

# Industry Comments on GALL-SLR Supplement

**Eric Blocher and John Thomas**

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NRC Two White Flint North

# XI.M33 Selective Leaching - Ductile Iron

Based on its lower susceptibility, ductile iron should be inspected as a separate population and to the same extent as gray cast iron with the following recommendations:

- After the initial sample, recommend gray Iron and ductile iron sample populations be treated as follows:
  - If examinations confirms selective leaching and an evaluation of sample results indicates a loss of structural integrity in the SPEO, continue separate sample populations for selective leaching
  - If examinations confirms selective leaching and an evaluation of sample results does not indicate a loss of structural integrity in the SPEO, a single sample population can be used for gray iron and ductile iron. The majority of the combined sample population must be gray iron samples..
  - If destructive examinations of ductile iron do not confirm selective leaching and a visual inspection confirms loss of material (LOM), continue LOM aging management consistent with other steel alloys (e.g. XI.M21A, XI.M27, XI.M36 or XI.M38)
- Recommend not citing INPO OE sources in AMP Element 10

# Cracking Due to SCC and Intergranular SCC

Change the threshold temperature for applicability of BWR SCC back to 93C (200F)

- All GALL rows that apply to the FER are specific to BWR components with a recommendation to use M7 BWR Stress Corrosion Cracking program
- M7 is based on the BWRVIPs which specifically evaluated SCC susceptibility and established a 93C temperature threshold, which was reviewed and approved by the NRC
- To avoid confusion with other BWR ESF and Auxiliary Systems piping, revise the component column of Table 3.2-1 and associated AMR lines that identify FER 3.2.2.2.9 and aging management with XI.M7 BWR SCC and XI.M2 Water Chemistry to specify piping related to CRD return lines. Also include similar revisions to Table 3.3-1 and FER 3.3.2.2.9.

# Cracking Due to SCC in Aluminum Alloys

Revise the FER to include evaluation of plant specific conditions to determine if an aggressive environment exists for specific alloys and requires management. In addition to operating experience, specific considerations include:

- Proximity of aggressive water leakage sources
- Proximity of non-metallic insulation not consistent with Reg. Guide 1.36
- Components that operate at or above ambient temperature
- Repairs that introduce stress or change material characteristics

# Loss of Material and SCC in Stainless Steel

- Review of site operating experience and a One-Time Inspection (XI.M32) are acceptable means to confirm the absence of aging effects for internal and external environments
- OE review results are specified in the FER text
- Loss of Material and Cracking: Confirm that AMR lines will be provided in appropriate GALL-SLR sections consistent with AMPs identified in the FER to promote SLRA review efficiency and to eliminate reference to plant specific AMPs.

# Long Term Loss of Material

- Recommend deleting the term “long term loss of material” from the AMP XI.M32 and associated AMR lines and replace the aging management requirement with an augmented inspection based on operating experience.
- Revise FERs for recurring internal corrosion to specify an augmented inspection (wall thickness measurements on a representative sample) for steel component environments when the OE evaluation reveals repetitive occurrences.
- The augmented inspections are intended to provide additional decision points where increased inspections would be implemented.

# AMR Lines Supporting FER Changes

- FER text makes it clear that aging effects are to be managed by a GALL AMP. However GALL and SRP rows identify “Plant Specific aging management program”
- To improve review efficiency, GALL AMR lines need to be provided that identify applicable AMPs

## Cracking and Cyclic Loading in Non-Regenerative Heat Exchangers

- FER 3.3.2.2.2 identifies that a plant specific AMP be evaluated
- Revise the FER to recommend that the absence of cracking due to SCC and cyclic loading be confirmed by M32, One-Time Inspection Program and radioactivity monitoring
- This is consistent with the applicant implementation activities during initial license renewal.



# Environments

- Air or Any Air environments need to be defined in GALL-SLR Chapter IX and used consistently in GALL-SLR. Air environment is used in GALL-SLR AMR lines associated with loss of preload, fatigue/cyclic loading, and AMP XI.M23
- Recommend identifying soil rather than variations of soil, groundwater environments. Existing GALL-SLR Chapter IX definition of soil includes consideration of groundwater.
- Recommend creating an “underground” environment rather than using “any air environment, condensation, raw water” for underground AMR lines.

# Specific AMR Comments

- Ensure SLR-SRP identifies BWR and PWR type when AMR lines deleted or combined.
- Recommended not deleting several AMR lines to retain AMR line options in GALL Chapters or Sections.
- Rather than remove the term “jacketed” from jacketed thermal insulation recommend specifying “non-metallic thermal insulation”
- Use “flow blockage due to fouling” rather than “fouling that leads to corrosion”. AMPs manage aging effects such as flow blockage or loss of material.
- Additional changes identified that require deletion of “piping elements’ in GALL-SLR Chapter IX.

## Meeting Closure:

Are there questions that require technical discussion?