

**ESBWR Tier 2 DCD Rev 5**  
**Proposed Disposition of COL Holder Items**  
**(ESBWR DCWG Meeting - 2/11/09)**

Item No.	Subject/Description	DCD Section	NAPS U3 COLA Text	Disposition of DCD COLA Item
1.7-1-H	<p><b><u>Final Design Configuration Confirmation</u></b></p> <p>Upon completion of the final design configuration, the licensee will make available to the NRC the revisions of the final P&amp;IDs used for construction. The licensee will also identify any design changes that require revisions to the simplified diagrams provided in the COLA and submit those identified changes to NRC as part of an FSAR update. (Subsection 1.7.2)</p>	1.7.2	<p>The final P&amp;IDs used for construction will be available upon completion of the final design configuration. Design changes that result in revisions to the simplified diagrams will be incorporated in subsequent updates to this FSAR.</p>	<p>Rewrite DCD COL Item:</p> <p>The COL applicant shall provide a milestone for when final P&amp;IDs used for construction will be made available to the NRC.  <b>[Alternative: this item could be deleted and replaced by a DCD commitment statement such as: Final P&amp;IDs used for construction shall be made available to the NRC upon completion of the final design configuration.]</b></p> <p>The COL applicant shall also commit to incorporate into the FSAR design changes that result in revisions to the simplified diagrams in subsequent updates to the FSAR.  <b>[Alternative: this commitment could be deleted because it is unnecessary since this action is required by the Part 52 COL change process]</b></p>

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3.9.9-1-H	<p><b><u>Reactor Internals Vibration Analysis, Measurement and Inspection Program</u></b></p> <p>The COL Holder shall provide the information identified in Subsection 3.9.2.4 related to position C.3 of RG 1.20.</p>	3.9.2.4	<p>A vibration assessment program as specified in RG 1.20 is provided in DCD Appendix 3L and the following referenced GEH Reports.</p> <ul style="list-style-type: none"> <li>• NEDE-33259P, “ESBWR Reactor Internals Flow Induced Vibration Program”</li> <li>• NEDE-33312P, “Steam Dryer Acoustic Load Definition”</li> <li>• NEDE-33313P, “Steam Dryer Structural Evaluation”</li> <li>• NEDC-33408P, “ESBWR Steam Dryer Plant Based Load Evaluation Methodology”</li> </ul> <p>Information on a schedule in accordance with the five applicable scheduling portions of position C.3 of RG 1.20 (refer to Section C.2.5) for non-prototype internals is as follows.</p> <ul style="list-style-type: none"> <li>• In response to C.2.5, Item (1), the reactor internals design has been classified by GEH in DCD Section 3L.1 as non-prototype Category II.</li> <li>• In response to C.2.5, Items (2), (3) and (4), Unit 3 is committed to the comprehensive vibration assessment program including the scope, the vibration measurement and inspection phases and the summary as described in <a href="#">DCD Appendix 3L</a> with no departures.</li> <li>• In response to C.2.5, Item (5), Unit 3 will submit the preliminary and final reports which together summarize the results of the vibration analysis, measurement, and inspection programs to the NRC within 60 days and 180 days, respectively, following the completion of the vibration testing.</li> </ul>	<p>Rewrite DCD COL Item:</p> <p>The COL applicant shall classify its reactor per the guidance in RG 1.20 and provide a milestone for submitting the inspection procedures, if applicable, and inspection results.</p>

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3.9.9-2-H	<p><b><u>ASME Class 2 or 3 or Quality Group D Components with 60 year Design Life</u></b></p> <p>For the piping segments identified in Subsection 3.9.3.1 that are subject to loadings that could result in thermal or dynamic fatigue, the COL Holder shall provide the analyses as required by the ASME Code, Subsection NB.</p>	3.9.3.1	The piping stress reports identified in this DCD section will be completed within six months of completion of ITAAC Table 3.1-1. The FSAR will be revised as necessary in a subsequent update to address the results of this analysis.	<p>Rewrite DCD COL Item:</p> <p>The COL applicant shall provide a milestone for completing the required pipe stress reports, per ASME Code, Subsection NB, for piping segments identified in Subsection 3.9.3.1 that are subject to loadings that could result in thermal or dynamic fatigue and for updating the FSAR, as necessary, to address the results of the analysis.</p>

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5.2-2-H	<p><b><u>Leak Detection Monitoring</u></b></p> <p>The COL Holder is responsible for the development of a procedure to convert different parameter indications for identified and unidentified leakage into common leak rate equivalents and leak rate rate-of-change values.</p> <p>The COL Holder is responsible for the development of procedures for monitoring, recording, trending, determining the source(s) of leakage, and evaluating potential corrective action plans. (Subsection 5.2.5.9)</p>	5.2.5.9	<p>Operators are provided with procedures for detecting, monitoring, recording, trending, and determining the sources of reactor coolant pressure boundary leakage. Examples of parameters that are monitored are sump pump run time, sump level, condensate transfer rate, and process chemistry/radioactivity.</p> <p>The procedures are used for converting different parameter indications for identified and unidentified leakage into common leak rate equivalents (volumetric or mass flow) and leak rate rate-of-change values, including indications from: 1) the drywell floor drain high conductivity water sump monitoring system, 2) the drywell air coolers condensate flow monitoring system, and 3) the drywell fission product monitoring system.</p> <p>The procedures are used to monitor leakage at levels well below Technical Specifications limits and provide guidance for evaluating potential corrective action plans to prevent the plant from exceeding a Technical Specifications limit.</p> <p>An unidentified leakage rate-of-change alarm provides an early alert to the operators to initiate corrective actions prior to reaching a Technical Specifications limit.</p> <p>A description of the plant procedures program and implementation milestones are provided in Section 13.5.</p>	<p>Rewrite the DCD COL item:</p> <p>The COL applicant shall include in its operating procedure development program:</p> <ul style="list-style-type: none"> <li>- Procedures to convert different parameter indications for identified and unidentified leakage into common leak rate equivalents and leak rate rate-of-change values.</li> <li>- Procedures for monitoring, recording, trending, determining the source(s) of leakage, and evaluating potential corrective action plans. (Subsection 5.2.5.9)</li> <li>- Milestone for completing this category of operating procedures.</li> </ul>

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6.2-1-H	<p><b><u>Pipe Length from Containment to Inboard / Outboard Isolation Valve</u></b></p> <p>The COL Holder will provide the pipe lengths from containment to the isolation valves. (Subsection 6.2.4.2.)</p>	6.2.4.2	NA	Deleted for DCD Rev 6 in response to RAI 6.2-157 S02
9.2.5-1-H	<p><b><u>Post 7-Day Makeup to Ultimate Heat Sink (UHS)</u></b></p> <p>The COL Holder will develop procedures to supply makeup water 7 days after an accident (Subsection 9.2.5).</p>	9.2.5	Procedures that identify and prioritize available makeup sources seven days after an accident, and provide instructions for establishing necessary connections, will be developed in accordance with the procedure development milestone in Section 13.5.	<p>Rewrite the DCD COL Item:</p> <p>The COL applicant shall include in its operating procedure development program:</p> <ul style="list-style-type: none"> <li>- Procedures that identify and prioritize available makeup sources seven days after an accident, and provide instructions for establishing necessary connections</li> <li>- Milestone for completing this category of operating procedures.</li> </ul>

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9.5.1-6-H	<p><b><u>Smoke Control</u></b></p> <p>The COL Holder will establish provisions for manual smoke control by manual actions of the fire brigade for all plant areas in accordance with NFPA 804 guidelines (Subsection 9.5.1.11).</p>	9.5.1.11	<p>Procedures for manual smoke control will be developed as part of the Fire Protection Program implementation. The required elements of the Fire Protection Program are fully operational prior to receipt of new fuel for buildings storing new fuel and adjacent fire areas that could affect the fuel storage area. Other required elements of the Fire Protection Program described in this section are fully operational prior to initial fuel loading per Section 13.4.</p>	<p>Rewrite the DCD COL item:</p> <p>The COL applicant shall include in its operating procedure development program:</p> <ul style="list-style-type: none"> <li>- Procedures for manual smoke control by manual actions of the fire brigade for all plant areas in accordance with NFPA 804 guidelines. (Subsection 9.5.1.11).</li> <li>- Milestone for completing this category of operating procedures.</li> </ul>
9.5.1-7-H	<p><b><u>Fire Hazards Analysis (FHA) Compliance Review</u></b></p> <p>The COL Holder referencing the ESBWR Standard Plant will conduct a compliance review of the final as-built design against the assumptions and requirements stated in the FHA. Based on this review, the FHA will be updated as necessary (Subsection 9.5.1.12).</p>	9.5.1.12	<p>A compliance review of the final as-built design against the assumptions and requirements stated in the FHA will be completed in accordance with the milestones in Section 13.4. Based on this review, the FHA will be updated as necessary.</p>	<p>Rewrite the DCD COL Item:</p> <p>The COL applicant shall provide a milestone for completing a compliance review of the final as-built design against the assumptions and requirements stated in the FHA. Following completion of the review, the FHA shall be updated as necessary.</p>

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9.5.1-10-H	<p><b><u>Fire Brigade</u></b></p> <p>The COL Holder shall provide provisions for manual fire-fighting capability for all plant areas (Subsection 9.5.1.15.4).</p>	9.5.1.15.4	Implementation of the fire brigade will be in accordance with the milestones in Section 13.4 for the Fire Protection Program.	<p>Rewrite the COL Item:</p> <p>The COL applicant shall provide a milestone for implementing the provisions for manual fire-fighting capability for all plant areas (Subsection 9.5.1.15.4).</p>
12.3-3-H	<p><b><u>Controlled Access</u></b></p> <p>Controlled access to “Very High Radiation Areas” is provided by the COL Holder (Subsection 12.3.1.3).</p>	12.3.1.3	NA	Deleted for DCD Rev 6 in response to RAI 12.4-38
13.5-6-H	<p><b><u>Procedures for Calibration, Inspection and Testing</u></b></p> <p>The COL Holder shall develop Calibration, Inspection and Testing Procedures (Subsection 13.5.2).</p>	13.5.2	<p>The following procedures are included in the scope of the Plant Operating Procedures Development Plan:</p> <ul style="list-style-type: none"> <li>• Procedures for calibration, inspection, and testing</li> </ul>	<p>The COL applicant shall include in its operating procedure development program:</p> <ul style="list-style-type: none"> <li>- Procedures for calibration, inspection, and testing.</li> <li>- Milestone for completing this category of operating procedures</li> </ul>

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13.6-8-H	<p><b><u>Central Alarm Station and Secondary Alarm Station Redundancy</u></b></p> <p>The COL Holder shall demonstrate that the design of the security system precludes any single postulated security event resulting in an unacceptable degradation of the site security staff's ability to monitor and direct the response to a security event from either the CAS or SAS. This will include the power supplies to both alarm stations.</p>	13.6.3	<p>The licensee will demonstrate through a one time test, analysis, or a combination of tests and analyses, that no single postulated security event will disable the capability of both the Central and Secondary Alarm Stations. This demonstration will be completed prior to the milestone for Physical Security Plan implementation (Table 13.4-201).</p>	<p>Delete this COL item and rewrite DCD COL Item 13.6-7A to read:</p> <p>The COL applicant shall:</p> <ul style="list-style-type: none"> <li>- Identify the location of the Secondary Alarm Station (SAS).</li> <li>- Ensure that the design of the security system precludes any single postulated security event resulting in an unacceptable degradation of the site security staff's ability to monitor and direct the response to a security event from either the CAS or SAS. This will include the power supplies to both alarm stations.</li> </ul>

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14.2-2-H	<p><b><u>Startup Administrative Manual</u></b></p> <p>A Startup Administrative Manual is developed and made available by the COL Holder to the NRC 60 days prior to the scheduled start of the preoperational test program (Subsection 14.2.2.1).</p>	14.2.2.1	The Startup Administrative Manual (SAM) will be developed and made available for review 60 days prior to scheduled start of the preoperational test program.	<p>Rewrite the DCD COL Item:</p> <p>The COL applicant will provide a milestone for completing the Startup Administrative Manual and making it available to the NRC for review. (Subsection 14.2.2.1).</p> <p>[As an alternative, this COL item could be deleted and replaced by a DCD commitment statement, such as: A Startup Administrative Manual is developed and made available to the NRC 60 days prior to the scheduled start of the preoperational test program.]</p>

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14.2-3-H	<p><b><u>Test Procedures</u></b></p> <p>Approved test procedures for satisfying the commitments of this chapter are made available to the NRC by the COL Holder approximately 60 days prior to their intended use for preoperational tests and not less than 60 days prior to scheduled fuel loading for power ascension tests (Subsection 14.2.2.2).</p>	14.2.2.2	<p>Approved test procedures for satisfying the commitments of this section will be developed and available for review no later than 60 days prior to their intended use for preoperational tests and no later than 60 days prior to scheduled fuel loading for power ascension tests.</p>	<p>Rewrite the DCD COL Item:</p> <p>The COL applicant shall provide milestones for making available to the NRC approved test procedures satisfying the commitments in this chapter.</p> <p>[As an alternative, this COL item could be deleted and replaced by a DCD commitment statement, such as: Approved test procedures for satisfying the commitments of this chapter are made available to the NRC approximately 60 days prior to their intended use for preoperational tests and not less than 60 days prior to scheduled fuel loading for power ascension tests.]</p>

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14.2-4-H	<p><b><u>Test Program Schedule and Sequence</u></b></p> <p>The detailed testing schedule is generated by GEH and the COL Holder and is made available to the NRC prior to actual implementation. (Subsection 14.2.7).</p>	14.2.7	<p>The detailed testing schedule will be developed and made available for review prior to actual implementation. The schedule may be updated and continually optimized to reflect actual progress and subsequent revised projections.</p> <p>The implementation milestones for the Initial Test Program are provided in Section 13.4.</p>	<p>Rewrite the DCD COL Item:</p> <p>The COL applicant shall provide a milestone for completing the detailed testing schedule and making it available to the NRC.</p> <p>[As an alternative, this COL item could be deleted and replaced by a DCD commitment statement, such as:  The detailed testing schedule is generated and made available to the NRC prior to actual implementation.]</p>

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14.2-6-H	<p><b><u>Site Specific Test Procedures</u></b></p> <p>Approved test procedures satisfying the commitments of this chapter are to be made available to the NRC approximately 60 days prior to their intended use for preoperational tests and not less than 60 days prior to scheduled fuel loading for power ascension tests (Subsection 14.2.9).</p>	14.2.9	<p>Specific testing to be performed and the applicable acceptance criteria for each preoperational and startup test are documented in test procedures to be made available to the NRC approximately 60 days prior to their intended use for preoperational tests, and not less than 60 days prior to scheduled fuel load for initial startup tests. Site-specific preoperational tests are in accordance with the system specifications and associated equipment specifications for equipment in those systems provided by the licensee that are not part of the standard plant described in DCD Section 14.2.8. The tests demonstrate that the installed equipment and systems perform within the limits of these specifications.</p>	<p>Rewrite the DCD COL Item:</p> <p>The COL applicant shall provide milestones for making available to the NRC approved test procedures satisfying the commitments in this chapter.</p> <p>[As an alternative, this COL item could be deleted and replaced by a DCD commitment statement, such as: Approved test procedures for satisfying the commitments of this chapter are made available to the NRC approximately 60 days prior to their intended use for preoperational tests and not less than 60 days prior to scheduled fuel loading for power ascension tests.]</p>

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16.0-2-H	<p><b><u>COL Holder Bracketed Items</u></b></p> <p>COL holders referencing the ESBWR DCD will replace the preliminary information provided in brackets ("[...]"), and annotated with "16.0-2-H" labels, with final plant specific information.</p>	16.0	NA	Will be converted to COL Applicant item.

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17.4-1-H	<p><b><u>Operation Reliability Assurance Activities</u></b></p> <p>The COL Holder will provide a description of operational reliability assurance activities (Subsection 17.4.1).</p>	17.4.1	<p>The objectives of reliability assurance during the operations phase are integrated into the Quality Assurance Program (Section 17.5), the Maintenance Rule (MR) Program (Section 17.6), and other operational programs. Specific reliability assurance activities are addressed within operational programs (e.g., maintenance rule, surveillance testing, inservice testing, inservice inspection, and quality assurance) and the maintenance programs.</p> <p>The MR Program incorporates the following aspects of operational reliability assurance (refer to Section 17.6):</p> <ul style="list-style-type: none"> <li>• Use of PRA importance measures, the expert panel process, and deterministic methods to determine the list of risk-significant SSCs</li> <li>• Evaluation and maintenance of the reliability of risk-significant SSCs</li> <li>• Monitoring the effectiveness of maintenance activities needed for operational reliability assurance</li> <li>• Classifying, initially, as high-safety-significant, all SSCs that are in the scope of the design reliability assurance program (D-RAP), or applying expert panel review for any exceptions....</li> </ul>	<p>Rewrite the DCD COL item:</p> <p>The COL applicant shall provide a description of operational reliability assurance activities (Subsection 17.4.1).</p>

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18.13-1-H	<p><b><u>Milestones for Human Performance Monitoring Implementation</u></b></p> <p>The COL Holder will provide a milestone for the implementation of the HPM program (Subsection 18.13.3).</p>	18.13.3	The HPM program will be implemented prior to the beginning of the first licensed operator training class.	<p>Rewrite DCD COL item:</p> <p>The COL applicant shall provide a milestone for the implementation of the HPM program (Subsection 18.13.3).</p> <p>NOTE: In RAI 14.3-245, NRC requested applicant item to be changed to holder.</p>
19.2.6-1-H	<p><b><u>Seismic High Confidence Low Probability of Failure Margins</u></b></p> <p>The COL Holder referencing the ESBWR certified design shall compare the as-built SSC HCLPFs to those assumed in the ESBWR seismic margin analysis shown in Table 19.2-4. Deviations from the HCLPF values or other assumptions in the seismic margins evaluation shall be analyzed to determine if any new vulnerabilities have been introduced. (Subsection 19.2.3.2.4)</p>	19.2.3.2.4	As-built SSC High Confidence Low Probability of Failure (HCLPF)s will be compared to those assumed in the ESBWR seismic margin analysis shown in DCD Table 19.2-4. Deviations from the HCLPF values or other assumptions in the seismic margins evaluation will be analyzed to determine if any new vulnerabilities have been introduced. This comparison and analysis will be completed prior to fuel load.	<p>Rewrite the DCD COL Item:</p> <p>The COL applicant shall identify a milestone for completing a comparison of the as-built SSC High Confidence Low Probability of Failure (HCLPF)s to those assumed in the ESBWR seismic margin analysis shown in DCD Table 19.2-4. Deviations from the HCLPF values or other assumptions in the seismic margins evaluation shall be analyzed to determine if any new vulnerabilities have been introduced.</p>

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