

## ESBWR DCD Chapter 3.9-3.11

### 26A6642AK Revision 9 to Revision 10 Change List

Item	Location	Description of Change
1.	Cover Page	Added GE Hitachi Logo per GEH branding requirements. Changed date from December 2010 to April 2014. Copyright date also changed to 2014.
2.	Entire Chapter	Header changed from Revision 9 to Revision 10.
3.	S3.9.2.3, 3 <sup>rd</sup> para, 2 <sup>nd</sup> sent	Per response to RAI 3.9-285, as modified by response to RAI 3.9-293 S01 (final markups provided in response to RAI 3.9-292 S03), changed “peak component stresses” to “highest component stresses”.
4.	S3.9.2.3, 8 <sup>th</sup> para, 1 <sup>st</sup> sent	Per response to RAI 3.9-285, as modified by response to RAI 3.9-293 S01 (final markups provided in response to RAI 3.9-292 S03), changed “peak stress amplitude” to “highest stress amplitude”.
5.	S3.9.2.3, 8 <sup>th</sup> para, 2 <sup>nd</sup> sent	Per response to RAI 3.9-285, modified by response to RAI 3.9-293 S01 (final markups provided in response to RAI 3.9-292 S03), changed “higher allowable peak stress limit” to “higher allowable highest stress limit”.
6.	S3.9.2.3, 10 <sup>th</sup> para, new last two sentences	Per response to RAI 3.9-270, as modified by responses to RAIs 3.9-293 and 3.9-293 S01 (final markups provided in response to RAI 3.9-292 S03), added the following sentences: “For additional conservatism in the predictive analysis, the analysis stress results will also meet a minimum alternating stress ratio (MASR) of 2.0 between the analysis results and the fatigue acceptance limit. This is verified for the predictive analysis of each as-built steam dryer through inspections, tests, and analyses acceptance criteria during construction.”
7.	S3.9.2.3, 11 <sup>th</sup> and 12 <sup>th</sup> paragraphs	Per response to RAI 3.9-270, as modified by responses to RAIs 3.9-293 and 3.9-293 S01 (final markups provided in response to RAI 3.9-292 S03), re-wrote paragraphs in their entirety to explain steam dryer startup testing, predictive stress analysis and confirmatory stress analysis.
8.	S3.9.2.4, 6 <sup>th</sup> para, 3 <sup>rd</sup> sent	Per final markups provided in response to RAI 3.9-292 S03, added a comma (“,”) between steam dryer and chimney.

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9.	S3.9.2.4, 9 <sup>th</sup> para, new last two sentences	<p>Per response to RAI 3.9-291, as modified by response to RAI 3.9-292 S03 (final markups provided in response to RAI 3.9-292 S03), added the following sentences:</p> <p>“As part of the initial implementation of the vibration assessment program, RG 1.20 guidance in Section 2.4 states that if inspection of the reactor internals reveals defects, evidence of unacceptable motion, or excessive or undue wear; if results from the measurement program fail to satisfy the specified test acceptance criteria; or if results from the analysis, measurement, and inspection programs are inconsistent, then further evaluations, modifications, or other actions are taken to justify the structural adequacy of the reactor internals. Such results and actions are reported to the NRC as part of the final report documentation of results of the comprehensive vibration assessment program following testing.”</p>
10.	S3.9.2.4, 10 <sup>th</sup> para, last sentence	<p>Per response to RAI 3.9-291 S02, added the following phrase at the end of the section:</p> <p>“...and address the recommendations in RG 1.20 for a comprehensive vibration assessment program for the steam dryer as described in Reference 3L-6 (COL 3.9.9-1-A).”</p>
11.	Table 3.9-4	<p>Revised Table to remove reference to Experimental Deformation. Reworded header row to clarify only Analyzed Deformation will be used for Permissible Deformation.</p>
12.	S3.9.5.3, end of section, new topic	<p>Per response to RAI 3.9-290, as modified by response to RAI 3.9-292 S03 (final markups provided in response to RAIs 3.9-301 through 3.9-303), added a section addressing, and entitled, “Steam Dryer Acoustic Loading Effects from Safety-Relief Valve Standpipes and Main Steam Piping”.</p>
13.	S3.9.9, COL Item 3.9.9-1-A	<p>Per response to RAI 3.9-291 S02 (final markups provided in response to RAI 3.9-292 S03), split this COL Item into two subparagraphs, with former information now included in subparagraph (1), and added lead-in phrase, “For the reactor internals, other than steam dryer...”.</p>

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14.	S3.9.9, COL Item 3.9.9-1-A, new subparagraph (2)	<p>Per response to RAIs 3.9-301 through 3.9-303, added:</p> <p>“(2) For the steam dryer, which is classified as a prototype per the guidance in RG 1.20, (a) provide a milestone of no later than 90 days before startup to prepare and provide to the NRC a Steam Dryer Monitoring Plan as described in NEDE-33313P (Ref. 3.9-7) Section 10; (b) submit or reference a steam dryer predicted analysis (for the plant-specific or a sample steam dryer) that concludes the steam dryer will not exceed stress limits with applicable bias and uncertainties and the minimum alternating stress ratio (MASR) of 2.0; (c) describe startup program (with proposed license conditions) that includes appropriate notification points during power ascension, and submittal of the completed analysis of steam dryer data within 90 days following completion of the power ascension testing and monitoring of the steam dryer; and (d) specify periodic steam dryer inspections during refueling outages (Subsection 3.9.2.4).”</p>
15.	S3.9.10, Ref 3.9-7	<p>Per response to RAIs 3.9-301 through 3.9-303, changed reference from:</p> <p>GE Hitachi Nuclear Energy, “ESBWR Steam Dryer Structural Evaluation,” NEDE-33313P-A, Revision 2, Class III (Proprietary), October 2010, and NEDO-33313-A, Revision 2, Class I (Non-Proprietary), October 2010.</p> <p>To:</p> <p><i>[GE Hitachi Nuclear Energy, “ESBWR Steam Dryer Structural Evaluation,” NEDE-33313P, Revision 5, Class III (Proprietary), December 2013, and NEDO-33313, Revision 5, Class I (Non-proprietary), December 2013.]*</i></p>
16.	S3.9.10, new note	<p>Per response to RAI 3.9-292 (final markups provided in response to RAI 3.9-292 S03), added new note for Tier 2*:</p> <p>* References that are bracketed and italicized with an asterisk following the brackets are designated as Tier 2*. Prior NRC approval is required to change Tier 2* information.</p>