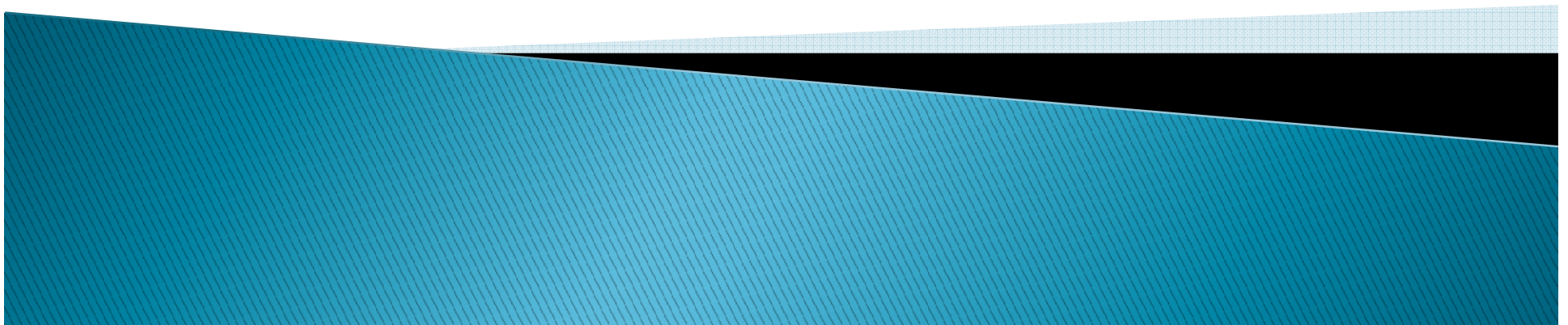


Industry Meeting Buried and Underground Piping and Tanks Initiatives

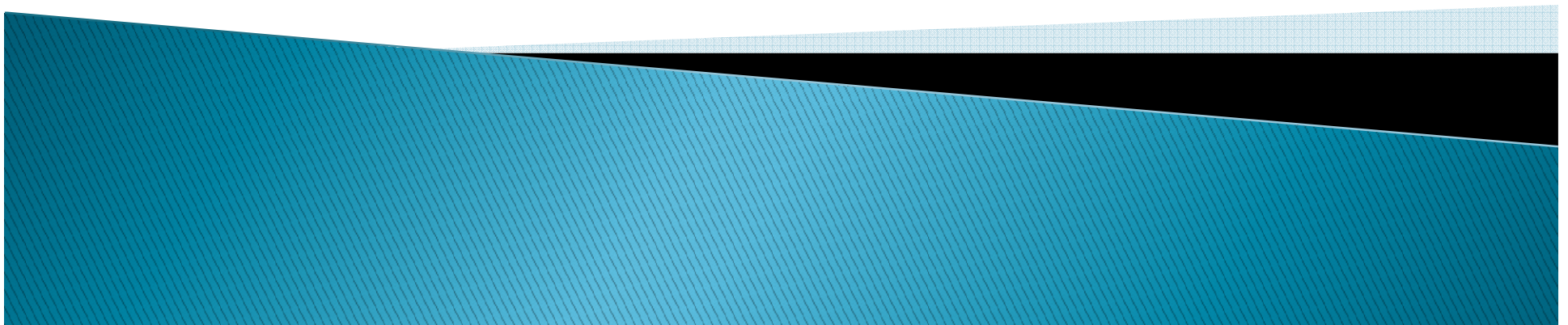
William Holston
Division of License Renewal
Office of Nuclear Reactor Regulation

April 4, 2012



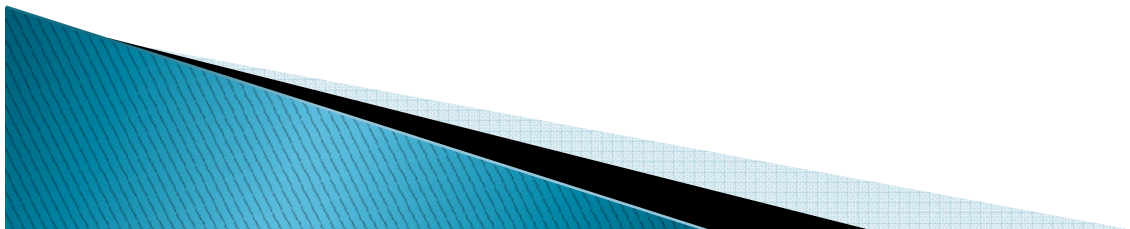
CHANGES TO THE GENERIC AGING LESSONS LEARNED (GALL) REPORT REVISION 2 AGING MANAGEMENT PROGRAM XI.M41, “BURIED AND UNDERGROUND PIPING AND TANKS”

LR-ISG-2011-03

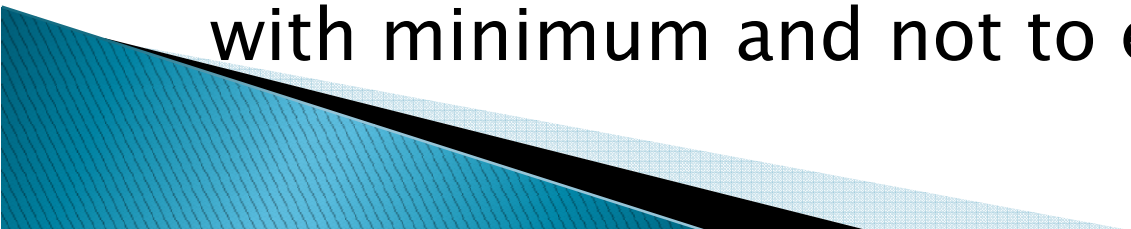


Plants Without Cathodic Protection

- ▶ Contains an option to demonstrate that CP is not needed or not practical – basis to be provided in LRA.
- ▶ Revises OE search for buried piping from five years to 20 years and includes components not in scope of LR that have similar materials and environment.
- ▶ Revises inspection quantities.



Buried Pipe Inspection Table Changes

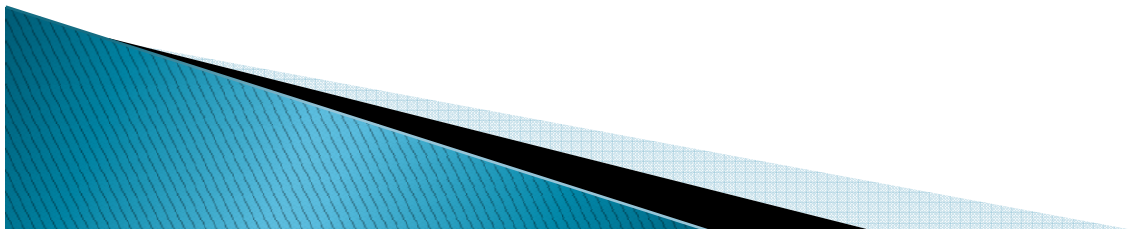
- ▶ Removes SR/Code Class and hazardous material classifications – utilities use risk ranking
 - ▶ Increasing inspections through each ten-year period
 - ▶ Inspection quantities are percentage based with minimum and not to exceed values.
- 

Buried Pipe Inspection Example

Table 4a. Inspections of Buried Pipe				
Material	Preventive Actions	Inspections of <u>In-scope</u> Piping [Not to Exceed (NTE) Number of Inspections]		
		Years 30 – 40	Years 40 – 50	Years 50 - 60
Steel	C	0.5%, NTE 1	0.5%, NTE 1	0.5%, NTE 1
	D	1%, NTE 2	1%, NTE 2	1%, NTE 2
	E	1%, NTE 2	1%, NTE 2	1%, NTE 2
	F	5%, NTE 7	6%, NTE 10	7.5%, NTE 12
	G	10%, NTE 15	12%, NTE 20	15%, NTE 25
C	Cathodic protection provided - installed 5 years prior to the end of the inspection period of interest			
D	Cathodic Protection provided - installed less than 5 years prior to the end of the inspection period of interest, or operation less than 90 percent of the time since installation			
E	External corrosion control is not required			
F	Cathodic protection not provided i. coatings and backfill are provided in accordance with Table 2a of this AMP, and ii. <u>plant-specific</u> operating experience is acceptable, and iii. soil has been demonstrated to be not corrosive for the material type			
G	Cathodic protection not provided i. coatings or backfill are not provided in accordance with Table 2a of this AMP; or ii. one or more items of adverse <u>plant-specific</u> operating experience or iii. soil testing has not been conducted or the soil is corrosive for the material type			

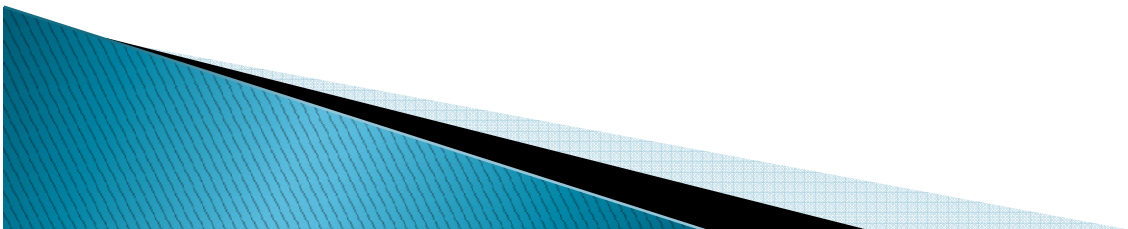
Other Changes

- ▶ Removes recommendation to volumetrically inspect underground piping to detect internal corrosion – will be covered by an ISG in development, public comment mid Summer 2012.
- ▶ Revises the existing expansion of inspection size due to discovering adverse indications to:
 - initial doubling of the sample size
 - followed by an analysis of extent of cause and extent of condition to determine final sample size.



Other Changes, cont

- ▶ Adds a recommendation that when damage to the coating is significant and the damage was caused by non-conforming backfill:
 - an extent of condition evaluation should be conducted
 - ensure that the as-left condition of backfill in the vicinity of observed damage will not lead to further degradation.



Other Changes, cont

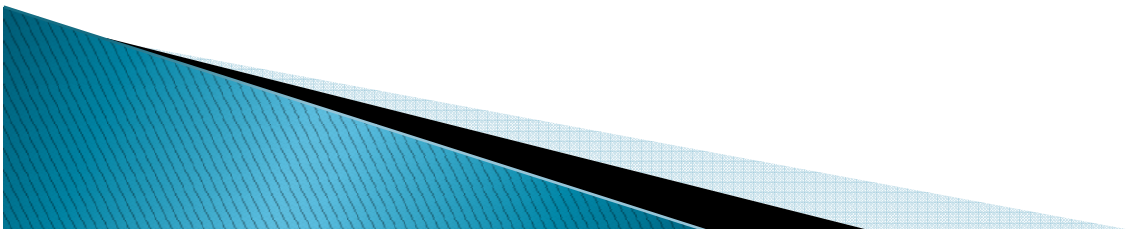
- ▶ Added specific acceptance criteria for cathodic protection surveys

Material	Criteria ¹
Steel	-850 mV, instant off, or -100 mV minimum polarization
Copper	-100 mV minimum polarization
Aluminum	-100 mV minimum polarization

1. To prevent damage to the coating, the limiting critical potential should not be more negative than -1200 mV.

Other Changes, cont

- ▶ Revises SRP–LR Table 3.0–1, FSAR Supplement, Description of Program, to require inclusion of specific preventive and mitigative actions utilized by the AMP.



Follow-on Actions

Public comment period ends April 9, 2012

Staff will review public comments and publish final ISG by June 2012.

