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Draft NUREG : Revision 1 of Subsequent License Renewal Guidance Documents, and Supplement 1 to Associated Technical Basis Document

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Draft NUREG: Revision to Subsequent License Renewal Guidance Documents, and Supplement to Associated Technical Bases Document

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General Comment

XI.M43 High- Density Polyethylene (HDPE) Piping And Carbon Fiber - Reinforced Polymer (CFRP) Repaired Piping

Justification for comment related to eliminating prescriptive corrective actions.

Eliminate prescriptive follow-up inspections specified in SLR Gall and instead allow determination by the corrective action program based on analysis of information available at the time.

Programs affected: XI. M18 Bolting Integrity, XI.M20 Open-Cycle Cooling Water System, XI.M.21A Closed Treated Water Systems, XI.M27 Fire Water System, XI.M29 Outdoor and Large Atmospheric Metallic Storage Tanks, XI.M32 One-Time Inspection, XI.M33 Selective Leaching, XI.M36 External Surfaces Monitoring, XI.M38 Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components, XI.M42 Internal Coatings/Linings for In-Scope Piping, Piping Components, Heat Exchangers and Tanks and XI.M43 High- Density Polyethylene (HDPE) Piping And Carbon Fiber - Reinforced Polymer (CFRP) Repaired Piping

The prescriptive follow up inspection in the corrective action element was added in SLR GALL Rev 0 December 2017. In NUREG 2221 Technical Bases for Changes in the Subsequent License Renewal Guidance Documents NUREG-2191 and NUREG-2192 December 2017, the staff described the technical basis of this change as:

The basis for the provision of a minimum sample size of 5 or 20% of each applicable material and environment combination is as follows. Although not directly applicable, the basis for the minimum sample size of 5 inspections is derived from GL 90-05. GL 90-05 addresses medium energy systems (e.g., service water) where leakage has occurred. The GL recommends inspecting five additional locations beyond the leaking location. The 20% criterion was incorporated to address limited population sizes where a minimum sample of 5 could result in all of the population being inspected. This criterion is consistent with several sampling-based AMPs (e.g., XI.M32, XI.M38).

Utilizing GL 90-05 to determine prescriptive follow-up actions is not appropriate for the following reasons:

1. GL 90-05 is addressing guidance for performing temporary non-code repairs of ASME Code Class 1, 2 and 3 Piping. There is a through wall leak while in operation, so the augmented inspections are aimed at identifying scope for the emergent, temporary repairs. The scenario is known and specific, whereas the results of a planned aging management inspection may not be.
2. The staff is applying this criterion to an aging management inspection that does not meet acceptance criteria. But the Acceptance Criteria in the effected programs could be based on a long inspection interval and not an immediate situation such as a leak on ASME Code Class 1, 2 and 3 piping. There also could be some flexibility in the acceptance criteria such as a shorter inspection interval.
3. The GL 90-05 criteria itself does not explain the technical basis. So how can the staff apply a criterion with no explained and justified technical basis?

The staff should accept that the applicant's Corrective Action Program will be adequate to make this determination based on the specific situation and information evaluated at the time. The corrective action program is rigorous and reviewed by NRC regional inspectors on a frequent basis.

See attachment for text changes.

Attachments

XI M43 HIGH- DENSITY POLYETHYLENE (HDPE) PIPING AND CARBON FIBER REINFORCED POLYMER (CFRP) REPAIRED PIPING - Comments

XI.M43 High- Density Polyethylene (HDPE) Piping And Carbon Fiber - Reinforced Polymer (CFRP) Repaired Piping

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3. The GL 90-05 criteria itself does not explain the technical basis. So how can the staff apply a criterion with no explained and justified technical basis?

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Note: Proposed changes to text are indicated by ***bold italicized text***.

NUREG 2191 Volume 2 Revision 1 Draft	Mark up of text	Basis for comment
XI-288 lines 17 to 39	<p>17 a. Where the piping does not meet the acceptance criteria, the degraded condition is 18 repaired or the affected piping is replaced. In addition, where the depth or extent of 19 degradation of the base metal could have resulted in a loss of pressure boundary 20 function when the loss of material is extrapolated to the end of the subsequent period of 21 extended operation, an expansion of sample size is conducted <i>in accordance with the site's corrective action program. The number of 22 inspections within the affected piping categories is doubled or increased by five, 23 whichever is smaller. If the acceptance criteria are not met in any of the expanded 24 samples, an analysis is conducted to determine the extent of the condition and the 25 extent of the cause. The number of follow-on inspections is determined based on the 26 extent of condition and extent of cause. 27 The timing of the additional examinations is based on the severity of the degradation 28 identified and is commensurate with the consequences of a leak or loss of function. 29 However, in all cases, the expanded sample inspection is completed within the 10-year 30 interval during which the original inspection was conducted or, if identified in the latter 31 half of the current 10-year interval, within 4 years after the end of the 10-year interval. 32 These additional inspections conducted during the 4 years following the end of an 33 inspection interval cannot also be credited toward the number of inspections for the 34 following 10-year interval. The number of inspections may be limited by the extent of 35 piping subject to the observed</i></p>	<p>This statement is an example of the staff adding unnecessary burden and should be deleted.</p> <p>In this example the staff is being prescriptive on follow up inspection requirements without any information on the actual issues identified. There could be other factors determined by the corrective action program that could result in different follow up actions. For example, there may be new inspection technology available for monitoring, there could be the use of artificial intelligence (AI) for determining follow-up actions. The point is that the staff should not be prescribing specific future actions when further analysis is appropriate based on actual conditions.</p> <p>The staff should accept that the applicant's Corrective Action Program will be adequate to make this determination. The corrective action program is reviewed by regional inspectors on a frequent basis.</p>

