

STP UNIT 3 & 4 –Spent Fuel Storage Racks

RAI STATUS TABLE

(Prepared by BNL, 05/08/2012)

RAI No.	RAI item	NINA Response Date	BNL Assessment Date	Action	Current Status	Comment
09.01.02-2 (RAI No.5685, RAI Letter #377) Provide more descriptive information on pools, racks and fuel-handling system.	a	6/23/11 Revised 11/14/2011	09/05/2011 12/22/2011		R	Response to follow-up RAI 09.01.02-11, item a, is included in this revised response.
	b	11/14/2011	12/22/2011		Closed/U	Tied to resolution of sliding displacement issue. See follow-up RAI-20 and RAI-30, and Audit Action Items #4, #5, and #6.
	c	6/23/11 Revised 11/14/2011	09/05/2011 12/22/2011		R	NINA included a material table in the technical report revision.
	d	6/23/11 Revised 11/14/2011	09/05/2011 12/22/2011		R	NINA included in the technical report the statement that all racks for new and spent fuel will be permanently located in the spent fuel storage pool.
	e	6/23/11 Revised 11/14/2011	09/05/2011 12/22/2011		R	NINA included information about tie joints between adjacent cell walls in the technical report revision.
	f	6/23/11	09/05/2011		R	RAI item regarding new fuel racks is no longer applicable.
	g	6/23/11 Revised 11/14/2011	09/05/2011 12/22/2011		R	NINA included updated support plate configuration in the technical report revision.
	h	6/23/11	09/05/2011			

		Revised 11/14/2011	12/22/2011		R	Response to follow-up RAI 09.01.02-11, item h, is included in this revised response.
	i	6/23/11 Revised 11/14/2011	09/05/2011 12/22/2011		R	NINA included updated welding information in the technical report revision.
09.01.02-3 (RAI No.5685, RAI Letter #377)	a	11/14/2011	12/22/2011		U	Response acceptable. Affected by re-analysis?
Provide additional information on loads and load combinations	b	6/23/11 Revised 11/14/2011	09/05/2011 12/22/2011		R	NINA included updated information on temperatures in the technical report revision.
	c	6/23/11 Revised 11/14/2011	09/05/2011 12/22/2011		Closed/U	Response to follow-up RAI 09.01.02-12, item c, is included in this revised response. Tied to resolution of weld stress limit based on base metal properties. See follow-up RAI-28.
09.01.02-4 (RAI No.5685, RAI Letter #377)	a	8/1/11 Revised 11/14/2011	09/05/2011 12/22/2011		R	See response to follow-up RAI 09.01.02-13
Provide additional information on fuel drop analyses.	b	8/1/11	09/05/2011		R	Response provides sufficient clarification.
	c	8/1/11	09/05/2011		R	Response provides sufficient clarification.
	d	8/1/11 Revised 11/14/2011	09/05/2011 At audit		R	Staff audited back-up calculations.
	e	8/1/11 Revised	09/05/2011 At Audit		R	NINA provided additional information in the

		11/14/2011				Technical Report, Revision 2. Staff audited back-up calculations.
09.01.02-5 (RAI No.5685, RAI Letter #377) Provide more information on modeling and analysis.	a	6/23/11	09/05/2011		R	RAI item regarding new fuel racks is no longer applicable.
	b	6/23/11	09/05/2011		R	Response provides sufficient clarification.
	c	11/14/2011	12/22/2011		Closed/U	Tied to resolution of impact stiffness issue. See follow-up RAI-24, and Audit Action Item #13. Affected by re-analysis?
	d	6/23/11 Revised 11/14/2011	09/05/2011 12/22/2011		R	Response to follow-up RAI 09.01.02-14, item d, is included in this revised response. Response provides sufficient clarification.
	e	6/23/11 Revised 11/14/2011	09/05/2011 12/22/2011		Closed/U	Response to follow-up RAI 09.01.02-14, item e, is included in this revised response. Tied to resolution of fluid coupling issue. See follow-up RAI-22, and Audit Action Item # 7.
	f	6/23/11	09/05/2011		U	Affected by re-analysis. New time step.
	g	11/14/2011	12/22/2011		Closed/U	Tied to resolution of fuel assembly evaluation issue. See follow-up RAI-10 and RAI-25, and Audit Action Item # 17.
	h	6/23/11	09/05/2011		R	Response provides sufficient clarification.
	i	11/14/2011	12/22/2011		R	Response describes modeling and design calculation method for the clevis and pin.
	j	6/23/11	09/05/2011			

		Revised 11/14/2011	12/22/2011		R	NINA included results for 0.5 coefficient of friction in technical report revision
	k	6/23/11 Revised 11/14/2011	09/05/2011 12/22/2011		R	NINA clarified in the Technical Report revision that simultaneous application of 3 directional seismic loading and algebraic summation are used.
	l	6/23/11 Revised 11/14/2011	09/05/2011 12/22/2011		R	NINA included an explanation of ANSYS modeling of the welds in technical report revision.
	m	11/14/2011	12/22/2011		R	Response provides sufficient clarification.
	n	11/14/2011	12/22/2011		Closed/U	Tied to resolution of partially loaded racks issue. See follow-up RAI-30, and Audit Action Items #4 and #5.
	o	6/23/11	09/05/2011 At Audit		R	Staff audited computer code validation process.
09.01.02-6 (RAI No.5685, RAI Letter #377) Provide more information on design checks.	a	6/23/11 Revised 11/14/2011	09/05/2011 12/22/2011		Closed/U	Response to follow-up RAI 09.01.02-15, item a, is included in this revised response. Loads on base plate-to-support plate fillet welds are still an open technical issue. Need to resolve moment arm for leveling screw. See follow-up RAI-18, item 2, and Audit Action Item #14.
	b	11/14/2011	12/22/2011		U	Response provides sufficient clarification. Affected by re-analysis?
	c	11/14/2011	12/22/2011		U	Issue is meeting Code allowable stress limits

						<p>for the cell wall and cell wall-to-base plate fillet welds.</p> <p>Tied to resolution of local stress on cell wall due to fuel assembly impact, and several other technical issues that may affect the final predictions of stress on the cell walls and the fillet welds.</p> <p>The resolution of several follow-up RAIs and several Audit Action Items is necessary before this issue can be resolved.</p> <p>Affected by re-analysis?</p>
	d	11/14/2011	12/22/2011		U	<p>Tied to resolution of the cell wall buckling evaluation.</p> <p>Audit Action Item #19 discusses NINA's commitment to prepare a white paper on the cell wall buckling evaluation.</p> <p>Affected by re-analysis?</p>
	e	11/14/2011	12/22/2011		R	Response provides sufficient clarification.
	f	6/23/11	09/05/2011		R	RAI item regarding new fuel racks is no longer applicable.
09.01.02-7 (RAI No.5685, RAI Letter #377)	-	6/23/11			Closed/R	See follow-up RAI-16, for resolution.
09.01.02-8 (RAI No.5685, RAI Letter #377)	-	11/14/2011			Closed/U	Staff questioned the use of a 10 degree temperature difference.

Provide information regarding thermal stress evaluation for the spent fuel racks.						See follow-up RAI-29 for proposed resolution.
09.01.02-9 (RAI No.5685, RAI Letter #377) Provide additional information about the seismic loading for the nonlinear time history analysis of the spent fuel racks.	a	6/23/11 8/17/11 (Rev. 1) 01/18/2012 (DRAFT Rev. 2)	09/05/2011 01/19/2012 (At Audit)	NINA	AIP	When NINA formally submits the RAI response, this becomes Resolved. Staff audited the related calculation. Also see RAI - 21.
		02/09/2012 (FORMAL Rev. 2)	02/13/2012		R	NINA formally submitted Revision 2 to the RAI response. NINA deleted its Revision 1 RAI response commitment to include the check of the 3 synthetic time histories against SRP acceptance criteria in Technical Report Revision 2. Instead, a statement that the criteria are satisfied has been included in Technical Report Revision 2. BNL conducted an independent check of the time history input files, and concluded that they are technically acceptable because they meet SRP acceptance criteria. The staff initially had several technical concerns.
	b	6/23/11 8/17/11 (Rev. 1) 01/18/2012 (DRAFT Rev. 2)	09/05/2011 01/19/2012 (At Audit)	NINA	AIP	When NINA formally submits the RAI response, this becomes Resolved. Staff audited the related calculation. Also see RAI - 21.

		02/09/2012 (FORMAL Rev. 2)	02/13/2012		R	<p>NINA formally submitted Revision 2 to the RAI response. NINA deleted its Revision 1 RAI response commitment to include the check of the 3 synthetic time histories against SRP acceptance criteria in Technical Report Revision 2. Instead, a statement that the criteria are satisfied has been included in Technical Report Revision 2.</p> <p>BNL conducted an independent check of the time history input files, and concluded that they are technically acceptable because they meet SRP acceptance criteria. The staff initially had several technical concerns.</p>
	c	6/23/11 8/17/11 (Rev. 1)	09/05/2011		R	Rev. 1 Response provides sufficient clarification.
	d	6/23/11 8/17/11 (Rev. 1)	09/05/2011		R	Rev. 1 Response provides sufficient clarification.
	e	6/23/11	09/05/2011		R	Rev. 0 Response provides sufficient clarification.
	f	6/23/11 8/17/11 (Rev. 1)	09/05/2011		R	Rev. 1 Response provides sufficient clarification. (BNL conducted independent check.)
09.01.02-10 (RAI No.5987, RAI Letter #412)	a	11/14/2011	11/15/2011	NINA	U	Response is too vague, short of quantitative detail. It is not clear that the capacity estimate is for the specific DCD fuel assembly and exactly how it was determined. Additional quantitative information needed. Follow-up RAI will be prepared. Require a revised response prior to audit of detailed calculations/test
	b	11/14/2011	11/15/2011	NINA	U	
	c	11/14/2011	11/15/2011	NINA	U	
	d	11/14/2011	11/15/2011	NINA	U	
	e	11/14/2011	11/15/2011	NINA	U	
Provide information on Spent Fuel Assembly Integrity.						

						<p>results that establish the fuel assembly impact load capacity. Audit should be confirmatory, not exploratory.</p> <p>Follow-up RAI-25 below continues the assessment of fuel assembly integrity for seismic loading.</p> <p>See Audit Action Item #17.</p> <p>Will be reviewed along with response to RAI-25 and audit Action Item #17.</p>
09.01.02-11 (RAI No.6070, RAI Letter #413)	a	11/14/2011			Closed/R	Applicant revised the response to original RAI 09.01.02-2, item a, to address follow-up RAI-11, item a.
Follow-up RAI for RAI 09.01.02-2, items a and h	h	11/14/2011			Closed/R	Applicant revised the response to original RAI 09.01.02-2, item h, to address follow-up RAI-11, item h.
09.01.02-12 (RAI No.6070, RAI Letter #413)	c	11/14/2011			Closed/U	Applicant revised the response to original RAI 09.01.02-3, item c, to address follow-up RAI-12, item c
Follow-up RAI for RAI 09.01.02-3, item c						See follow-up RAI-28.
09.01.02-13 (RAI No.6070, RAI Letter #413)	a	11/14/2011	12/22/2011		R	NINA provided acceptable responses to the follow-up questions, and made appropriate additions to Rev. 2 of the Technical Report.
Follow-up RAI for RAI 09.01.02-4, item a						
09.01.02-14 (RAI No.6070, RAI Letter #413)	d	11/14/2011			Closed/R	Applicant revised the response to original RAI 09.01.02-5, item d, to address follow-up RAI-14, item d.
Follow-up RAI for RAI 09.01.02-5, items d and e	e	11/14/2011			Closed/U	Applicant revised the response to original RAI 09.01.02-5, item e, to address follow-up RAI-14, item e.
						See follow-up RAI-22, and Audit Action Item # 7.
09.01.02-15 (RAI No.6070, RAI Letter #413)	a	11/14/2011			Closed/U	Applicant revised the response to original RAI 09.01.02-6, item a, to address follow-up RAI-

<p>Follow-up RAI for RAI 09.01.02-6, item a</p>						<p>15, item a.</p> <p>See follow-up RAI-18, item 2, and Audit Action Item #14.</p>
<p>09.01.02-16 (RAI No.6070, RAI Letter #413)</p> <p>Follow-up RAI for RAI 09.01.02-7</p>	-	11/14/2011	12/22/2012		R	<p>NRC staff accepts NINA's follow-up response on QA requirements and periodic inservice inspection. Commitment to QAPD Part 2 and Maintenance Rule are judged to be sufficient.</p>
<p>09.01.02-17 (RAI Tracking No. 6263; RAI Letter No. 415, 01/09/2012)</p> <p>Typos in Technical Report, Rev.2</p>		01/18/2012 (DRAFT)	01/19/2012 (AT AUDIT)	NINA	AIP	<p>When NINA formally submits the RAI response, this becomes Confirmatory. When NINA formally submits the Technical Report revision, this becomes Resolved.</p>
		02/09/2012 (FORMAL)	02/13/2012	NINA/ Staff	AIP	<p>NINA formally submitted the RAI response, consistent with the DRAFT response that the staff reviewed during the 01/17-20/2012 audit. The RAI response is acceptable.</p> <p>At the follow-up audit, the Staff will confirm that the transformation of the time history input to the "model" coordinate system was done correctly. Following the audit, status will be Confirmatory, unless a problem is identified.</p>
<p>09.01.02-18 (RAI Tracking No. 6263; RAI Letter No. 415, 01/09/2012)</p> <p>Six questions on Section 8.2 of technical report, Rev.2</p>		01/18/2012 (DRAFT)	01/19/2012 (AT AUDIT)	NINA	AIP	<p>Items 1,3,5,6</p> <p>When NINA formally submits the RAI response, this becomes Confirmatory. When NINA formally submits the Technical Report revision, this becomes Resolved.</p>
					U	<p>Item 2:</p> <p>The leveling screw evaluation is still under review. See Audit Action Item #14.</p>
					U	<p>Item 4:</p> <p>Load application for the localized fuel assembly impact is still under review. See Audit Action Item #15.</p>

		03/06/2012			U	Assessment on hold. Affected by re-analysis
09.01.02-19 (RAI Tracking No. 6263; RAI Letter No. 415, 01/09/2012) Issue of fuel assemblies protruding above top of racks.		01/18/2012 (DRAFT)	01/19/2012 (AT AUDIT)	NINA	U	NINA will revise its draft response and the Technical Report for the drop analysis. Audit Action Items #1, #11, and #12
		02/28//2012 (FORMAL)	03/05/2012	NINA/ Staff	U	The applicant's response addresses the staff's questions. The staff will review the applicability of Appendix 6 of AISC "Specification for Structural Steel Buildings" 13th Ed, 2005 as the basis for concluding that the cell wall will successfully brace the lateral buckling deflection of the fuel assembly, without damage to the cell wall. On the basis that the neutron absorber material (aluminum clad) is ductile, the staff accepts the applicant's conclusion that no unacceptable damage would occur to the neutron absorber material during the free fall of a fuel assembly through a storage cell. WCAP-17375-P will be revised to clarify the description of the height of the rack vs. the fuel, and revise the discussion of the criticality effect of the dropped bundle accordingly. Review on hold; not affected by re-analysis.
09.01.02-20 (RAI Tracking No. 6263; RAI Letter No. 415, 01/09/2012) Issue of subsequent gap changes between racks and pool wall.		01/18/2012 (DRAFT)	01/19/2012 (AT AUDIT)	NINA	U	NINA will revise its draft response, to explain how 10 CFR 50.59 would be triggered. Audit Action Item #6.
		02/08/2012 (FORMAL)	02/08/2012	NINA	AIP	NINA revised its draft response, to explain how 10 CFR 50.59 would be triggered, per Audit

		02/28/2012 (Formal Revision)	03/05/2012	NINA/ Staff	U	<p>Action Item #6. Technical Report Figure 4-1 needs to be revised. Also, staff recommends that part of the RAI response be included in the Technical Report for clarity and completeness.</p> <p>The revised response adds the statement <u>“This assumption will be documented in Section 3 of the next revision of the Technical Report.”</u></p> <p>The staff notes that the statement “Such a review would be documented using approved procedures in accordance with the applicant's/owner's NRC-approved Quality Assurance program.” may not be applicable to the spent fuel racks, because they have been designated as non-safety-related. They have their own unique QA specifications.</p> <p>There appears to be a need for an ITAAC, clearly stating that the as-built gaps between the spent fuel storage racks and the spent fuel pool walls must be analyzed to confirm that the response to seismic loading is enveloped by the design-basis seismic analysis results that use maximum gaps.</p> <p>To be resolved with NINA.</p>
09.01.02-21 (RAI Tracking No. 6263; RAI Letter No. 415, 01/09/2012)		01/18/2012 (DRAFT)	01/19/2012 (AT AUDIT)	NINA	AIP	When NINA formally submits the RAI response, this becomes Resolved. Staff audited the related calculation. Also see RAI - 9.
Change in prior RAI commitment to include additional seismic input information in the Technical report		02/08/2012 (FORMAL)	02/08/2012		R	NINA formally submitted the draft RAI response.
09.01.02-22 (RAI Tracking No. 6263; RAI Letter No. 415, 01/09/2012)		01/18/2012 (DRAFT)	01/19/2012 (AT AUDIT)	NINA	U	NINA will revise its draft response, to address changes in the hydrodynamic effects due to large sliding displacements.

<p>Issue of fluid-structure coupling; hydrodynamic mass calculation.</p>		<p>02/22/2012 (FORMAL)</p>	<p>02/28/2012</p>	<p>NINA</p>	<p>U</p>	<p>Audit Action Item #7</p> <p>Using the initial rack-to-wall gaps to calculate the hydrodynamic coupling to the pool walls, without a quantitative sensitivity study, is not acceptable.</p> <p>The quote from NUREG/CR-5912 is taken out of context. The statement is from a technical paper that was reviewed by the author of NUREG/CR-5912. The statement in the technical paper relates to small initial gaps, such as fuel-to-storage cell.</p> <p>The importance of the changing gaps during the seismic response is its potential effect on the structural response of the racks. Reductions in the sliding displacements are not significant because the current analysis does not predict any rack-to-wall impacts, in spite of the large predicted sliding displacements.</p> <p>To adequately address the effect of significant changes in the rack-to-wall gaps during the seismic response, a series of sensitivity analyses can be performed in order to envelope the worst case response. This is an accepted approach when there is significant uncertainty associated with a specific behavioral effect in a complex analysis. There are numerous precedents for the use of sensitivity analyses in order to resolve the nonlinear response of free-standing spent fuel storage racks immersed in the spent fuel pool when subjected to seismic excitation.</p> <p>U</p> <p>Affected by re-analysis</p>
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09.01.02-23 (RAI Tracking No. 6263; RAI Letter No. 415, 01/09/2012) Differences between design and analytical model.	01/18/2012 (DRAFT)	01/19/2012 (AT AUDIT)	NINA	AIP	When NINA formally submits the RAI response, this becomes Resolved.
	02/08/2012 (FORMAL)	02/08/2012	NINA	AIP	Staff recommends that the RAI response be included in the Technical Report.
09.01.02-24 (RAI Tracking No. 6263; RAI Letter No. 415, 01/09/2012) Selection of impact stiffness values	01/18/2012 (DRAFT)	01/19/2012 (AT AUDIT)	NINA	U	Audit Action Item #13 should identify discussion with the Peer Review Group, and revision of the RAI response to provide a stronger technical basis for not conducting additional sensitivity analyses.
	02/28/2012 (FORMAL)	03/05/2012	Staff	AIP	The applicant has provided its argument that additional sensitivity studies are not needed, in order to ensure that the worst-case effect of TGSIS on the racks' seismic response has been considered in the design calculations. The staff accepts the applicant's conclusion, on the basis of the results comparison discussed, and the new information cited for a 9x9 BWR fuel assembly. The staff will audit the published test data from Nuclear Fuel Industries, Ltd. (NFI).
09.01.02-25 (RAI Tracking No. 6263; RAI Letter No. 415, 01/09/2012) Follow-up to RAI-10, on fuel assembly evaluation for seismic loads	01/18/2012 (DRAFT)	01/19/2012 (AT AUDIT)	NINA	U	Audit Action Item #17
	ON HOLD			U	Affected by re-analysis
09.01.02-26 (RAI Tracking No. 6263; RAI Letter No. 415, 01/09/2012) Clarification of properties of fuel assemblies used for evaluation.	01/18/2012 (DRAFT)	01/19/2012 (AT AUDIT)	NINA	AIP	Track under RAI-25
	02/08/2012 (FORMAL)	02/08/2012	NINA	AIP	Staff recommends that the RAI response be included in the Technical Report.

<p>09.01.02-27 (RAI Tracking No. 6263; RAI Letter No. 415, 01/09/2012)</p> <p>TP304/TP304L dual certification</p>		<p>01/18/2012 (DRAFT)</p> <p>02/08/2012 (FORMAL)</p>	<p>01/19/2012 (AT AUDIT)</p> <p>02/08/2012</p>	<p>NINA</p>	<p>AIP</p> <p>R</p>	<p>When NINA formally submits the RAI response, this becomes Resolved.</p> <p>NINA formally submitted the draft RAI response.</p>
<p>09.01.02-28 (RAI Tracking No. 6263; RAI Letter No. 415, 01/09/2012)</p> <p>Follow-up to RAI-12.</p>		<p>01/18/2012 (DRAFT)</p> <p>02/09/2012 (FORMAL)</p>	<p>01/19/2012 (AT AUDIT)</p> <p>02/13/2012</p>	<p>NINA</p> <p>NINA</p>	<p>AIP</p> <p>U</p>	<p>When NINA formally submits the RAI response, this becomes Resolved</p> <p>NINA formally submitted the RAI response, consistent with the DRAFT response that the staff reviewed during the 01/17-20/2012 audit.</p> <p>The response provides a design check for the shear stress in base metal (base plate) for the stuck fuel assembly load case. The staff notes that the calculation for the stuck fuel assembly analysis is based on the conservative assumption that only two cells of the spent fuel storage rack resist the stuck fuel assembly load. The staff determined that the RAI response adequately addresses shear loading in the base metal, and is acceptable.</p> <p>The staff recommends that the applicant (1) include this response in the Technical Report, and (2) change the title "Base Metal Shear Allowable" on top of Page 8-24 of the Technical Report Revision 2. This title is appropriate for the design calculation provided in the response to RAI-28, but it is not appropriate for the calculation presented in the technical report.</p> <p>Status will become Confirmatory when the applicant formally submits its proposed changes to the technical report.</p> <p>NINA action.</p>

<p>09.01.02-29 (RAI Tracking No. 6263; RAI Letter No. 415, 01/09/2012)</p> <p>Follow-up to RAI-8, on temperature effects of isolated hot cell.</p>	<p>01/18/2012 (DRAFT)</p>	<p>01/19/2012 (AT AUDIT)</p>	<p>NINA</p>	<p>AIP</p>	<p>50 degree temperature difference replaces the original 10 degree temperature difference. Thermal stress still acceptable.</p> <p>When NINA formally submits the RAI response, this becomes Confirmatory. When NINA formally submits the Technical Report revision, this becomes Resolved.</p>
	<p>02/08/2012 (FORMAL)</p>	<p>02/08/2012</p>	<p>NINA/ Staff</p>	<p>U</p>	<p>Staff expected numerical details, including the proposed revision to the Technical Report. The formal response does not provide this information.</p> <p>Staff will review applicable updated calculations at the follow-up audit.</p> <p>NINA needs to submit the proposed revision to the Technical report to the staff for review.</p> <p>Following successful completion of these 2 activities, status will become Confirmatory.</p>
	<p>02/28/2012 (Revised Formal)</p>	<p>03/05/2012</p>	<p>NINA/ Staff</p>	<p>U</p>	<p>The thermal stress calculation will be audited by the staff.</p> <p>The stated compressive buckling stress allowable of 17.3 ksi needs to be confirmed. If it changes, then it needs to be corrected in the response.</p> <p>Follow up review and audit needed.</p>
<p>09.01.02-30 (RAI Tracking No. 6263; RAI Letter No. 415, 01/09/2012)</p> <p>Issue of large sliding displacements and unexpected trend with friction coefficient.</p>	<p>01/18/2012 (DRAFT)</p> <p>ON HOLD</p>	<p>01/19/2012 (AT AUDIT)</p>	<p>NINA</p>	<p>U</p> <p>U</p>	<p>Audit Action Items #4 and #5</p> <p>Affected by re-analysis</p>

<p>09.01.02-31 (RAI Tracking No. 6263; RAI Letter No. 415, 01/09/2012)</p> <p>Issue of cell-to-cell coupling; lack of rotational compatibility.</p>		<p>01/18/2012 (DRAFT)</p> <p>03/06/2012</p>	<p>01/19/2012 (AT AUDIT)</p>	<p>NINA</p>	<p>U</p> <p>U</p>	<p>Audit Action Items #8 and #9</p> <p>Review on hold.</p> <p>Affected by re-analysis</p>
<p>09.01.02-32 (RAI Tracking No. 6263; RAI Letter No. 415, 01/09/2012)</p> <p>Modeling of local fuel assembly impact on rack cell walls.</p>		<p>01/18/2012 (DRAFT)</p> <p>ON HOLD</p>	<p>01/19/2012 (AT AUDIT)</p>	<p>NINA</p>	<p>U</p> <p>U</p>	<p>Audit Action Items #15 and #18</p> <p>Affected by re-analysis</p>
<p>Audit of calculation # CN-MRCDA-11-23</p> <p>Further explanation needed for buckling assessments, and 2 other issues,</p>		<p>-</p> <p>03/12/2012</p>	<p>01/20/2012 (AT AUDIT)</p>	<p>NINA</p>	<p>U</p> <p>U</p>	<p>Audit Action Item #19</p> <p>NINA to submit white paper on buckling assessment, to address staff concerns identified on 01/20/2012. Also address staff questions on page 80 and page 87 of calculation.</p> <p>Review on hold.</p> <p>Affected by re-analysis?</p>
<p>Define the basis for the assumed gap between the fuel assembly and the top of the rack cell, currently set at 0.05".</p>		<p>-</p> <p>03/12/2012</p>	<p>01/19/2012 (AT AUDIT)</p>	<p>NINA</p>	<p>U</p> <p>U</p>	<p>Audit Action Item #10</p> <p>Review on hold. To be reviewed later.</p>
<p>Re-convene Peer Review Group, to discuss (1) implementation of the 16 group recommendations; and (2) the remaining technical issues from the 01/17-20/2012 Audit.</p>		<p>-</p> <p>02/22/2012</p>	<p>01/19/2012 (AT AUDIT)</p> <p>02/28/2012</p>	<p>NINA</p> <p>NINA</p>	<p>U</p> <p>U</p>	<p>Audit Action Item #16</p> <p>NINA submitted the minutes of the Peer Review Meeting, held on February 1, 2012.</p> <p>The Meeting minutes do <u>not</u> resolve any RAI or any other unresolved technical issue raised during the Audit.</p>

					<p>The staff has the following comments on the Peer Review Group recommendations:</p> <p>(1) The staff is interested in the review and disposition of the 16 original questions raised in May 2011 by the Peer Review team. In the 02/22/2012 letter above, Peer Review team Recommendation #2 states “The design team should draft a letter documenting their actions to close out the original 16 peer review action items. The design team should consider updating their NRC open items tracking spreadsheet (which addresses the action items) to document their closure in the letter. The letter will be sent to the Peer Review team for comment/approval.” The staff requests a copy of the design team letter and the Peer Review team written comment/approval, when available.</p> <p>(2) Recommendation #3 appears to miss the issue raised by the staff. This is not a design philosophy issue. It is a response issue – actual vs. assumed. By releasing rotational compatibility, there is by definition no moment developed about a vertical axis. The real structure is not built with a piano hinge. It is an integral connection, capable of transmitting some moment. The effect of this small moment on the integrity of this unusual connection is the issue here.</p> <p>(3) For Recommendation #4, see the staff assessment of the revised response to RAI-22.</p> <p>(4) The staff finds a “qualitative” argument, per Recommendation #5, to be unacceptable. Use numbers to address this.</p> <p>(5) The staff does NOT understand</p>
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						<p>Recommendation #7. What impact is being addressed? Explain the statement “The team also recommends distributing the total impact force across all of the fuel grids.”</p> <p>(6) The staff needs further explanation of Recommendation #8.</p> <p>(7) Recommendation #9 is insufficient to address the issue of large sliding displacements. The staff recommends scaling the seismic input to a level comparable to other submittals, and re-analyzing. This would validate the applicant’s argument that the large sliding displacements are due to significantly higher seismic loading for STP vs. other applications.</p> <p>(8) The staff does NOT understand Recommendation #12: “The peer review team agrees it is acceptable to design a lead-in-guide at the top of the cell to maintain a .05” gap between the fuel and the cell wall at the top of the rack.” More specific details are needed. Demonstrating that this has been achieved may be a possible ITAAC.</p>
					U	Affected by re-analysis?

R- Resolved.

U - Unresolved.

C - Confirmatory (Response acceptable; draft FSAR and/or Report revision submitted; FSAR and/or Report formal revision needed.)

AIP – Agreed in Principle (Staff and Applicant agree on a path toward resolution; additional review needed to achieve resolution.)

Closed/U – Unresolved, but closed; further evaluation of technical issue is under the referenced RAI(s) and/or Audit Action Item(s).