8-43

**NEDO 33268 Changes From Revision 2 to Revision 3**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
20.	3.1	Concept design describes how the use of OER, AOF and TA provides input into the HSI design and concept. There is no need for an explicit statement that defines those specific elements or components such as process flow diagrams or other AOF and TA outputs. The section is implicit in describing methodology and use of the tools. Therefore, no further revision to the LTR will be made based on the referenced RAI.	18.8-27
21.	3.1	Last sentence removed that referenced Figure 3	18.8-2 S01
22.	3.1.1 first paragraph	Although no changes were made to this paragraph, it states that “NUREG-0700 provides the base guidance for the ESBWR HSI design” and is thus considered to contain the general human factors requirements providing answer to a portion of the RAI.	18.8-41 S02
23.	3.1.1 the three paragraphs after numbered lists	Reworded for clarity. Deleted reference per RAI.	18.8-8 S02

**NEDO 33268 Changes From Revision 2 to Revision 3**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
24.	3.1.3	<p>Add the following before last paragraph of section: “In addition, the HSI design for the control room and applicable facilities addresses the guidance for the following six key aspects of the plant HSI:</p> <ul style="list-style-type: none"> <li>• Provision for periodic testing of protection systems actuation functions, as described in Regulatory Guide 1.22.</li> <li>• Bypassed and inoperable status indication for NPP safety systems, as described in Regulatory Guide 1.47.</li> <li>• Manual initiation of protective actions, as described in Regulatory Guide 1.62.</li> <li>• Instrumentation for light-water-cooled nuclear power plants to access plant and environmental conditions during and following an accident, as described in Regulatory Guide 1.97.</li> <li>• Instrumentation setpoints, as described in Regulatory Guide 1.105.</li> <li>• HSIs for the emergency response facilities (TSC &amp; EOF), as described in NUREG-0696.”</li> </ul>	18.8-43 S01
25.	3.1.3	Added “Section C.I.18” clarification to Reg. Guide 1.206 for consistency with other sections. Deleted references per RAI	18.8-8 S02
26.	3.1.4	Remove reference to Figure 3.	18.8-2 S01
27.	3.1.4	<p>Added reference to D3 report in third bulleted item</p> <p>In the sentence prior to the last bulleted list, clarified feedback through operational analysis for consistency with figure 1.</p>	N/A
28.	3.1.5	Removed reference per RAI response	18.8-8 S02

**NEDO 33268 Changes From Revision 2 to Revision 3**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
29.	3.2	Remove reference to other guidelines and data for Style Guide input and state that deviations from 0700, if any, will be justified.  Deleted sentence "The anthropometric and ergonomic data and design guidelines document provides the anthropometric and ergonomic data and guidelines that are used in the design of the HSI environment." from beginning of the second paragraph.	18.8-8 S02 18.8-7
30.	3.2	First paragraph, Fourth sentence change "requirements of" NUREG-0700 to "guidance provided by NUREG-0700"  (This was an additional occurrence from that noted in the RAI.)	18.8-38
31.	3.2	Updated paragraphs 5 and 6 to reflect that the HSI style guide will define the attributes listed within the paragraph.	N/A
32.	3.2.1(1) d	Deleted "and job analysis" for consistency as this is included within S&Q, however, the term is not used in that plan.	N/A
33.	3.2.3	Added paragraph indicating consideration of various reg. guides to be consistent with the RAI response.	18.8-43
34.	3.2.3	Removed references per RAI	18.8 S02
35.	3.2.3	Removed ref to ANSI/ISA 18.1 and modified DG 1145 to Reg Guide 1.206, C.I.18. This change was made to clarify source document for design guidance and implementation.	N/A
36.	3.2.4	Removed reference per RAI	18.8-8 S02
37.	3.2.5	References removed from document. Citations attributed to reference removed from text section.	18.8-8 S02
38.	3.3	Deleted "Corrective action program" from bulleted list because this will be implemented by owner business systems outside of the HSI.	N/A

**NEDO 33268 Changes From Revision 2 to Revision 3**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
39.	3.3.1 second paragraph	Reworded for clarity	N/A
40.	3.3.1 fourth paragraph	Revised for grammar and clarification.	N/A
41.	3.3.2	Removed references per RAI	18.8-8 S02
42.	3.3.3	Deleted references per RAI and added Reg Guide 1.206 for consistency in lieu of DG-1145.	18.8-8 S02
43.	3.3.4 item c in second list	Reworded for clarity and added reference to D3 report	N/A
44.	3.3.4 paragraphs 9 and 10	Restructured sentences for clarification.	N/A
45.	3.3.5.2 first paragraph	Deleted reference per RAI response	18.8-8 S02
46.	3.3.5.6	Section 4.7.1 no longer exists in document. References to testing and evaluation criteria are in Section 3.3.5.6 to evaluate HSI/HFE design.	18.8-31
47.	3.3.5.6 last bullet in "Trade-Off Evaluations"	Added reference to NEDO/NEDE-33217.	N/A

**NEDO 33268 Changes From Revision 2 to Revision 3**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
48.	3.3.5.6	<p><b>Replace Two sections of 3.3.5.6 with:</b></p> <p><b>Definition of the Design/Evaluation Tools for the HSI Design Analyses</b> Checklists, drawings, mock-ups, and questionnaires and interviews will be used as described below to gather HSI Tests and Evaluations data and information.</p> <p><b>Design Criteria Checklist</b> A checklist includes a series of equipment and facilities design requirements taken from human engineering standards and guides that address HSIs. The checklist is divided into categories of design criteria corresponding to major equipment or facilities. These categories might consist of visual displays, audio displays, controls, etc. NUREG-0700 provides examples of checklist formats.</p>	18.8-32 S02 18.8-33
49.	3.3.5.6	Section 4.7.2.5.2 elements were incorporated and expanded in Section 3.3.5.6. .	18.8-35
50.	3.3.5.6 HSI Design Analyses, Reviews and Evaluations section	Added "Safety and/or risk significance" to HFE techniques bullet list and deleted parenthetical phrase containing URD reference.	18.8-31 S02 18.8-8 S02
51.	3.3.5.6 Methods of Evaluation section	Reference to figure deleted.	18.8-8 S02
52.	3.3.5.13 last paragraph	Changed COLOG to fleet-wide owners group for consistency between plans	N/A
53.	3.3.5.14	Deleted last sentence with references per RAI response	18.8-8 S02
54.	3.3.5.15 third item under third bullet	Spelled out EMI/RFI – "electromagnetic interference / radio frequency interference" eliminating acronym.	N/A
55.	3.3.5.18 paragraph 2	Added NUREG 1342 to discussion and reworded per RAI response.	18.8-44 S01

**NEDO 33268 Changes From Revision 2 to Revision 3**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
56.	4.1.1 seventh bullet	Added “with the exception of the Q-DCIS” because the system is divisional and cannot access other divisions or non-safety systems by design.	N/A
57.	4.1.2 second paragraph	Changed “constraints” to “design considerations” per RAI response	18.8-28
58.	4.1.2 “Operating Experience Review of Previous NPP MMIS Designs” section second paragraph	Added statement: “Both updated domestic and modern foreign nuclear power plants operating experience are reviewed as available. The operating experience information is used by engineers and designers to support the development of HFE design features that mitigate human error.”	18.8-9
59.	4.1.2 (i)	Added: “Identified minimum list of critical parameters for design” as a response clarification to referenced RAI. List was not amended in Revision 2.	18.8-13
60.	4.1.2 Second bullet list	Deleted “EPRI” from parenthetical list.	18.8-8 S02
61.	4.2.8	The RAI referenced section (4.2.8) no longer exists. Anthropometric references are contained with in Section 3.2 in the description of the style guide with strong reliance on NUREG 0700 guidance for anthropometric parameters. See above for section 3.2 changes.	18.8-17
62.	4.3.3 second paragraph	Deleted reference to DCD chapter 18 for console profiles for document consistency. Replace phrase “regulatory criteria” with “regulatory guidance”.	N/A
63.	4.3.3 (2)	Modified statement to reflect sentence and language meaning presented in RAI response.	18.8-25
64.	4.3.4.1(1) c vi	Revised color example to better reflect intentions.	N/A

**NEDO 33268 Changes From Revision 2 to Revision 3**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
65.	4.3.4.1(1) d	Deleted last sentence "EPRI has performed studies related to alarm systems and these are considered." per RAI response.	18.8-8 S02
66.	4.3.4.3 first paragraph	Corrected NEDO Document reference from 33268 to 33217. Added reference to NEDO 33220.	N/A
67.	4.3.4.5 first paragraph	Deleted references per RAI response.	18.8-8 S02
68.	4.3.4.6(2) c	Deleted parenthetical phrase per RAI response.	18.8-2 S01
69.	4.3.4.9 (3)	Changed wording to reflect response to referenced RAI to clarify method of control and decision-making.	18.8-18 S02
70.	4.3.4.10(2) d paragraphs 2 and 4	Revised sentence grammatically to eliminate the term "essential" for consistency with other plans.	N/A
71.	4.3.4.10(2) d paragraph 4 list	Added "i Reactor vessel" because this is an important graphic and system to be represented	N/A
72.	4.3.4.11 (3) c.	Modified statement for clarity to state "An alarm is presented as a visual and audible cue in close proximity to where the operator can take corrective action". Note: This statement is slightly different from the RAI response for clarity due to additional questions during the LTR review process.	18.8-16 S02
73.	4.3.4.12 paragraphs 2 and 4"	Made grammatical and clarifying changes.	N/A
74.	4.3.4.13 first paragraph	Deleted second sentence "Initial minimum requirements were based on the EPRI NP-5795, 1991." per RAI response.	18.8-8 S02
75.	4.3.4.16 first paragraph second sentence	Revised sentence to eliminate the term "important-to-safety" for consistency with other LTRs.	N/A

**NEDO 33268 Changes From Revision 2 to Revision 3**

Item	Location in NEDO (Section #, Paragraph)	Description of Change	RAI #
76.	4.3.4.16 , last bullet	Delete: "Expanding available information to cover implicit data"	18.8-12
77.	4.3.4.17(9) f	Removed superfluous color example.	N/A
78.	4.3.4.18 , second paragraph next to last sentence	Replaced "...may be provided in the TSC and EOF" with "...are provided in the TSC and EOF."	18.8-45 S01
79.	5.1	<p>Added two bullets:</p> <ul style="list-style-type: none"> <li>• <i>Concept of operations from an HSI perspective.</i></li> <li>• <i>Functional requirement specification for HSIs.</i></li> </ul> <p>Deleted bullet                      "The process for refining and updating HSI design including:</p> <ul style="list-style-type: none"> <li>○ Modifying and updating the HSI</li> <li>○ Making temporary changes to the HSI</li> <li>○ Creating operator defined HSIs (temporary displays defined by operators for monitoring specific plant situations)</li> <li>○ Procedures governing permissible operator initiated changes to HSIs"</li> </ul> <p>in its entirety in accordance with RAI response.</p> <p>Deleted bullet:                      "HSI design team members and backgrounds" for consistency with other LTRs as this is addressed in the ESBWR Man-Machine Interface System and Human Factors Engineering Implementation Plan</p> <p>Note: this section kept the bullet "List of instruments that complies with RG 1.97 and supporting analysis", which was shown deleted in the RAI response, due to ongoing NRC discussions to ensure it is clear that this information is provided.</p>	18.8-49 S02 18.8-50

**NEDO 33268 Changes From Revision 2 to Revision 3**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
80.	5.2 and 5.3	Deleted these sections as operational aspects are not addressed in this LTR. Operational aspects are addressed in the ESBWR Human Factors Engineering Human Performance Monitoring Implementation Plan	N/A
81.	Appendix A	Deleted Appendix A Note that the change log said that the appendix would be maintained however the document has been transferred to the OER database and deleted from the HSI Implementation Plan LTR.	18.8-2 S01 18.8-10

### NEDO 33274 Changes From Revision 2 to Revision 3

Item	Location in NEDO (Section #, Paragraph)	Description of Change	RAI #
1.	Various	Corrected typos, extra spaces, formatting, and syntax as needed.	
2.	Section 1	Added the term Accident Management Guideline for overall discussion of EOPs and SAMGs, adding clarity and preventing confusion: reference owners group overview document.	
3.	Section 1 Paragraph 2	Clarified that ESBWR procedures will be “controlled documents”.	
4.	Section 1 Paragraph 4, last sentence	Clarified sentence to removed implication that only “control” actions are used in validation.	
5.	Section 1 paragraph 5, fourth sentence	Added word “actions” to clarify that procedures provide “recovery actions if specific variables exceed preset conditions”.	
6.	Section 1, 1.2, 4.1.3.1, 4.1.3.2, & 4.1.3.3	In response to this RAI which asked for additional clarification regarding how loss of CBPs is addressed, amplifying detail was added to each of these sections.	RAI 18.9-8 SO1
7.	Section 1.2 last sentence, 1.2.4 first sentence, and 4.1.4.2 first sentence	Deleted “important to safety” because this limitation was not needed in the context of the section.	
8.	Section 1.1 Paragraph 3 first sentence	Changed “design engineer” to “responsible engineer” to better align with existing GEH process titles.	
9.	Section 1.1 Paragraph 3 last sentence	Modified statement that HFE design team documents acceptable incorporation of HFE principles by deleting “through sign off on the procedures”. This revision allows this activity to be completed by mechanisms other than hard-copy sign off.	
10.	Section 1.2 Paragraph 3 item 2 bullet 1	Deleted “recommendation” as the procedure writer’s guide presents requirements.	
11.	Section 1.2 Paragraph 3 item 2 bullet 4	Revised bullet to include both numbering and labeling of components instead of just names.	

### NEDO 33274 Changes From Revision 2 to Revision 3

Item	Location in NEDO (Section #, Paragraph)	Description of Change	RAI #
12.	Section 1.2.2 Paragraph 1	Added clarification that, though ARPs are presented under the general heading of abnormal procedures, they are not part of the formal AOP population.	
13.	Section 1.2.2 Paragraph 1 items 1 & 2	Corrected the descriptions of Alarm Response Procedures (ARPs) and Abnormal Operating Procedures (AOPs). ARP description was incorrectly associated with AOPs and vice versa.	
14.	Section 1.2.3	Replaced term Emergency Operating Procedures with Accident Management Guidelines, which encompasses both the EOPs and SAMGs, and provided a definition describing the interrelationship between the individual documents.	
15.	Section 1.2.3 Sub 1	Removed "trip events" as the EOPs are symptom-based guidelines. Changed the description of the contents of Table 6, to reflect updated content and relationship to this paragraph.	
16.	Section 1.2.3 Sub 2	Further defined the SAMG role as management beyond EOP scope, and removed reference to containment flooding, as this may not be primary SAMG scheme with new design.	
17.	Section 1.2.3, Last paragraph	Added ESBWR to provide clarity.	
18.	Section 1.3.1	Added definition of Accident Management Guidelines. Revised the definition of "Risk Important Human Actions" for consistency. Enhanced definition of EOP, removing reference to RPS and ESF setpoints. Enhanced definition of SAMGs and removed specific references to Containment Flooding and Rad release, as specific guidelines for the ESBWR have not been fully developed.	
19.	Section 2.5	Added references used in accident management development, and referred to in RAI19.2-37.	
20.	Section 3.1.3 Paragraph 2 items 4	Added clarification making it clear that the ESBWR HSI will not include provisions for controlling safety systems from the nonsafety CBP system. Safety systems will be controlled from dedicated safety VDUs.	

**NEDO 33274 Changes From Revision 2 to Revision 3**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
21.	Section 3.1.5 Paragraph 2	Added BWROG to define which EPG/SAG is being referenced. Changed to “example” parameters to prevent limiting scope. EOPs are implemented, not applied.	
22.	Section 3.1.5 Paragraph 5	Added BWROG to define which EPG/SAG is being referenced.	
23.	Section 4.1.2 Paragraph 3 item 2 first sentence	Broke this lengthy sentence into a “bulletized” list for clarity.	
24.	Section 4.1.3	Deleted “leading to safe shutdown” as some events that are initially mitigated with EOPs evolve to SAMG. Added definition of EOP. Added SAMGs, and defined their scope of use.	
25.	Section 4.1.3 Paragraph 4	In response to this RAI which asked for clarification regarding the development process for ESBWR specific EPGs, the step-by-step process included in the RAI response was added to this paragraph.	RAI 18.9-1 SO2
26.	Section 4.1.3.1	Deleted “leading to safe shutdown” as some events that are initially mitigated with EOPs evolve to SAMG. Added definition of EOP.	
27.	Section 4.1.3.2 first sentence	Changed “includes, but is not limited to the following” to “includes, as applicable, the following” as not all of the list is applicable to all procedures.	
28.	Section 4.1.3.2 2nd to last paragraph	Changed “should be” to “are” to ensure clarity that EOPS and SAMGs are symptom based.	
29.	Section 4.1.3.3 2nd paragraph	Added “in the simulator” to ensure clarity.	
30.	Section 4.1.3.3 Paragraph 4 second sentence	Broke this lengthy sentence into a “bulletized” list for clarity.	

**NEDO 33274 Changes From Revision 2 to Revision 3**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
31.	Section 4.1.4	Deleted "leading to safe shutdown" as some events that are initially mitigated with EOPs evolve to SAMG. Added definition of EOP. Added SAMGs, and defined their scope of use.	
32.	Section 4.1.4.2 third sentence	Deleted the sentence stating "The manufacturer of the system or component provides the SOPs". ESBWR procedures will be developed using the top down process described in this plan with input from vendors and the other parts of the HFE process.	
33.	Section 4.1.4.4	Revised this paragraph to remove specificity regarding fixed alarm tiles, as the ESBWR design process has not yet determined exactly how alarms will be presented. Additionally, changed the alarm setpoint descriptor from "safety warning" to "predetermined" as not all alarms have safety significance.	
34.	Section 4.1.4.6	Enhanced definition of EOP, removing reference to RPS and ESF setpoints. Enhanced definition of SAMGs and removed specific references to Containment Flooding and Rad release, as specific guidelines for the ESBWR have not been fully developed.	
35.	Section 5.0	Section 5.0 "Results" was completely re-written to consolidate items that were previously part of DCD Tier 1 ITAAC Table 3.3 and DCD Tier 2 Chapter 18.4 results. The re-write was also to established consistency between the implementation plans.	
36.	Table 6	Table now matches the context of the referring paragraphs within the main document, and are based on the BWROG EPGs and SAGs.	
37.	Appendix A	Changed title to reflect content of the appendix, summarized in the background section the intent of the appendix, ensuring reader clarity that the contents were produced prior to the implementation of the HFE design process, and as such are mere examples of the potential outcome.	

**NEDO 33275 Changes From Revision 1 to Revision 2**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
1.	Various	Corrected typos, extra spaces, formatting, and syntax as needed.	
2.	Section 1.1, third paragraph, first sentence	Re-structure sentence to expand HFE role in approval of training to the program level versus limiting approval to “training modules”.	
3.	Section 1.3	Corrected acronyms and definitions in section 1.3.	
4.	Section 2.2, item 2	RAI 18.10-2 SO1 – In response to this RAI which asked why an early revision of ANSI/ANS 3.2 was referenced, the document was revised to reference the most recent revision.	RAI 18.10-2 SO1
5.	Section 3.1.4.1, final paragraph, first sentence	RAI 18.10-1 SO2 – In response to this RAI that asked for clarification regarding the various simulator names used, this document was revised to refer to only “part task”, “full scope”, and “training” simulators.	RAI 18.10-1 SO2
6.	Section 3.1.4.1 and 4.1.4.1	RAI 18.10-3 – In response to this RAI which asked why the roles and qualifications of implementing organizations and personnel are not documented in the implementation plan, the document was revised to require the appropriate documentation.	RAI 18.10-3
7.	Section 3.1.4.2, first bullet	Replaced “COLOG” with “COL Applicants” to correct the use of license applicant in the context of training needs identification.	
8.	Section 3.1.4.2, second bullet	The Operating Experience item was re-written to reflect that the review is an on-going process and is not limited to HFE issues.	
9.	Section 3.1.4.3.4	The word “actions” was added to add clarity to what was related to the rules for “confirming”.	
10.	Section 3.1.5.4, second sentence	Replaced “COL owners group” with “COL Applicants” to provide that the applicant is responsible for changes to retraining content and frequency when necessary vice the owners group as previously stated.	
11.	Section 4.1.3	Deleted “leading to safe shutdown”. The statement was incorrect as not all EOP symptom based thresholds are related to safe shutdown.	

**NEDO 33275 Changes From Revision 1 to Revision 2**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
12.	Section 5.0	Section 5.0 "Results" was completely re-written to consolidate items that were previously part of DCD Tier 1 ITAAC Table 3.3 and DCD Tier 2 Chapter 18.4 results. The re-write was also to establish consistency between the implementation plans.	
13.			
14.			
15.			

**NEDO 33278 Changes From Revision 2.0 to Revision 3.0**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
1.	All	Grammar and punctuation corrections.	
2.	All	Replaced COLOG with fleet-wide owners group	RAI 18.12-4 S02
3.	3.1& 4.1	Revised the methodology for the HSI as-built verification.	RAI 18.12-3 S01
4.	1.2	Changed COLOG to COL Holder with support of the fleet-wide owners group. The owners group name was changed from COL owners' group to fleet-wide owners' group after the RAI submission.	RAI 18.12-4 S02
5.	1.2	Re-worded to clarify requirement for verification on all plants not just initial plant.	RAI 18.12-4 S02
6.	All	Corrected HSI report to read HSI Requirements. This has been changed after RAI submission. "HSI Results Summary Report" has been changed to "HSI Requirements" this change was required as the HSI RSR does not include all of the design requirements that need to be validated during Design Implementation. HSI Requirements has been added to the definitions section.	RAI 18.12-3 S01
7.	All	Changed COL Applicant to COL Holder	
8.	1.0	Removed reference to Full Scope Simulator	
9.	1.0	Deleted "establishing and" from the last sentence of the first paragraph	
10.	1.3.1	Added definition of HFEITS	
11.	1.3.1	Changed definition of HSI Requirements.	
12.	1.0, 1.3.1, 3.2.4(1), 4.2,	Changed "used in" to "resulted from" regarding the HFE standard plant design basis form the V&V effort.	
13.	1.1(4)	Deleted This was deleted after the RAI response to clarify that the responsibility for Design Implementation was not being transferred to the owners' group.	RAI 18.12-4 S02 RAI 18.12-4 S03
14.	All	Changed HF V&V to HFE V&V	
15.	1.3.2	Deleted COLOG	
16.	1.3.2	Changed GEEN to GEH	

**NEDO 33278 Changes From Revision 2.0 to Revision 3.0**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
17.	1.3.2	Added several Acronyms	
18.	2.0	Re-wrote Applicable Documents section	
19.	2.1(2)	Updated the DCD to rev 5	
20.	3.2.1	Deleted "proposed" form the last line.	
21.	3.2.2, 3.2.4, 4.2, 4.2.2.1,4.2.2.3, 4.3.2.2,	Corrected standard to read "As-Built"	
22.	3.4.1	Reworded to clarify to transfer of HFEITS.	
23.	3.4.2	Corrected reference to the HFEITS process.	
24.	4.1.1(4)	Added HFEITS as an input	
25.	4.2.2	Deleted HF from the RE.	
26.	4.2.3	Changed listed to entered	
27.	4.1.3(4) 4.2.3(4)	Added Design Implementation to describe The Results Summary Report	
28.	4.3	Changed "not closed" to "not addressed"	
29.	4.3.1(1)	Added "Results Summary Report"	
30.	4.3.2.1	Changed "Final HFE Design Verification" to "Verification of HFE Design Not Performed in HFE V&V Activity.	
31.	4.3.2.1(1)	Added "Results Summary Report"	
32.	4.3.2.2(2)	Changed "One to two" to "additional" and added if necessary.	
33.	4.3.2.3(2)	Changed "complete" to "compile and confirm"	
34.	4.3.2.3(4)	Changed "Update verification criteria and conduct the Final HFE Design Verifications" to read "Perform V&V of HFE design for items not previously verified."	
35.	4.3.3(4)	Added "for incorporation into Design Implementation Results Summary Report."	

**NEDO 33278 Changes From Revision 2.0 to Revision 3.0**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
36.	4.4.2	Added “The Design Implementation Task Leader (TL) conducts a pre-job briefing with assigned staff, directs the performance of the activity, and verifies that results comply with the acceptance criteria. One or more members from the HFE team are assigned as Responsible Engineers (RE) to conduct the audit, complete documentation, and submit task reports.” Deleted “HEDs and open issues are reviewed and verified to be satisfactorily resolved.”	
37.	4.4.2.1(1)	Added “for the “As-Built” plant.”	
38.	4.4.2.1(2)	Added “for the “As-Built” plant.”	
39.	4.4.2.1(4)	Added “and fleet-wide owner’s group”	
40.	4.4.2.3(1)	Added step to read “Establish detailed plan and schedule and brief team. The plan should include verification strategy and sources of verification criteria (e.g., Human Factors Style Guide) for items on the list and sample forms to collect and document verification results. (TL)	
41.	4.1.3(3) 4.2.3(3) 4.3.3(3) 4.4.3(2)	Added Task Results Summary Report	
42.	4.2.3(4) 4.3.3(4) 4.4.3(3)	Changed “Summary of results for incorporation into Results Summary Report.” To read “Summary of results including data collection forms for incorporation into Design Implementation Results Summary Report.”	
43.	5.1	Re-worded the description of the results summary report.	
44.	5(5)	Added “and fleet-wide owner’s group”	
45.	Figure 1	Revised to be consistent with other HFE LTRs	
46.			
47.			

**NEDO 33277 Changes From Revision 2 to Revision 3**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
1.	Various	Global changing of GE to GEH within the document and figure 2.	NA
2.	Various	Corrected typos, extra spaces, formatting, and syntax as needed.	NA
3.	TOC, section 1.2.3 Heading	Globally replaced "COLOG" with "fleet-wide owners' group" within the document and figure 2. "Fleet-wide owners' group" is the revised name for the group referred to as "COLOG" in MFN 06-470, dated 11/21/2006.	NA
4.	TOC, section 5.3	Deleted. Revision 2 had the section and heading "5.3 Technical Output Reports" but no reports were listed. The section only contained "N/A" and has been deleted.	NA
5.	Section 1.2, 1st paragraph, sentence #2.	Simplified sentence by deleting the wording "by the ESBWR licensee".	NA
6.	Section 1.2, 1st paragraph, sentence #3.	Revised sentence by: 1. Deleting "function allocation and", 2. Replaced "V&V phase" with a complete reference to NEDO-33276.	NA
7.	Section 1.2, 2 <sup>nd</sup> paragraph, sentence #3.	Syntax improvement; replaced the wording "developing and implementing" with "executing".	NA
8.	Section 1.2.2, Introductory phrase.	Revised from "The following are the responsibilities of the ESBWR Licensee" to "Required elements of the Licensee's HPM program include:"	18.13-1 Item E
9.	Section 1.2.2, Bullets	Verbs revised to agree with introductory sentence. (e.g. "participates" changed to "participating")	18.13-1 Item E
10.	Section 1.2.3, introductory phrase and bullets.	Intro sentence and bullets revised in the same manner as section 1.2.2 above.	18.13-1 Item E
11.	Section 1.2.3, bullets 7 & 8	"GE" replaced with "GEH" within the bullet statement. Refer to # 1 above.	NA
12.	Section 1.3	Corrected definitions and acronyms.	NA

**NEDO 33277 Changes From Revision 2 to Revision 3**

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
13.	Section 2.1.1, Supporting Documents	Updated Title and revision number of documents. Additional references added.	NA
14.	Section 2.1.2, Supplemental Documents	Updated Title and revision number of documents. Additional references added.	NA
15.	Sections 2.3 and 2.4, Regulatory Guidelines	#5 moved to #3 – an alphabetical correction. Additional references added or deleted.	NA
16.	Section 3, paragraph 4, 1 <sup>st</sup> sentence.	Wording revised for clarification.	NA
17.	Section 3.1.1	Wording revised for clarification.	NA
18.	Section 3.1.3, introductory phrase.	Revised from “ESBWR licensee HPM program requirements include:” to “Required elements of the Licensee’s HPM program include:”	18.13-1 Item E
19.	Section 3.1.3, bullets	Sentences and verbs revised to agree with introductory sentence and list a required action. Example: Original sentence: Acceptance criteria and bases are established prior to start-up testing. Revised sentence: Establishing acceptance criteria and bases prior to start-up testing.	18.13-1 Item E
20.	Section 3.1.4, last paragraph, sentence 2.	Added the word “platform” to clarify that a “hardware training platform” is involved.	NA
21.	Section 3.2.1, 1 <sup>st</sup> bullet.	Deleted 2 <sup>nd</sup> sentence, no value added.	NA
22.	Section 3.2.1, 2 <sup>nd</sup> bullet	Revised “generic FSAR” to “standard FSAR”.  This is a global change throughout the document, including figure 2.	NA
23.	Section 3.2.3, introductory phrase.	Revised from “ESBWR licensee HPM program requirements include:” to “Required elements of the Licensee’s HPM program include:”	NA

### NEDO 33277 Changes From Revision 2 to Revision 3

Item	Location in NEDO (Section #, Paragraph)	Description of Change	RAI #
24.	Section 3.2.3 bullets.	Sentences and verbs revised to agree with introductory sentence and list a required action.	NA
25.	Section 3.2.4, paragraph 3	Added a reference at the end of the last sentence to ANS 3.5.	NA
26.	Section 3.3.1, sentence 2.	Revised wording for clarification. Added “adaptive actions”, replaced “addresses” with “to mitigate” and added “or consequence(s)”.	NA
27.	Section 3.3.4, last paragraph, 2 <sup>nd</sup> sentence.	Added the word “platform” to clarify that a “hardware training <u>platform</u> ” is involved.	NA
28.	Section 3.4.3, 1 <sup>st</sup> bullet.	Simplified sentence for clarification.	NA
29.	Section 3.4.4, 1 <sup>st</sup> sentence.	Revised to correctly reference the heading to section 3.4, Pilot FSAR Changes.	NA
30.	Section 3.4.4, 2 <sup>nd</sup> paragraph.	Wording revised to be consistent with sections 3.4.1 and 3.4.2.	NA
31.	Section 3.4.4, last paragraph, 3 <sup>rd</sup> sentence.	Added the word “platform” to clarify that a “hardware training <u>platform</u> ” is involved.	NA
32.	Section 4.1.1, bullets.	Revised, words added for clarification.	NA
33.	Section 4.2.1, bullets.	Revised, words added for clarification.	NA
34.	Section 4.3.1, bullets.	Revised, words added for clarification.	NA
35.	Section 4.4.1, bullets.	Revised, words added for clarification.	NA
36.	Section 5.1	This section revised to be consistent with other HFE LTRs.	NA
37.	Section 5.3	Deleted section, not applicable to HPMIP.	NA
38.	Figure 1	Updated to better reflect the process.	NA

### NEDO 33277 Changes From Revision 2 to Revision 3

<b>Item</b>	<b>Location in NEDO (Section #, Paragraph)</b>	<b>Description of Change</b>	<b>RAI #</b>
39.	Figure 2	<p>Deleted “?” marks from the decision blocks in the flowchart because the diamond shape is use to indicate a yes/no question point.</p> <p>Process block text changed from Evaluate Conditional Pilot Generic FSAR Change to Evaluate Pilot Change</p> <p>Decision block text changed from Pilot Change to Generic FSAR Required to Pilot Change to FSAR Required</p> <p>Process box text change from GE/ESBWR Licensee Interface to GEH/Fleetwide Owners’ Group Interface</p> <p>Process box with text Restore Plant per Standard was deleted</p>	NA