

**NRC/NEI**

**Public Comment Meeting on Interim Staff  
Guidance (ISG) Document**

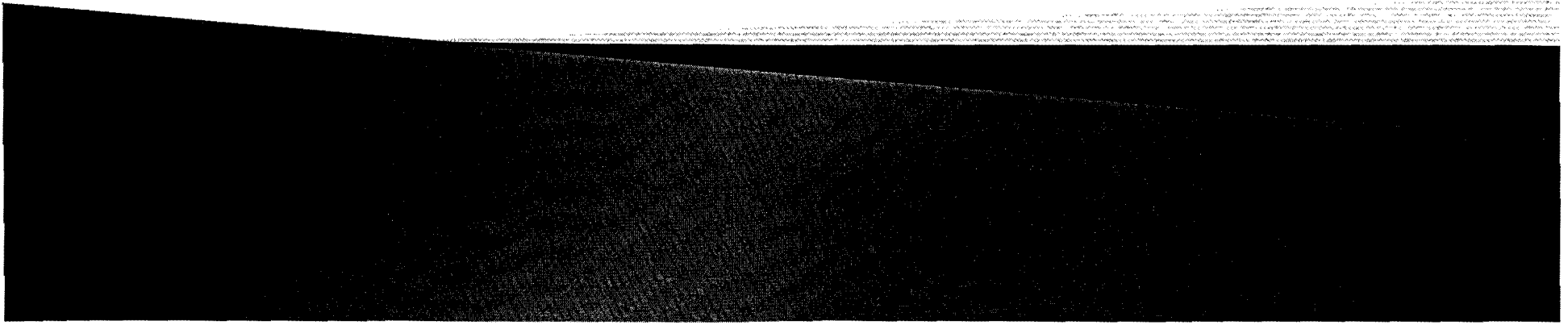
**LR-ISG-2012-02 Aging Management of Internal Surfaces, Service  
Level III and Other Coatings, Atmospheric Storage Tanks, and  
Corrosion under Insulation**

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May 23, 2013



# Overview

## ❑ LR-ISG-2012-02:

- Revised four existing GALL Report aging management programs (AMPs).
- Developed a new GALL Report AMP for Service Level III and Other coatings.
- Developed a new further evaluation (FE) aging management review (AMR) item to address recurring internal corrosion.
- Developed new and revised many SRP-LR and GALL Report AMR items.
- Revised the Final Safety Analysis Report (FSAR) Supplement description for the affected AMPs and developed the FSAR supplement description for the new AMP.
- Revised three GALL Report definitions and developed four new definitions.

## Overview, continued

	New FE	XI.M27	XI.M29	XI.M36	XI.M38
Recurring internal corrosion	√				
Minimum representative sample					√
Loss of coating integrity	New GALL Report AMP XI.M42				
Fire water system blockage		√			
Revised scope and inspections for tanks			√		
Corrosion under insulation			√	√	
Volumetric exam of underground pipe					√
Pressurization of elastomers					√

FE – Further Evaluation

XI.M27 - Fire Water System

XI.M29 - Aboveground Metallic Tanks

XI.M36 - External Surfaces Monitoring of Mechanical Components

XI.M38 – Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components

XI.M42 – Service Level III and Other Coatings Monitoring and Maintenance

# Recurring Internal Corrosion

- ❑ New FE AMR item addresses a periodic aging effect with similar aging mechanism, which:
  - Did not meet plant-specific acceptance criteria, or
  - 50% wall penetration, leak, or 40% reduction of material properties.
- ❑ New FE, results to be compiled in a plant-specific AMP or enhanced GALL Report AMP:
  - Basis for augmented or lack of augmented inspections
  - Basis for adequacy of inspection techniques
  - Parameters to be trended
  - Basis for inspection frequency
  - Inspection of inaccessible components

# Minimum Representative Sample for AMP XI.M38

- ❑ Opportunistic inspections may not be available for one or more material, environment, or aging effect combinations.
- ❑ AMP XI.M38 revised to recommend that every 10 years:
  - Minimum sample size of 20% of the components, maximum of 25 components.
  - Each population of the same material, environment, and aging effect.
  - Similar environments may be combined.
  - Where practical, inspection locations selected from components most susceptible to aging.

# Loss of Coating Integrity for Service Level III and Other Coatings, AMP XI.M42

## ❑ LR-ISG-2012-02

- Defined the aging impact: downstream flow blockage or unanticipated or accelerated corrosion of base metal.
- Defined the scope as: in-scope piping, heat exchangers, and tanks with internal coatings.
  - Included Service Level III coating.
  - Defined “Other” coatings as those associated with the 10CFR 54.4 (a)(3) function.

## ❑ New GALL Report AMP, XI.M42 to address:

- Visual inspection, frequency dependent on age and meeting material manufacturer installation specifications.
- Physical testing, where possible, for coatings not meeting acceptance criteria due to delamination or blisters.
- Training and qualification of inspectors in accordance with ASTM International Standards endorsed in RG 1.54.

# Fire Water System Flow Blockage, AMP XI.M27

- ❑ Removed recommendation to use non-intrusive methods in lieu of flow tests or internal visual inspections.
- ❑ Added follow-up volumetric examination if internal inspections detect surface irregularities.
- ❑ Flow testing and visual inspections are performed in accordance with NFPA 25 (2011 Edition).
- ❑ Portions of water-based fire protection system components that are periodically subjected to flow but normally dry, and not configured to drain, are subjected to augmented testing beyond that of NFPA 25 (2011 Edition). Internal visual inspections are conducted and portions are volumetrically wall thickness tested.
- ❑ Fire water storage tanks are inspected and tested to guidance in NFPA 25 (2011 Edition).

# Revised Scope and Inspections for Tanks, AMP XI.M29

## ☐ Revised scope:

- All outdoor tanks.
- Indoor tanks: > 100,000 gallons, near-atmospheric design, exposed internally to water, sit on concrete.

## ☐ Revised inspections

- Adding cracking due to SCC for stainless steel and aluminum tanks.
- Tank inside surfaces are inspected by visual or surface exam for loss of material and cracking.
- Tank bottom thickness measurements frequency changed.
- Surface exams cover 20% of the tank surface or 25 1-square foot sections.
- Internal and volumetric inspections of tank bottoms are conducted whenever tank is drained, but not less than every ten years, starting 5 years prior to the period of extended operation.



# Corrosion Under Insulation, AMPXI.M27 & XI.M36

- ☐ All outdoor components and any indoor components operating below the dew point.
- ☐ Inspections conducted every 10 years starting 5 years prior to period of extended operation.
- ☐ Remove insulation from 20% of each material type, alternatively any combination of 25 1-foot axial lengths of piping and 20% of the surface area of a component.
- ☐ Outdoor tanks – remove 25 1-square-foot sections or 20% of the surface. Inspections locations distributed to cover tank dome, sides, bottom and penetration points.

# Volumetric Examination of Underground Piping, AMP XI.M38

- ❑ External volumetric examination of the internal surfaces of underground piping was removed from AMP XI.M41 in a prior ISG.
- ❑ This ISG revises AMP XI.M38:
  - Inspections of the interior surfaces of aboveground piping may be credited if the aboveground and buried or underground component material, environment, and aging effects are similar.
  - When aboveground inspections of interior surfaces were not conducted, the sample population includes volumetric or internal visual inspections capable of detecting loss of material on the internal surfaces of the buried or underground piping.

# Pressurization Option for Inspecting Elastomers

## AMPXI.M38

- ☐ Added clarification because prior wording stated that elastomers could be examined by pressurization to detect hardening or loss of strength “(e.g., hydrotesting).”
- ☐ New wording:  
(i.e., sufficiently pressurized so as to expand the surface of the material such that cracks or crazing would be evident).

# Next Steps

- ☐ Comments are due by June 16, 2013
- ☐ ADAMS Accession No. ML12291A920
- ☐ FOR FURTHER INFORMATION CONTACT: Mr. William Holston,  
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- ☐ Submitting comments:
  - Go to *<http://www.regulations.gov>* and search for Docket ID  
NRC–2013–0068
  - Mail comments to: Cindy Bladey, Chief, Rules, Announcements,  
and Directives Branch (RADB), Office of Administration, Mail Stop:  
TWB–05– B01M, U.S. Nuclear Regulatory Commission,  
Washington, DC 20555– 0001*
  - Fax comments to: RADB at 301–492–3446*