

## **Enclosure 1**

### **MFN 16-065, Supplement 2**

# **GEH Supplemental Information for the Updated Review of USIs, GSIs, GLs, NRC Bulletins and Operating Experience**

### **IMPORTANT NOTICE REGARDING CONTENTS OF THIS DOCUMENT Please Read Carefully**

The information contained in this document is furnished solely for the purpose(s) stated in the transmittal letter. The only undertakings of GEH with respect to information in this document are contained in the contracts between GEH and its customers or participating utilities, and nothing contained in this document shall be construed as changing that contract. The use of this information by anyone for any purpose other than that for which it is intended is not authorized; and with respect to any unauthorized use, GEH makes no representation or warranty, and assumes no liability as to the completeness, accuracy, or usefulness of the information contained in this document.

**Staff Comment:**

*The previously provided response provided in MFN 16-065 Supplement 1 to question 3 needs some more explanation of the assignment of the associated ABWR DCD cross reference.*

**GEH Response:**

A table is attached that provides a cross reference to locations for more details of the items in the Table 1.8-22 comment column. In addition, GEH added a column providing more explanation of the cross references. Only items added in MFN 16-065 are addressed in this supplement.

**Impact on DCD:**

The following ABWR DCD Revision 6 markup provided in Enclosure 2 modifies the text to address Operational Experience.

- Tier 2 Table 1.8-22

<b>Additional Generic Letters and Information Bulletins Cross References</b>					
<b>GENERIC LETTERS</b>					
<b>No.</b>	<b>Issue Date</b>	<b>Title</b>	<b>Basis for Action</b>	<b>Comment</b>	<b>Additional Location Details</b>
89-04 Supp. 1	4/4/95	Guidance on Developing Acceptable Inservice Testing Programs	The inservice testing program is an operational program as described in RG 1.206 Section C.IV.4, and therefore the responsibility of the Licensee. Section 3.9.7.3 is the COL Information Item for pump and valve testing and this COL item was in the certified design.	COL Applicant	3.9.7.3
89-10 Supp. 1	6/13/90	Supplement 1 to Generic Letter 89-10: Results of the Public Workshops	The motor-operated valve testing program is an operational program as described in RG 1.206 Section C.IV.4, and therefore the responsibility of the Licensee. Section 3.9.7.3 is the COL Information Item for pump and valve testing and this COL item was in the certified design.	COL Applicant	3.9.7.3
89-10 Supp. 3	10/25/90	Generic Letter 89-10, Supplement 3, Consideration of the Results of NRC-Sponsored Tests of Motor-Operated Valves	The motor-operated valve testing program is an operational program as described in RG 1.206Section C.IV.4, and therefore the responsibility of the Licensee. Section 3.9.7.3 is the COL Information Item for pump and valve testing and this COL item was in the certified design.	COL Applicant	3.9.7.3
89-10 Supp. 4	2/12/92	Generic Letter 89-10, Supplement 4, Consideration of Valve Mispositioning in Boiling Water Reactors	The motor-operated valve testing program is an operational program as described in RG 1.206 Section C.IV.4, and therefore the responsibility of the Licensee. Section 3.9.7.3 is the COL Information Item for pump and valve testing and this COL item was in the certified design.	COL Applicant	3.9.7.3
89-10 Supp. 5	6/28/93	Generic Letter 89-10, Supplement 5, Inaccuracy of Motor-Operated Valve Diagnostic Equipment	A COL information item is appropriate because the motor-operated valve testing program is an operational program as described in RG 1.206Section C.IV.4, and therefore the responsibility of the Licensee. Section 3.9.7.3 is the COL Information Item for pump and valve testing and this COL item was in the certified design.	COL Applicant	3.9.7.3

Additional Generic Letters and Information Bulletins Cross References					
GENERIC LETTERS					
89-10 Supp. 6	3/8/94	Generic Letter 89-10, Supplement 6, Information on Schedule and Grouping, and Staff Responses to Additional Public Questions	A COL information item is appropriate because the motor-operated valve testing program is an operational program as described in RG 1.206 Section C.IV.4, and therefore the responsibility of the Licensee. Section 3.9.7.3 is the COL Information Item for pump and valve testing and this COL item was in the certified design.	COL Applicant	3.9.7.3
89-13 Supp. 1	4/4/90	Service Water System Problems Affecting Safety-Related Equipment	GL 89-13, Supplement 1, provides questions and answers from a workshop regarding GL 89-13. The original ABWR design certification addresses GL 89-13 as the responsibility of a COL Applicant and the NRC found this to be acceptable (NUREG-1503, Sections 20.0 and 20.6). As examples, the actions to minimize mud and silt buildup, to treat the water for organisms, and to develop an inspection program are largely part of the plant interfacing water system and operational issues. Also, this relates to USI 51, which is discussed in DCD Section 19B.2.35, which also includes COL Applicant items that have previously been accepted by the NRC in Section 20.2.7 of NUREG-1503.  The ABWR certified design included these COL items.	COL Applicant	9.2.17.2, 13.5.3.4
91-15	9/23/91	Operating Experience Feedback Report, Solenoid-Operated Valve Problems at US Reactors	GL 91-15 concerns SOV reliability concerns associated with testing, inspection, and maintenance issues and refers to improvements in maintenance. Therefore, this is appropriate for the COL Applicant to consider in developing the valve inservice testing program monitoring. The inservice testing program is an operational program as described in RG 1.206, Section C.IV.4 and therefore the responsibility of the Licensee. COL item 3.9.7.3 was in the certified design	3.9.6.2.3, COL Applicant	3.9.7.3

Additional Generic Letters and Information Bulletins Cross References					
GENERIC LETTERS					
92-01 Rev. 1 Supp.1	5/19/95	Reactor Vessel Structural Integrity	Data and monitoring programs for RPV ISI and material surveillance are operational programs as described in RG 1.206, Section C.IV.4 and therefore is the responsibility of the Licensee. The pressure-temperature information is plant-specific based on plant-specific RPV material properties and calculations. COL Item 5.2.6.2 is the ISI/PSI Program and was in the certified design. COL Items 5.3.4.1 through 5.3.4.3 were in the certified design.	5.2	5.2.6.2, 5.3.4.1 & 5.3.4.3
92-08	12/17/92	Thermo-Lag 330-1 Fire Barriers	The ABWR design includes separation of divisions as described in Section 8.3. Any fire protection that uses thermal barriers would involve programmatic changes that would be part of existing COL Applicant items for fire rating of penetration seals and fire protection program elements. The ABWR certified design included COL items 9.5.13.7 and 9.5.13.9.	COL Applicant	9.5.1, 9.5.13.7 & 9.5.13.9
93-05	9/27/93	Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation	This GL related to surveillance requirements that the NRC identified as part of the NRC Technical Specifications Improvement Program (TSIP). GL 93-05 indicates that the NRC incorporated the line-item TS from NUREG-1366 into the Standard Technical Specifications issued in 09/1992. According to the NRC ABWR FSER, Section 16.1, the Standard Technical Specifications for BWRs were used to evaluate the ABWR TS. Therefore, the items that were discussed in GL 93-05 were already considered for the ABWR TS as part of the certified design. COL Information Item 13.5.3 is for procedure development and was in the certified design.	Chapter 16	16.1.1, 13.5.3
93-06	10/25/93	Research Results on Generic Safety Issue 106, "Piping and the use of Highly Combustible Gases in Vital Areas"	This issue is addressed for the ABWR through GSI-106 (Section 19B.2.46). The NRC ABWR FSER, Section 20.2.20, describes how the issues were considered for the ABWR, including how the ABWR addressed SRP 9.5.1 and used the guidelines in EPRI Report NP-5283-SR-A for hydrogen storage (also see DCD Section 9.3.9 and 9.3.10 for more information on the use of the ERPI report. No changes in this regard are made as part of the renewal application.	9.5	9.5.1.2

Additional Generic Letters and Information Bulletins Cross References					
GENERIC LETTERS					
93-08	12/29/93	Relocation of Technical Specification Tables of Instrument Response Time Limits	The values for the response times of the reactor trip system and engineered safety features actuation system are not given in the standard TS surveillance requirements. The TS Bases refers to the description of engineering documentation (DCD Section 1.1.3). Thus, the ABWR TS is already set up so that a COL Applicant may include the acceptance criteria limits in a separate document, such as the FSAR. The COL Applicant will establish a process or program for managing the response time limits, similar to those operational programs described in RG 1.206, Section C.IV.4.	COL Applicant	SRs 3.3.1.1.12, 13 & 14
94-01	5/31/94	Removal of Accelerated Testing and Special Reporting Requirements for Emergency Diesel Generators	This is a TSIP items that addresses resolution of GSI B-56 (see Section 19B.2.23 on diesel reliability), which was in the certified design. GL 94-01 provides a means for a COL applicant to develop a maintenance program and relocate the EDG testing and reporting to a program. The Maintenance Rule program is listed as an operational program in RG 1.206, Section C.IV.4, so it is appropriate that this be an action for a COL applicant or that this be addressed through license amendments post-COL.	COL Applicant	LCOs 3.8.1 and 3.8.2
94-02	7/11/94	Long-Term Solutions and Upgrade of Interim Operating Recommendations for Thermal-Hydraulic Instabilities in BWRs	GL 94-02 summarizes the history of BWR stability issues. The NRC included stability in the ABWR review, as described in NRC ABWR FSER, Section 4.4, and concludes that the ABWR stability design is consistent with the BWROG long-term stability solution licensing methodology. This is part of the certified design.	4.4.3.7	
94-03	7/25/94	Intergranular Stress Corrosion Cracking of Core Shrouds in Boiling Water Reactors	The ABWR DCD Section 5.2.3 describes reactor coolant materials and water chemistry to avoid IGSCC. This would include IGSCC of the core shroud. The NRC found the approach to be acceptable in the certified design.	5.2.3.4.1	

Additional Generic Letters and Information Bulletins Cross References					
GENERIC LETTERS					
95-07	8/17/95	Pressure Locking and Thermal Binding of Safety-Related Power-Operated Gate Valves	The inservice testing program is an operational program as described in RG 1.206, Section C.IV.4 and therefore the responsibility of the Licensee. Section 3.9.6.2.3 describes the actions for the COL applicant for power-operated valves. Section 3.9.7.3 is the COL Information Item for pump and valve testing and this COL item was in the certified design.	3.9.6.2.3, COL Applicant	3.9.7.3
95-10	12/15/95	Relocation of Selected Technical Specifications Requirements Related to Instrumentation	The ABWR DCD TS as part of certification never included the items that the GL is proposing to relocate. Items that were not included are to be contained in the procedures and programs required in 16.5.5.1 and 16.5.5.2.	Chapter 16	16.5.5.1 and 16.5.5.2
96-01	1/10/96	Testing of Safety-Related Logic Circuits	<p>The ABWR DCD Section 7.1.2.1.6 identifies testing for the RPS and ESF that can be done during reactor operation by six separate tests, with the sixth being an integrated self-test. This section was in the certified design.</p> <p>Section 16.1.1 provides the COL information required for the plant-specific technical specifications. SR 3.3.1.4.4 provides for an end-to-end comprehensive functions test that would identify problems in the logic circuit. The TS SRs were in the certified design.</p> <p>Section 13.5.3.4 describes the scope of procedures that would be within the COL item for plant procedure development, which is part of COL License Information 13.5.3, which was in the certified design.</p>	7.1.2.1.6, Chapter 16, COL Applicant	Technical Specification SR 3.3.1.4.4 and 13.5.3.4
96-03	1/31/96	NRC Generic Letter 96-03: Relocation of the Pressure Temperature Limit Curves and Low Temperature Overpressure Protection System Limits	The ABWR TS already refer to a pressure temperature limits report. The COL applicant will submit plant-specific pressure temperature curves as required by COL item 5.3.4.3. The LTOP is related to PWRs. This TS information was in the certified design. COL Item 5.3.4.3 was in the certified design.	Chapter 16, COL Applicant	5.3.4.3

Additional Generic Letters and Information Bulletins Cross References					
GENERIC LETTERS					
96-04	6/26/96	Boraflex Degradation in Spent Fuel Pool Storage Racks	Section 4.3 of the Technical Specifications (Chapter 16) describes the design of the spent fuel storage racks for criticality control. This is appropriate for determining the material for the storage racks. Boraflex is not discussed in Section 9.1 of the DCD as a material that would be used. This TS information was in the certified design.	16.4.3.1	16.4.3.1
96-05	9/18/96	Periodic Verification of Design-Basis Capability of Safety-Related Power-Operated Valves	The inservice testing program is an operational program as described in RG 1.206, Section C.IV.4 and therefore the responsibility of the Licensee. Section 3.9.6.2.3 describes the actions for the COL applicant for power-operated valves. Section 3.9.7.3 is the COL Information Item for pump and valve testing and this COL item was in the certified design.	3.9.6, 3.9.7.3 COL Applicant	3.9.7.3
96-06	9/30/96	Assurance of Equipment Operability and Containment Integrity During Design-Basis Accident Conditions	Section 3.11 covers the ABWR design and requirements for equipment environmental qualifications for post-accident conditions. COL Item 3I.3.3.1, which was in the certified design, requires that the applicant review the conditions defined in the DCD and confirm the applicability. Section 6.2 describes the various design features that assure containment integrity. Sections 3.12 and 6.2 and Appendix 3I were included in the certified design.	6.2, 3.11	3.11.1 and 3I
96-06 Supp. 1	11/13/97	Assurance of Equipment Operability and Containment Integrity During Design-Basis Accident Conditions	Section 3.11 covers the ABWR design and requirements for equipment environmental qualifications for post-accident conditions. Section 6.2 describes the various design features that assure containment integrity. Sections 3.12 and 6.2 and Appendix 3I were included in the certified design.	6.2, 3.11	3.11.1 and 3I
98-05	11/10/98	Boiling Water Reactor Licensees Use of the BWRVIP-05 Report to Request Relief from Augmented Examination Requirements on Reactor Pressure Vessel Circumferential Shell Welds	The preservice and inservice programs are operational program as described in RG 1.206, Section C.IV.4 and therefore the responsibility of the Licensee. Section 5.2.4 describes the actions for the COL applicant for preservice and inservice inspection of reactor coolant pressure boundary. Section 5.2.6.2 is the COL Information Item for ISI/PSI and was in the certified design.	5.3, COL Applicant	5.2.6.2



Additional Generic Letters and Information Bulletins Cross References					
GENERIC LETTERS					
99-02	06/03/99	Laboratory Testing of Nuclear-Grade Activated Charcoal	The ABWR TS in 16.5.5.2.7 already requires the use of the laboratory testing requirements included in the generic letter as part of the certified design.	16.5.5.2.7	
99-02 Errata	08/23/99	Laboratory Testing of Nuclear-Grade Activated Charcoal	The ABWR TS in 16.5.5.2.7 already required the use of the laboratory testing requirements included in the generic letter as part of the certified design.	16.5.5.2.7	
03-01	06/12/03	Control Room Habitability	<p>The subject of the GL is addressed in the DCD Section 6.4 as part of the certified design. The design of the MCR envelope is a positive pressure at all times with respect to the atmosphere.</p> <p>The ABWR TS surveillance currently requires a pressure measurement relative to the atmosphere so a change in TS is not required.</p> <p>The MCR habitability including the emergency air filtration system is described in the ABWR design certification SER (NUREG 1503) sections 6.4 and 6.5 and was found acceptable.</p>	6.4	
06-02	02/01/06	Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power	The subject of the GL is described in 8.2.2 and 8.2.3 and the associated COL items are 8.2.4.1 and 8.2.4.3. As described in the original ABWR design certification SER (NUREG 1503) Section 8.2. the COL addresses the portions of the design that are outside the scope of design of the ABWR standard plant. This information was in the certified design.	8.2, COL Applicant	8.2.4.1 & 8.2.4.3

<b>Additional Generic Letters and Information Bulletins Cross References</b>					
<b>GENERIC LETTERS</b>					
06-03	04/10/06	Potentially Nonconforming Hemyc and MT Fire Barrier Configurations	<p>Any fire protection that uses thermal barriers would involve programmatic changes that would be part of existing COL Applicant items for fire rating of penetration seals and fire protection program elements.</p> <p>The fire protection program is an operational program as described in RG 1.206, Section C.IV.4 and therefore the responsibility of the Licensee. Subsections 9.5.13.7 and 9.5.13.9 describe the actions for the COL applicant for fire protection associated with fire barriers. These COL Information Items were part of the original design certification.</p>	9.5.13.9, COL Applicant	9.5.1 & 9.5.13.7
07-01	02/07/07	Inaccessible or Underground Power Cable Failures that Disable Accident Mitigation Systems or Cause Plant Transients	<p>The ABWR DCD requires separation and independence of power cable arrangement (e.g. Table 8.2-1). The original ABWR design certification SER (NUREG 1503) subsection 8.3.1.2 states that divisions are segregated so that no design basis event is capable of disabling more than on division of any ESF total function.</p> <p>In addition, in the original ABWR SER Section 8.2 the COL addresses the portions of the design that are outside the scope of design of the ABWR standard plant.</p> <p>This information was in the certified design.</p>	COL Applicant	8.2
08-01	01/11/08	Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems	As described in 5.4.8.3 a vent line was added in revision 6 of the DCD to address the concern described in GL 08-01.	5.4.8, 19B.2.2	
16-01	4/7/2016	Monitoring of Neutron-Absorbing Materials in Spent Fuel Pools	The monitoring of the materials for fuel storage is required by the ABWR TS 16.4.3.1 as part of the certified design. Therefore, the requirements of the GL are satisfied.	16.4.3.1	

<b>Information Bulletins</b>					
<b>No.</b>	<b>Issue Date</b>	<b>Title</b>		<b>Comment</b>	<b>Additional Location Details</b>
93-02	05/11/93	Debris Plugging of Emergency Core Cooling Suction Strainers		6C	
93-02 Supp. 1	02/18/94	Debris Plugging of Emergency Core Cooling Suction Strainers		6C	
93-03	05/28/93	Resolution of Issues Related to Reactor Vessel Water Level Instrumentation in BWRs		5.2.5.2.1(12)	
94-01	04/14/94	Potential Fuel Pool Draindown Caused by Inadequate Maintenance Practices at Dresden Unit 1		9.1.2 & 9.1.3	

<b>Information Bulletins</b>					
95-02	10/17/95	Unexpected Clogging of a Residual Heat Removal (RHR) Pump Strainer While Operating in Suppression Pool Cooling Mode	The ABWR DCD Appendix 6C contains the evaluation of potential debris in the suppression pool and the consequences to the ECCS systems (suction strainer, piping, valves, instrumentation and pumps). Appendix 6C is revised in the renewal application. Also, new Section 19B.2.77 discusses GSI 193 on BWR ECCS Suction Strainers.	6C	
96-02	04/11/96	Movement of Heavy Loads Over Spent Fuel, Over Fuel in the Reactor Core, or Over Safety-Related Equipment	<p>The overhead heavy load handling system safety evaluation is contained in 9.1.5.5. The utility's operational responsibilities are listed in 9.1.5.8 and duplicated in the COL item 9.1.6.6. COL 9.1.6.6 (6 items) was included in the certified design.</p> <p>The ABWR design certified SER (NUREG 1503) section 9.1.5 also describes the overhead heavy load-handling design features to prevent damage to equipment, fuel and structures, and the basis for NRC approval of the certified design.</p> <p>Also, see information being added to the DCD in Section 19B.2.74 for GSI-186 to explain how Bulletin 96-02 is already addressed in the ABWR DCD, as originally certified.</p>	9.1.5	9.1.6.6
96-03	05/06/96	Potential Plugging of Emergency Core Cooling Suction Strainers by Debris in Boiling-Water Reactors	The ABWR DCD Appendix 6C contains the evaluation of potential debris in the suppression pool and the consequences to the ECCS systems (suction strainer, piping, valves, instrumentation and pumps). Appendix 6C is revised in the renewal application. Also, new Section 19B.2.77 discusses GSI 193 on BWR ECCS Suction Strainers.	6C	

Information Bulletins					
2005-02	07/18/05	Emergency Preparedness and Response Actions for Security-Based Events	<p>Emergency planning and plant security program are operational programs as described in RG 1.206, Section C.IV.4 and therefore the responsibility of the Licensee. Sections 13.3.1.1 and 13.5.3.2 describe the actions for the COL applicant for Emergency Preparedness and associated procedures. Section 13.3.1.1 is the same as it was in the original ABWR design certification, and Section 13.5.3.2 contains the certified content and a new item on emergency operating procedures and guidelines for severe accidents.</p> <p>In addition, in the original ABWR design certified SER (NUREG 1503) Section 13.3 the staff agreed that the COL applicant was responsible.</p>	COL Applicant	13.3.1.1, 13.5.3.2
2011-01	05/11/11	Mitigating Strategies	<p>This bulletin is addressed to holders of operating licenses and not applicants for standard design certifications. NRC guidance and regulations provide additional information for COL applicants and COL licensees for addressing emergencies and mitigating strategies. Therefore, it is acceptable for this bulletin to be addressed by a COL applicant in a future application as part of an overall strategy for emergency planning and management of severe accidents (including requirements for beyond-design-basis events).</p>	<del>LD</del> -COL Applicant	13.5.2, 13.5.3.1 and 13.5.3.2