

APPENDIX B, TABLE B.2.2

**DISPOSITION OF NEI COMMENTS
ON CHAPTER III OF GALL REPORT**

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Table B.2.2: Disposition of NEI Comments on Chapter III of GALL Report

Comment Number	Item Number	Comment/Proposed Change	Basis for Comment	NRC Disposition
G-III A1-1	III A1.1, aggressive chemical, page III A1-7	Evaluation and technical basis should include the information from the preceding item on the aggressive environment limits. Further evaluation should be changed to yes, if exceed aggressive chemical limits.	Limits have been previously documented and should be included here to be consistent.	The only concern for aging degradation of below-grade concrete is restricted to the presence of a below-grade aggressive environment, which may lead to chemical attack of the concrete and corrosion of embedded steel. Specific criteria that define an aggressive below-grade environment have been added to GALL IIIA. In the presence of an aggressive below-grade environment, a plant-specific aging management program is needed and must be described in the license renewal application. GALL IIIA was revised to address this comment.
G-III A1-2	III A1.1, Concrete degradation	There appears to be a mix-up in several table entries between Below Grade/Exterior and Above Grade/Interior. The criteria for aggressive chemical attack are for aggressive groundwater (below grade), not for above grade/interior surfaces.		See NRC disposition of NEI Comment G-III A1-1 in this Appendix B, Table B.2.2.
G-III A1-3	III A1.1, erosion of porous concrete, page III A1-8	Delete sections on porous concrete throughout the document. Including III A2.1, page III A2-8; III A3.1, page III A3-8; III A5.1, page III A5-8; III A6.1, page III A6-8; III A7.1, page III A7-8; III A8.1, page III A8-8.	This is not a generic aging effect. Erosion of porous concrete is a current licensing issue being handled on a site-specific basis and as such should not be included in this document.	Many entries in GALL address aging effects that do not generically apply to all NPPs. It is appropriate to include it, so that affected plants address it for the period of extended operation. GALL IIIA was not revised to address this comment.

Table B.2.2: Disposition of NEI Comments on Chapter III of GALL Report (continued)

Comment Number	Item Number	Comment/Proposed Change	Basis for Comment	NRC Disposition
G-III.A1-4	III A1.1, Erosion of Porous Conc, page III A1-8	If the previous comment is not incorporated, then change Material from "Reinforced Concrete" to "Porous Concrete".	Provides a more accurate description.	The concern is for loss of strength, cracking and differential settlement of the foundation, which is reinforced concrete. However, for completeness, GALL IIIA has been revised to add "subfoundation" and "porous concrete" in the structural component and material columns, respectively. GALL IIIA was revised to address this comment.
G-III.A1-5	III A1.2, corrosion, page IIIA1-9	Delete the statement on protective coatings under evaluation and technical basis. Including IIIA4.2, page IIIA4-7 IIIA5.2, page IIIA5-9 IIIA6.2, page IIIA6-9 IIIA7.2, page IIIA7-9	The Structures Monitoring Program is adequate as a stand-alone program without the coatings program.	Clarified the applicability of a protective coatings program as follows: "If protective coatings are relied upon to manage the effects of aging, the structures monitoring program must include requirements to address protective coatings monitoring and maintenance." GALL IIIA was revised to address this comment.
G-III.A1-6	III A1.2, corrosion, page IIIA1-9	Delete requirement on inaccessible areas. Including IIIA3.2, page IIIA3-9 IIIA5.2, page IIIA5-9 IIIA7.2, page IIIA7-9 IIIA8.2, page IIIA8-9	Requirements on inaccessible areas are not required by the Code on containment. Therefore, group 1 structures should not be more restrictive than Code requirements for containment.	There is no generic concern relating to aging of inaccessible structural steel in Class 1 structures. The proposed deletions have been implemented. GALL IIIA was revised to address this comment.

Table B.2.2: Disposition of NEI Comments on Chapter III of GALL Report (continued)

Comment Number	Item Number	Comment/Proposed Change	Basis for Comment	NRC Disposition
G-III A1-7	III.A1.3, page IIIA1-9 Masonry Walls	Revise the AMP column to “Structures Monitoring Program or Masonry Wall Program” and add referral to Chapter XI-S6 to Evaluation column.	Either program may be used.	Guidance on the applicability of XI.S6 “Structures Monitoring Program” for aging management of masonry walls was added to the ‘Program Description’ of XI.S5. The AMP for masonry walls can be either the XI.S6 “Structures Monitoring Program” or the XI.S5 “Masonry Wall Program.” AMP XI.S5 was revised to address this comment.
G-III A2-1	III.A2.3, page IIIA2-9 Masonry Walls	Revise the AMP column to “Structures Monitoring Program or Masonry Wall Program” and add referral to Chapter XI-S6 to Evaluation column.	Either program may be used.	See NRC disposition of NEI Comment G-III A1-7 in this Appendix B, Table B.2.2.
G-III A3-1	III.A3.3, page IIIA3-9 Masonry Walls	Revise the AMP column to “Structures Monitoring Program or Masonry Wall Program” and add referral to Chapter XI-S6 to Evaluation column.	Either program may be used.	See NRC disposition of NEI Comment G-III A1-7 in this Appendix B, Table B.2.2.

Table B.2.2: Disposition of NEI Comments on Chapter III of GALL Report (continued)

Comment Number	Item Number	Comment/Proposed Change	Basis for Comment	NRC Disposition
G-III A5-1	A5.2, liners, page III A5-9	On Page III A5-9, delete the discussion in the Evaluation and Technical Basis column and insert the Water Chemistry Program as the applicable AMP and add referral to Chapter XI-M11.	The water chemistry program precludes aging effects by maintaining the spent fuel pool parameters such that degradation would not occur.	The Water Chemistry Program (now XI.M2) has been identified as the applicable AMP. However, in addition to the Water Chemistry Program, the monitoring of the spent fuel pool water level is also necessary, because reliance solely on control of water chemistry does not manage potential degradation from the concrete side of the spent fuel pool liner. Such degradation has occurred at one plant. GALL IIIA was revised to address this comment.
G-III A5-2	III.A5.3, page III A5-9	Revise the AMP column to "Structures Monitoring Program or Masonry Wall Program" and add referral to Chapter XI-S6 to Evaluation column.	Either program may be used.	See NRC disposition of NEI Comment G-III A1-7 in this Appendix B, Table B.2.2.
G-III A6-1	III.A6.3, page III A6-9	Revise the AMP column to "Structures Monitoring Program or Masonry Wall Program" and add referral to Chapter XI-S6 to Evaluation column.	Either program may be used.	See NRC disposition of NEI Comment G-III A1-7 in this Appendix B, Table B.2.2.
G-III A8-1	III.A8.1, page III A8-7 Corrosion of Embedded Steel and Aggressive Chemical Attack	Evaluation and technical basis should provide the limits below which no aging management is required similar to those on page III A1-7.		See NRC disposition of NEI Comment G-III A1-1 in this Appendix B, Table B.2.2.

Table B.2.2: Disposition of NEI Comments on Chapter III of GALL Report (continued)

Comment Number	Item Number	Comment/Proposed Change	Basis for Comment	NRC Disposition
G-III A8-2	III A8.2, stainless steel tank liners	Delete the item entirely.	Aging of the internal surfaces of steel tanks is addressed with the applicable mechanical system and does not belong in the structural section.	Stainless steel liners for tanks are appropriately addressed in GALL, as part of the structure. The aging effect addressed in GALL III A has not been duplicated in other sections of GALL. GALL III A was not revised to address this comment.
G-III B1-1	III B1.1 page III B1-4 to III B1-17	For section B1, change header at top of page from B1.3 to B1. Also, delete "MC" from the heading text.	Editorial Class MC is for containment vessels, not piping and component supports.	To improve clarity, the title of III B1 was changed to "Supports for ASME Piping and Components" and the title of III B1.3 was changed to "Supports for ASME Class MC Components." The supports covered by III B1.3 are for certain BWR containment components, such as downcomers, vent lines, and torus. GALL III B was revised to address this comment.
G-III B1-2	III B1.1.1, page III B1-4; III B1.1.3, page III B1-8 III B1.1.4, page III B1-8; III B1.2.1, page III B1-10; III B1.3.1, page III B1-14; III B1.3.3, page III B1-16; III B2.3, page III B2-6; III B3.2,	Vibration and cyclic induced cracking is not a license renewal aging effect and should be deleted.	Cracking due to vibratory loads and cyclic loading is not an aging effect requiring management for the period of extended operation. For components that may be subjected to vibratory or cyclic loading, proper design eliminates or compensates for vibration and cyclic loading. In addition, vibration characteristically leads to cracking in a short period of time, on the order of hours to days of operation. For example, a component with 1 Hertz vibratory load will be subject to 10^7	Cracks in steel elements of component supports caused by vibratory stresses above the material endurance limit would develop in a matter of hours or days. This time frame is not consistent with the requirements of the License Renewal Rule, which address slow aging processes affected by extended operation. The potential for cracking induced by other cyclic loads, such as thermal cycling of the supported system, is implicitly considered in

Table B.2.2: Disposition of NEI Comments on Chapter III of GALL Report (continued)

Comment Number	Item Number	Comment/Proposed Change	Basis for Comment	NRC Disposition
G-III B1-2 (cont.)	page III B3-4; III B4.3, page III B4-6; III B5.2, page III B5-4		cycles in four months of service, so that failure, should it occur, is probable early in life for vibratory stresses above the endurance limit. Because this time period is short when compared to the overall plant operational life, any cracking will be identified and corrected to prevent recurrence long before the period of extended operation. This type of degradation is limited to a small set of components and is corrected as discovered with inspections of similar locations and configurations to ensure the event is location specific or a one-time event.	<p>structural steel design through the specification of conservative design allowable stresses that account for a minimum of 10^5 load cycles.</p> <p>However, concrete located around expansion, undercut or embedded anchors for component supports is susceptible to cracking as a result of service-induced loads on the supports. This could result in reduced capacity of the support anchorage and consequential failure of the anchorage during a design-basis event (e.g., earthquake). Maintaining sound conditions in the concrete around support anchors is critical to the intended function of the support and requires aging management.</p> <p>GALL III B was revised to retain aging management of concrete surrounding expansion, undercut, and embedded anchors; the Structures Monitoring Program is identified as the applicable AMP.</p> <p>At the 1/30/01 meeting with NEI, the staff again reviewed operating experience and NRC-sponsored testing of concrete anchor capacities when cracking is present. It was concluded that concrete cracking is significant for expansion anchors and grouted anchors, but not for</p>

Table B.2.2: Disposition of NEI Comments on Chapter III of GALL Report (continued)

Comment Number	Item Number	Comment/Proposed Change	Basis for Comment	NRC Disposition
G-IIIB1-2 (cont.)				<p>cast-in-place anchors and undercut anchors. GALL has been revised to reflect this conclusion.</p> <p>GALL IIIB was revised to address this comment..</p>
G-IIIB1-3	IIIB1.1.2, Bolting, SCC, page III B1-6	Program should be Subsection IWF, not Bolting Integrity Program.	The components listed in “Class I Piping and Component Supports” are within the scope of IWF, which has been found to be acceptable for managing this aging effect in NUREG-1723.	<p>Cracking due to SCC is not adequately managed by IWF, which only requires a VT-3 visual inspection of most support details. Cracking of bolts due to SCC can only be detected by examinations developed specifically for this purpose. Bolting Integrity Program (XI.M18) was revised to include consideration of stress corrosion cracking (SCC) for high strength bolting associated with NSSS supports.</p> <p>For additional discussion concerning special inspection of bolting, see NRC Disposition of NEI Comment G-V-E-7 in this Appendix B, Table B.2.4.</p> <p>GALL IIIB was not revised, but AMP XI.M18 was revised to address this comment.</p>

Table B.2.2: Disposition of NEI Comments on Chapter III of GALL Report (continued)

Comment Number	Item Number	Comment/Proposed Change	Basis for Comment	NRC Disposition
G-IIIB1-4	B1.1.2 SCC page III B1-6	Under the material column for stress corrosion cracking, change "tensile strength > 150ksi" to "yield strength > 150ksi."	Per NUREG-1339 and EPRI NP-5769, the 150ksi is related to yield strength when discussing whether SCC is an applicable aging effect.	"Yield strength" is the correct terminology not "tensile strength." As noted in NUREG-1339, the 150 ksi criterion is applied to "actual" yield strength, not "minimum specified" yield strength. GALL IIIB was revised to address this comment.
G-IIIB1-5	IIIB1.1.1, fatigue, page IIIB1-7	For fatigue throughout this section, evaluation and technical basis should be changed to "Fatigue may be a time-limited..." Further evaluation should say "Yes, TLAA if applicable." Including Sections B1.2.1, page IIIB1-13 and B1.3.1, page IIIB1-15	Editorial comment.	The three table entries cited are only applicable if a CLB fatigue analysis exists, which by definition is a TLAA. GALL IIIB was not revised to address this comment.

Table B.2.2: Disposition of NEI Comments on Chapter III of GALL Report (continued)

Comment Number	Item Number	Comment/Proposed Change	Basis for Comment	NRC Disposition
G-III B1-6	III.B1.1.1, Cracking, page III B1-5 III.B1.2.1, Cracking, page III B1-11 III.B1.3.1, Cracking, page III B1-15	In this section and throughout the document, the adequacy of visual VT-3 examination is called into question for the detection of cracking. In particular, Section III.B1.1.1 determine that VT-3 is inadequate for detection of cracking in Class 1 piping and component supports, and Section III.B1.2.1 finds this to be true for Class 2 and 3 piping and component supports as well. VT-1 is recommended.	The conclusions reached in this section go beyond what is current in the code. Licensee should not have to go beyond Code requirements without justification. VT-3 should be found to be adequate for detection of "crack like indications" in at least three circumstances: When the structure or component can tolerate "mature cracks." This should be the case for Class 1, 2, and 3 component supports, where mature cracks are needed to jeopardize the load-carrying function of the component support. When pressure-containing component is subject to both visual examinations and pressure testing capable of detecting localized, small capacity leakage. This should be the case for bellows sleeves and penetration subjected to Appendix J Type B and C tests. Situations where proximity to the component or structure surface is not an issue, so that visual acuity, lighting and character recognition is essentially identical for VT-1 and VT-3.	See NRC Disposition of NEI Comment G-III B1-2 in this Appendix B, Table B.2.2.
G-III B2-1	IIIB2.1, cyclic loading, page IIIB2-6	Cyclic loading should be deleted for cable trays, etc.	Cyclic loading is not applicable to supports for cable trays, conduit, instruments, etc.	See NRC Disposition of NEI Comment G-III B1-2 in this Appendix B, Table B.2.2.
G-III B2-2	IIIB2.2, page IIIB2-6	Thermal cycling/ vibration should be deleted for cable trays, etc.	Cyclic loading is not applicable to supports for cable trays, conduit, instruments, etc.	See NRC Disposition of NEI Comment G-III B1-2 in this Appendix B, Table B.2.2.

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