RESPONSE TO PUBLIC COMMENTS ON DRAFT STANDARD REVIEW PLAN 9.2.7: CHILLED WATER SYSTEM

On August 5, 2014, a Notice of Opportunity for Public Comment was published in the Federal Register (79 FR 45498) on the proposed Revision 0 to NUREG-0800, Standard Review Plan (SRP), Section 9.2.7. This revision included a draft (new) U.S. Nuclear Regulatory Commission (NRC) SRP 9.2.7 "Chilled Water" to provide staff guidance in reviewing chill water systems of the plant submittals. Comments were received from one (1) organization.

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The NRC staff's review and disposition of the comments are provided in the following Table.

No.	Reference	Comment Submissions	NRC Resolution
1.	General	The draft SRP 9.2.7 differs from the format of other general SRP sections in including specific detailed information regarding RTNSS, rather than referring to SRP 19.3 for the NRC review guidance for RTNSS. Consider if the RTNSS "BOLD" text should be removed from this general SRP for the reasons that were identified in public comments submitted on draft SRP 19.3 and NRC treatment for resolving the comments (ML14035A148; see e.g., Comments 3, 8, 9, 31, 32). The "NRC Resolution" states, in pertinent part: "RTNSS is only addressed by other review guidance that covers structures, systems or components which have the potential for satisfying RTNSS criteria. Such guidance includes SSC specific guidance for RTNSS review applicable to that SSC. Currently, such guidance is only in Design Specific Review Standards, not SRP." In the event that it is the NRC's intent that SRP 9.2.7 and future general SRP revisions (not just the Design Specific Review Standards) include specific detailed guidance regarding RTNSS treatment, GEH provides comments on the RTNSS content where it is inconsistent with guidance	Disagree with the comment. SRP 19.3, "Regulatory Treatment for Nonsafety Related Systems (RTNSS)" provides an overview of the staff's approach to reviewing certain nonsafety-related systems for passive plant designs. Section-specific guidance for implementation of the methodology described in SRP Section 19.3, such as SRP Section 9.2.7, is needed for the staff to perform consistent and thorough reviews of these SSCs classified as RTNSS. RTNSS "BOLD" text was removed in the final revision; guidance for review of nonsafety-related SSCs has

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		in SRP 19.3 or other applicable guidance. In recognition that draft SRP 9.2.7 is not design specific, GEH does not focus on a particular approach used for the ESBWR, but comments in a general context. Note also that GEH provides certain comments that are editorial for NRC's consideration.	been placed into tabular format at the back of each SRP subsection.
2.	9.2.7 Title, Cover Page.	Consider adding "System" to the Title of Section 9.2.7 for consistency with other SRP titles.	Agree with comment.
3.	Areas of Review, Page 9.2.7-2, 7th para, Item 1 and Note 1.	For consistency with SRP 19.3, consider clarifying the term "long term safety" and replacing 168 hrs with 96 hours or redefining the term used. The period from 72 hrs to the following 4 days (24 hr x 4 days) is 96 hours. 168 hrs is the total time from a design-basis event up to 7 days later. SRP 19.3 includes several instances of using "post-72 hour period" but does not use 168 hours. E.g., from SRP 19.3, page 19.3-3: "B. SSC functions relied on to ensure long-term safety (the period beginning 72 hours after a design basis event and lasting the following 4 days) and to address seismic events."	Agree with comment. The meaning of the statement remains the same.
4.	Areas of Review, Page 9.2.7-2, 5th para, Item 2.	Consider revising safety goals to be consistent with the wording in SRP 19.3.1.C (page 19.3-3): Add "each reactor year" after 1.0E-4, add "a" after "and," and remove the comma after 1 x10E-6: 2. Criterion C - Required to meet safety goals of core damage frequency (CDF) less than 1.0E-4 each reactor year and a large release frequency (LRF) less than 1.0E-6, each reactor year.	1. Agree with addition of “a”. 2. Agree with removal of comma after 1x10E-6.
5.	Areas of Review, Page 9.2.7-2, 5th para, Item 2.	Current wording: 'The reliable nonsafety-related system SSCs are evaluated under SRP 17.6, "Maintenance Rule," (Ref. 29). These nonsafety-related system components shall be monitored for performance against licensee-established goals, in a manner sufficient to provide reasonable assurance that these SSCs are capable of fulfilling their intended functions." [Reference] 29. 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants." [See Page 9.2.7-31.] SRP 17.6, Maintenance Rule, is listed as (Ref. 29). This reference is actually 10 CFR 50.65 not SRP 17.6. However, because the sentence is	Change the first sentence to “The reliable nonsafety-related system SSCs are evaluated in accordance with 10CFR50.65, (Ref. 29), and SRP 17.6. *For the final version of this SRP Section NRC has removed reference numbers but left the version.*

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		in regard to the NRC evaluation of reliable nonsafety-related system SSCs, Reference 29 should be changed to refer to SRP 17.6, "Maintenance Rule." That is, SRP 17.6 provides the NRC staff with guidance for its review of the implementation of the regulations in 10 CFR 50.65.	
6.	Areas of Review, Page 9.2.7-3, 3rd para.	Current wording: "The application will include the classification of SSCs, a list of risk-significant SSCs, and a list of RTNSS equipment. Based on this information, the staff will review according to SRP Sections 3.2, 17.4 and 19.3 to confirm the determination of the safety -related and risk- significant SSCs." Consider changing the reference to "SRP Sections 3.2.1, 3.2.2, 17.4, and 19.3" because there is currently no SRP 3.2. The correct references in place of SRP 3.2 should be SRP Section 3.2.1, "Seismic Classification," and SRP 3.2.2, "System Quality Group Classification."	Agree with comment.
7.	Areas of Review, Page 9.2.7-3, 5th para.	Current wording: "RTNSS Criterion C functions address safety goals of core damage frequency. RTNSS C SSCs are considered nonsafety-related defense-in-depth backups (Ref. 25 and 32)." Consider adding "and large release frequency" to be consistent with the earlier statement on Page 9.2.7-2. "RTNSS Criterion C functions address safety goals of core damage frequency and large release frequency."	Agree with comment. *For the final version of this SRP Section NRC has removed reference numbers but left the version.*
8.	Areas of Review, Page 9.2.7-4, 3rd para.	Current wording: "Note: RTNSS 8 SSCs may provide core cooling and heat transfer functions in the post-72 hour period. RTNSS C SSCs may provide for defense-in-depth cooling and heat transfer functions in order to meet NRC safety goal guidelines." For consistency, consider changing "meet NRC safety goal guidelines" to "meet NRC safety goals." These are referred to as Commission goals in SRP 19.3. NOTE: This term "safety goal guidelines" is used in multiple instances and each may need to be changed.	Disagree with the comment. The term “safety goal guidelines” is used in SECY 94-084 and should not be changed.

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9.	Review Interfaces, Page 9.2.7-7, #16.	Current wording: "16. SRP Section 9.4: review of the control room, spent fuel pool area, auxiliary and radwaste area, and engineered safety feature ventilations stems." Item 16 1ists SRP Section 9.4.1, 9.4.2, 9.4.3, and 9.4.5. For clarity, consider adding SRP Section 9.4.4, Turbine Area Ventilation System or noting why it need not be listed. "16. SRP Section 9.4: review of the control room, spent fuel pool area, auxiliary and radwaste area, turbine area ventilation system, and engineered safety feature ventilation systems.	Agree with comment. In order to be complete the Turbine Area Ventilation 9.4 should be included. But in many cases the Turbine Area Ventilation System is a non-safety system.
10.	Page 9.2.7-8, Item 3	The statement, "RTNSS B SSCs are analyzed and designed to withstand adverse effects associated with internal hazards, i.e., those created from conditions inside the plant (e.g., turbine missiles, pipe whip, and flooding)," causes some concern because pipe whip is not specifically considered in the RTNSS design guidance as a hazard (i.e., SECY-94-084 and SECY-95-132). a. Consider removing "pipe whip" and replacing text inside parentheses with "e.g., internal floods" to be consistent with SRP 19.3; Or; b. Consider adding "as applicable based on design or installation" to this statement to cover both internal missile and pipe whip. -Specific to Item a, SRP 19.3 states the following: "The principal areas of the staff's review are listed below: 4. The augmented design standards that must be met by SSCs in the scope of the RTNSS program including seismic design standards, standards for protection against natural phenomena, standards for protection against internal hazards (e.g., internal floods) and standards for assuring that SSC functions can be achieved expeditiously." -The suggestion in Item b above referring to design or installation is because, according to GDC 4, the dynamic effects associated with postulated pipe ruptures may be excluded from the design basis when analyses reviewed and approved by the NRC demonstrate that the probability of fluid system piping rupture is extremely low under conditions consistent with the design basis for the piping. In addition, the probability of internal missiles may be design specific.	Agree with comment. Remove turbine missile and pipe whip from “(e.g., turbine missiles, pipe whip, and flooding)”.

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11.	Page 9.2.7-9, Items 8 and 9,	Associated with ITAAC, the phrase "related to the importance of each function" may need clarification. This appears to be a term that is used in the draft Design Specific Review Standard for the mPower design, DSRS 9.2.1 and DSRS 9.2.2. This term is not used in SRP 19.3 (6/2014) or SRP 14.3 (3/2007). Rather than attempting to explain the scope of ITAAC, consider if it is appropriate to refer to SRP 14.3 instead.	Disagree with comment. This is a graded approach and should remain.
12.	Technical Rationale, Page 9.2.7-14, #5, 2nd para.	Current wording: "GDC 44 applies to this SRP section because the reviewer evaluates the VWS for its capability to continue performing intended safety functions during normal operations, AOOs, and accident conditions, assuming a single failure of a component to perform its intended safety function concurrent with the LOOP." Insert a space between "failure" and "of": "...single failure of a component..."	Agree with comment.
13.	Technical Rationale, Page 9.2.7-14, #7.A.	Current wording: "7. GDC 46 as to design provisions to permit appropriate periodic pressure and functional testing to assure; A. The structure and leaktight integrity of the system(s)' components." Consider removing the stray apostrophe after system(s)', or reword similar to Item B: "A. The structure and leaktight integrity of the system(s)' components." Or "A. The structure and leaktight integrity of the components of the systems."	Agree with comment.
14.	Technical Rationale, Page 9.2.7-14, #7.C.	Current wording: "C. The operability of the system as a whole and, under conditions as close to design as practical, the performance of the full operational sequence that brings the system into operation for reactor shutdown and for LOCAs, including operation of applicable portions of the protection system and the transfer between normal and emergency power sources." Consider adding "basis" after design to be consistent with following paragraph and earlier paragraphs of SRP 9.2.2. "C. The operability of the system as a whole and, under conditions as close to design basis as practical, the performance of the full operational sequence that brings the system into operation for reactor shutdown and	Disagree with comment. This is directly from the GDC. This should remain.

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		for LOCAs, including operation of applicable portions of the protection system and the transfer between normal and emergency power sources."	
15.	Technical Rationale, Page 9.2.7-16, 1st para., 1st bullet	"Maintenance Rule, SRP Section 17.6 (SRP Section 13.4, Table 13.4, Item 17, RG 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." "Considering referencing the table in SRP 13.4 either as "SRP 13.4 Attachment" or as Sample FSAR Table 13.4-x," closing the parentheses and adding "and" as follows: • "Maintenance Rule, SRP Section 17.6 (SRP Section 13.4, Sample FSAR Table 13.4-x. Item 17), and RG 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants."	Agree with comment.
16.	Review Procedures, Page 9.2.7-17, 3. B	Current wording: "B. Cool RTNSS components. RTNSS B: applies, since RTNSS B SSCs are considered risk significant for function the post-72 hour period." Consider rewording to be consistent with the wording in Item "A" above this Item "B" statement: "B. Cool RTNSS components. RTNSS B: applies, since RTNSS B SSCs are considered risk-significant for functions in the post-72 hour period."	Agree with comment.
17.	Review Procedures, Page 9.2.7-20, 5.G.	Current wording: "G. Essential components and subsystems (i.e., those necessary for safe shutdown) can function as required in a LOOP and instrument air systems." For clarification and consistency within the document, consider rewording (in four places) to add "loss of' before "instrument air systems" to the statements: e.g.,: "G. Essential components and subsystems (i.e., those necessary for safe shutdown) can function as required in a LOOP and loss of instrument air systems.	Agree with comment.
18.	Review Procedures, Page 9.2.7-23, 6.F, 4th para.	Current wording: "For RTNSS B and C replaces paragraph 6.K with the following: "Consider editorial changes and correction of the reference for paragraph 6.K to 6.F: "For RTNSS Band C replace paragraph 6.F with the following:"	Agree with comment.

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19.	Review Procedures, Section 7.A: Page 9.2.7-24, 5th para. Page 9.2.7-25, 1st para. (NOTE: It appears that there is a designation of Section 7.B missing.)	It appears that the paragraph on Page 9.2.7-24 that begins with "Essential VWS portions are protected from the effects of floods, hurricanes..." should be marked as Section 7.B: 7. B. "Essential VWS portions are protected from the effects of floods, hurricanes, tornadoes, and internally- or externally-generated missiles. Flood protection and missile protection criteria are evaluated in detail under the SRP sections for SAR Chapter 3. The reviewer uses the procedures in these SRP sections to ensure that the analyses presented are valid. A statement to the effect that the system is located in a seismically qualified Category I structure tornado-, missile-, and flood-protected or that system components are located in individual cubicles or rooms that withstand both flooding and missiles is acceptable. The location and design of the system, structures, and pump rooms (cubicles) are reviewed for whether the degree of protection is adequate." With this "B" section designation, the internal references to paragraph 7.B in paragraph that follow are correct.	Agree with comment.
20.	Review Procedures, Page 9.2.7-26, 10, 1st para.	Current wording: "10. To address concerns about VWS equipment operability and containment integrity during DBA conditions, the primary review organization verifies whether the applicant addresses the following · VWS design provisions consistently with GL 96-06 and GL 96-06, Supplement 1 (Ref. 20):" Listed References on Page 9.2.7-31: "19. NRC Generic Letter 96-06, "Assurance of Equipment Operability And Containment Integrity During Design-Basis Accident Conditions (GL 96-06)," September 30, 1996. 20. NRC Generic Letter 96-06, Supplement 1, “Assurance of Equipment Operability And Containment Integrity During Design-Basis Accident Conditions (GL 96-06, Supplement 1),” November 13, 1997.” For clarity, consider adding reference "(Ref. 19)" for GL 96-06: "10. To address concerns about VWS equipment operability and containment integrity during DBA conditions, the primary review organization verifies whether the applicant addresses the following VWS	Agree with comment. *For the final version of this SRP Section, NRC has removed reference numbers but left the version.*

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		design provisions consistently with GL 96-06 (Ref. 19) and GL 96-06, Supplement 1 (Ref. 20):"	
21.	Evaluation Findings, Page 9.2.7-29, 6 and 7.	Current wording: 6. The applicant meets GDC 45 requirements for inspection of VWSs by VWS design features for in-service inspection of safety-related components and equipment. 7. The applicant meets GDC 46 requirements for testing of VWSs by VWS design features for operational functional testing of the system and its components." For clarity, consider replacing "VWSs" with "VWS" as written throughout SRP, or rewording, e.g.,: "6. The applicant meets GDC 45 requirements for inspection of VWS through system design features for in-service inspection of safety-related components and equipment. 7. The applicant meets GDC 46 requirements for testing of VWS through system design features for operational functional testing of the system and its components."	Agree with comment.
22.	References, Page 9.2.7-31, Reference 31.	Reference 31 is for RG 1.206. "31. RG 1.206, "Combined License Applications for Nuclear Power Plants."" Note that RG 1.206 includes Section CI.9.2.2, "Cooling System For Reactor Auxiliaries (Closed Cooling Water Systems)." In the next revision of RG 1.206 consider modifying Section CI.9.2.2 and adding a new Section CI.9.2.7, “Chilled Water System.”	This has been coordinated with the RG 1.206 working group. *For the final version of this SRP Section NRC has removed reference numbers but left the version.*