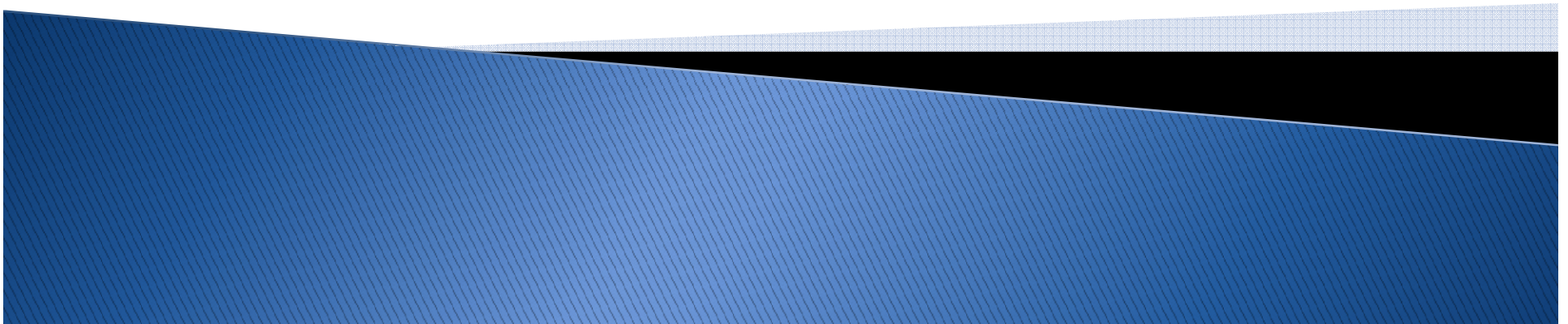


NRC/NEI Quarterly Meeting

Buried & Underground Piping and Tanks ISG Response to Public Comments

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NRR/DLR/RAPB
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Topics for Discussion

This briefing covers the main technical comments received during the public comment period – what changed and what did not change.

The revised ISG is currently proceeding through concurrence review.

Response to comments could change.

Piping Inspections

Industry comments

- Significant changes to Element 4 Table 4a has increased the number of inspections.
- Inclusion of NSR¹ could cause unnecessary inspections of NSR piping.
- Preventive measures criteria leave little margin in regards to their impact on element 4 inspection requirements when inadequate conditions are observed.
- Engineering evaluations are recommended to assess the adequacy of protection provided to buried component when preventative measure impacts are observed.

¹ Nonsafety-related

Quantities of Inspections vs. CP Performance

The staff believes that the inspection quantities are appropriately escalated in regard to increased inspections.

The increased inspections occur where either:

- Cathodic protection (CP) is not performing as expected, and although coatings and backfill are in general meeting recommendations, sufficient inspections are required to demonstrate no adverse conditions are present.
- CP is not available and plant-specific operating experience demonstrates conditions that are causing pipe degradation.

Changes Affecting Quantities of Inspections

Changed as a result of comments

- Steel, copper and aluminum piping were combined into one category.
- HDPE¹ and other polymeric materials were combined into one category.
- CP availability threshold was changed to 85%.
- CP effectiveness changed from 100% as-left to 80% as-found .
- Increased inspections due to degraded CP performance are applied to only the degraded portions of the CP system.
- Multi unit sites addressed.
- For polymeric materials, if all piping is NSR, inspections reduced by 50%.

Not changed

- GALL Revision 2 - fire water piping had already been addressed with recommended alternatives to inspections.
- ISG - inspections based on percent or not to exceed value.

¹ High Density Polyethylene Piping

Cathodic Protection Acceptance Criteria

Acceptance Criteria program element:

- The 100 mV polarization criterion is limited to electrically-isolated piping sections or areas of grounded piping where the effects of mixed metals are shown to be minimal.
- When the 100 mV polarization criterion is used in place of the -850 mV CSE criterion, an explanation must be provided to justify why the effects of mixed metals are minimal and the most anodic metal in the system is adequately protected.
- Plants with sacrificial anode systems state the test method and acceptance criteria and basis in the application.
- A -1,000 mV criterion was added for pre-stressed concrete pipe to minimize hydrogen generation and possible hydrogen embrittlement of the high-strength prestressing wire.

Qualifications for Coatings Inspectors

Acceptance Criteria program element, references to 49 CFR Parts 192 and 195 were deleted,

The ISG provides two options:

- NACE Coating Inspector Program Level 2 or 3 inspector qualification
- Attend the Electric Power Research Institute (EPRI) Comprehensive Coatings Course and complete the EPRI Buried Pipe Condition Assessment and Repair Training Computer Based Training Course

Miscellaneous Changes

- Clarified that inspections for SCC occur only when removing coatings for other reasons. Staff position based on no known instances of carbonate cracking in commercial nuclear plants.
- Nickel alloy added, no recommended inspections
- Inspection of controlled low strength backfill material revised to cover top plus 50% of sides.
- Hydro testing – included specific criteria versus reference to 49CFR (i.e., test pressure 110%, hold time 8 hours, acceptance criterion).
- Ten-year search of OE when CP not provided
- Sulfates added to soil sampling parameters.