

Draft Agenda for STP 3&4 Audit – FSAR Sections 3.7 and Chapter 3.8

Date and Time	Combined (17E30)	3.7 (17E30)	3.8 (17E68)
May 23, 2011 08:30-09:00	Entrance Meeting <ul style="list-style-type: none"> • Introductions • Purpose and Objectives of Audit • Review of Audit Plan and Schedule • Status of NRC Acceptance of RAI Responses • Contacts for NINA and NRC 		
May 23, 2011 09:00-12:00		A. Determination of Seismic Demand for Stability Evaluations: <ul style="list-style-type: none"> • RSW Piping Tunnel • DGFOV (March Clarification Issue 8) • DGFOST [follow-up from March audit – AI 3.7-33 and 3.7-35; Discuss proposed approach, Clarification 8]	A. UHS Basin and Reactor Service Water Pump-house Structural Evaluation B. Recap March Audit Items: <ol style="list-style-type: none"> 1. Design parameter table (3.8-7); 2. Friction coefficients (3.8-8); 3. Evaluation of soil bearing pressures (3.8-9); 4. Wind/hurricane/tornado loadings (3.8-11); 5. Beam shear (3.8-21); 6. V&V SAFE (3.8-22); 7. RSWT wave propagation (3.8-23 & 24); 8. CBA stability calculation (3.8-25)
May 23, 2011 12:00-01:00	Lunch		

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May 23, 2011 01:00-05:00		<p><u>A. Determination of Seismic Demand for Stability Evaluations analyses (Continued)</u></p> <p><u>B. II/I stability evaluation for all non-category I structures (RWB, CBA, TB, SB) with potential to interact with seismic Category I structures (March Clarification Issue 3)</u></p>	<p><u>A. UHS Basin and Reactor Service Water Pump-house Structural Evaluation (Continued)</u></p> <p><u>C. Post Audit Clarification Issues:</u></p> <p>3. Seismic demand for non-seismic II/I structures for stability evaluation</p> <p>4. Friction coefficients reported in Table 3H.6-14 - static or dynamic values.</p> <p>8. Stability Analysis Procedure</p> <p>10. Correlation of acceleration values for SAP2000 analysis with SASSI results</p> <p>12. Apparent wave velocity for buried structures</p> <p>13. Comments on Response to RAI 03.08.04-18 R1 S2 – RW/B Analysis and Design</p> <p>13.1. Seismic analysis assumptions (3H.3.5.1&2)</p> <p>13.2. II/I Analysis and design (3H.3.5.3)</p> <p>13.3. Load Combination for Shear (Steel) (3H.3.4.3.4.2)</p> <p>13.4. Ultimate soil bearing capacity (3H.3.4.2.1)</p> <p>13.5. Tornado Parameters (3H.3.B & 3H.3.4.3.3.1)</p> <p>13.6. Flood Design (3H.3.4.2.3)</p> <p>14. Comments on Response to RAI 03.08.04-30 S1, Extreme wind and tornado loading (3H.6.4.3.2)</p> <p>15. Comments on Response to RAI 03.08.04-35, Foundation bearing pressures reconciliation</p> <p>16. Comments on Response to RAI 03.08.04-19, Supplement 1, Coefficient of Friction</p> <p>17. Miscellaneous Questions from Audit and Reviewers Guide</p> <p><u>D. Outstanding DGFOVS issues (acceleration, amplification of vertical acceleration, static surcharge effects from adjacent buildings, stability evaluation)</u></p>
May 23, 2011 05:00-05:30	NRC Caucus		
May 23, 2011 05:30-06:00	<ul style="list-style-type: none"> Summary of the Day and Action Items Status of NRC Acceptance of RAI Responses 		

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Date and Time	Combined (17E30)	3.7 (17E30)	3.8 (17E68)
May 24, 2011 08:00-12:00		<p>DOE Letter on Subtraction Method</p> <p>C. <u>Effect of High Poisson's Ratio:</u> Effect of high Poisson's ratio on accuracy & stability of calculated transfer functions for seismic SSI analysis of UHS Basin/RSW Pump House (RAI 3.7.1-25)</p> <p>D. <u>RAI responses received prior to May 17, 2011</u></p>	<p>A. <u>UHS Basin and Reactor Service Water Pump-house Structural Evaluation (Continued)</u></p> <p>E. <u>RAI responses received prior to May 17, 2011</u></p>
May 24, 2011 12:00-01:00	Lunch		
May 24, 2011 01:00-05:00		<p>E. <u>V&V Issues:</u></p> <ul style="list-style-type: none"> • SASSI2000 V&V regarding the subtraction method (RAI 3.7.2-29 and Audit Issues 6) [RAI 03.07.02-29 S1] • SASSI 2000 V&V regarding aspect ratio of shell elements (RAI 3.7.2-29 and Audit Issues 7) [RAI 03.07.02-29 S1] • Software V&V for time history generation [RAI 03.07.02-29 S1 and Audit Issue 7] • Clarification Issues 6 and 21 	<p>A. <u>UHS Basin and Reactor Service Water Pump-house Structural Evaluation (Continued)</u></p> <p>F. <u>Radwaste Building design and stability evaluation</u></p>
May 24, 2011 05:00-05:30	NRC Caucus		
May 24, 2011 05:30-06:00	<ul style="list-style-type: none"> • Summary of the Day and Action Items • Status of NRC Acceptance of RAI Responses 		

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Date and Time	Combined (17E30)	3.7 (17E30)	3.8 (17E68)
May 25, 2011 08:00-11:30		<p><u>F. Previous Audit Items:</u></p> <p>a. SSE damping for cracked concrete model of RSWT (RAI 03.07.01-22)</p> <p>b. Justification for analyzing empty fuel tank and soil separation cases for UB soil case only for DGFOVS (RAI 03.07.01-27) [AI 3.7-8]</p> <p>c. Justification for analyzing empty basin and soil separation cases for UB soil case only for UHSB/RSWPH [AI 3.7-8]</p> <p>d. Reconciliation of the impact of using a lower ground water elevation in the SSI analysis (Audit Issue 1) [AI 3.7-7; RAI 03.07.01-27 S3]</p>	<p><u>A. UHS Basin and Reactor Service Water Pump-house Structural Evaluation (Continued)</u></p> <p>G. <u>Stability calculations for other II/I structures (TB, SB, CBA) and safety factor reported in FSAR Table 3H.6-14</u></p>
May 25, 2011 12:00-01:00	Lunch		
May 25, 2011 01:00-05:00		<u>F. Previous Audit Items (Continued):</u>	<p><u>A. UHS Basin and Reactor Service Water Pump-house Structural Evaluation (Continued)</u></p> <p>G. <u>Stability calculations for other II/I structures (TB, SB, CBA) and safety factor reported in FSAR Table 3H.6-14 Continued</u></p>
May 25, 2011 05:00-05:30	NRC Caucus		
May 25, 2011 05:30-06:00	<ul style="list-style-type: none"> Summary of the Day and Action Items Status of NRC Acceptance of RAI Responses 		

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Date and Time	Combined (17E30)	3.7 (17E30)	3.8 (17E68)
May 26, 2011 08:00-11:30		<u>F. Previous Audit Items (Continued):</u> e. Seismic soil pressures on UHSB/RSWPH below-grade walls f. Local response amplifications and design of UHS Basin submerged columns due to hydrodynamic effects (3.7.2-28) [AI 3.7-15 and 3.7-18] g. 2-D SSSI analysis of (RWB+RSWT+RB) and (UHSB/RSWPH+RSWT+DGFOSV-1C+RB) using UB backfill (Audit Issue 2) [AI 3.7-6, 3.7-8, and 3.7-36]; RAI 03.07.01-27 S3] h. Revised specification for DGFOS tank rigidity requirements [AI 3.7-26] i. Any other outstanding items from March audit*	<u>H. Design of DGFOT (seismic input from SSI, seismic and wind and tornado loadings, flood protection, seismic wave propagation effects, seismic gasp, and stability evaluation)</u>
May 26, 2011 12:00-01:00	Lunch		
May 26, 2011 01:00-05:00		<u>F. Previous Audit Items (Continued)</u>	<u>H. Design of DGFOT (Continued)</u>
May 26, 2011 05:00-05:30	NRC Caucus		
May 26, 2011 05:30-06:00	<ul style="list-style-type: none"> Summary of the Day and Action Items Status of NRC Acceptance of RAI Responses 		

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Date and Time	Combined (17E30)	3.7 (17E30)	3.8 (17E68)
May 27, 2011 08:00-9:00	Review Plan and Scope of the Day		
May 27, 2011 09:00-11:00	Finalize audit findings and complete any unfinished items		
May 27, 2011 11:00-12:00	NRC Caucus		
May 27, 2011 12:00-01:00	Lunch		
May 27, 2011 01:00-02:00	Exit Meeting Summary of Audit <ul style="list-style-type: none"> • Open Items • Action Items • Status of NRC Acceptance of RAI Responses 		

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ISSUES NOT LISTED IN AGENDA

NRC Actions from March 2011 Audit

- 3.7-XX Perform sensitivity analysis related to Poisson's Ratio
- 3.8-5 RAI 03.08.04-32, NRC to compare response to other applicant responses.

NRC Actions from March 2011 Audit Report

- 3.8 D2 5. “The accelerations are taken from the SSI analysis of the vault. A reference is given in the report from where the accelerations were taken. As this information was not verified during the audit, the staff plans to verify the source and the acceleration values during the next audit.”
- 3.8 K. Computer Software Validation and Verification, PCACOLUMN, Version 4.10
ACI 349-97 used in STP 3&4 design is not covered by this V&V, however it was assured that results from PCACOLUMN are evaluated in the calcs against the special code requirements in ACI 349-97. The staff needs to review in further detail how this assurance is implemented. This will be included in the next audit.
- 3.8 I 8. Calculation no. U7-RSW-S-CALC-DESN-6001, Revision D, “Basic Structural Design of Reactor Service Water (RSW) Tunnel”.
The staff noted that several areas of design of the tunnel were not complete at time of the audit, e.g., global tornado missile impact evaluation for the access region of the tunnel, tunnel walls in the corner region, access covers, etc. (See Action Item 3.8-43)

NINA Actions from March 2011 Audit Report

- 3.7 Calc U7-UHS-C-CALC-DESN-6001, Rev. B, “Soil Structure Interaction Analysis of UHS Pump House Buildings, STP 3 & 4 for Full Basin (Licensing)”
Discrepancies in the reported frequencies for the full basin condition in Table 3 were noted. The applicant was asked to check this table and make corrections, as necessary. (See Action Item 3.7-49)