



Alternative Rehabilitation of Class 3 Buried Piping with Structural Spray-In-Place Liner System

September 14, 2022

Topics for Discussion

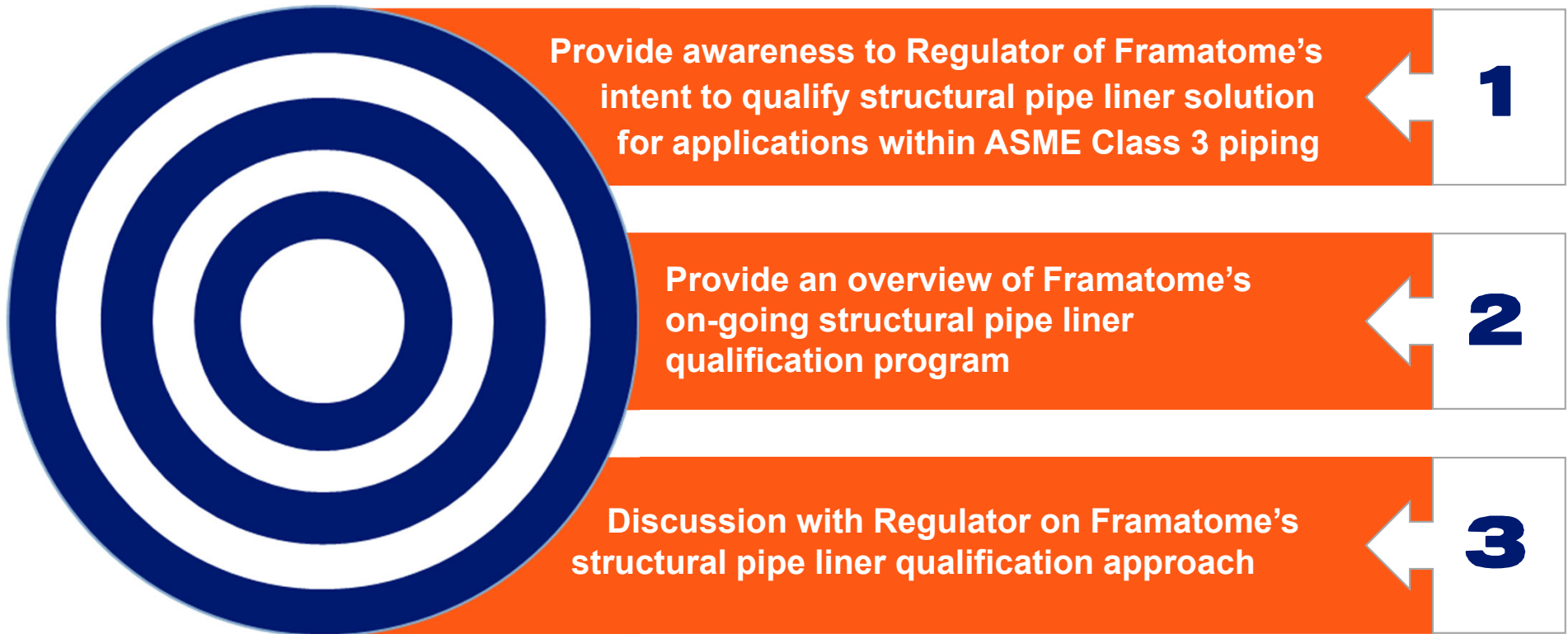
- 01 . Industry Need
- 02 . Framatome's Spray-In-Place Liner System
- 03 . Framatome's Structural Liner Qualification Program
- 04 . Preliminary Relief Request Outline
- 05 . Q&A

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Agenda

Objectives



Introductions

Framatome

- Rob Smith – Senior Vice President, Installed Base Services
- John Peters – Product and Innovation Manager
- Brandon Caldwell – Liner and Coating Product Manager
- Mertis Peters – Project Manager
- Scotty Roberts – Liner Task Manager
- Pascal Brocheny – Hydraulic Engineering
- Mark Ceraldi – Licensing Engineering
- Tony Cinson – Non-Destructive Examination
- Nick DeSantis – Quality Assurance
- Garth Dolderer – Coating Engineering
- Gayle Elliot – Regulatory Affairs
- Chris McGaughy – Structural Engineering
- Tim Schmitt – Structural Engineering

Safety Message

Confined Space Safety

- **Confined Spaces represent significant safety hazards**
 - ◆ Over 150 occupational fatalities per year, with 85% being caused by inadequate training and safety equipment
- **Identification of a Confined Space**
 - ◆ Large enough for a person to enter and perform work
 - ◆ Limited or restricted means of entry or exit
 - ◆ Not designed for continuous personnel occupancy
- **Confined Space Hazards:**
 - ◆ Poor air quality
 - ◆ Toxic or asphyxiant gases
 - ◆ Chemical exposures
 - ◆ Low lighting
 - ◆ High noise, temperatures, radiation, etc.
 - ◆ Poor working surfaces (slip, trip hazards)
- **Confined Space Hazard Mitigation:**
 - ◆ Developed and implemented safety plan (air monitoring, PPE, rescue plan)





Overview of Industry Need for Buried Pipe Rehabilitation

Industry Need Overview

Aging Nuclear Fleet

- Average age of US fleet is 42 years
- Many original components beginning to surpass original design life
- Every nuclear site has buried piping and components that are experiencing degradation
 - ◆ As plants age, the degradation of infrastructure becomes a growing issue which must be resolved to allow for continued operations



Industry Need Overview

Plant Lives are Extending

- Plants pursuing Subsequent License Renewal must evaluate, monitor, and repair infrastructure prior to life extension, there may not be a do-nothing option
- Plants must take action to ensure systems, structures, components are adequate for Period of Extended Operation (PEO) – inspections/monitoring/upgrades
- Aging management and preventative maintenance of buried components is a major focus for the industry with proactive actions being taken to bring non-nuclear innovative solutions into our industry



Industry Need Overview

Mitigative Options are Limited

- For critical buried piping, mitigative options to address aging and degradation may be limited due to:
 - ◆ Condition
 - ◆ Routing
 - ◆ Accessibility
 - ◆ Size
 - ◆ Configuration
- *The industry needs a qualified internal pipe rehabilitation solution that can address the need while overcoming the obstacles*

Framatome believes our Structural Spray-in-Place Liner System is the solution to meet these needs.



Proprietary Information

Proprietary meeting will begin with next slide



Framatome's Spray-In-Place Liner Overview

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Framatome's Structural Liner Qualification Program

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Preliminary Relief Request Outline

Acronyms/Nomenclature

- ASME – American Society of Mechanical Engineers
- ASTM – American Society for Testing and Materials
- DFT – Dry Film Thickness
- FAC – Flow Accelerated Corrosion
- OEM – Original Equipment Manufacturer
- PEO – Period of Extended Operation
- PPE – Personnel Protective Equipment
- SIPP – Spray-in-Place Pipe
- SLR – Subsequent License Renewal

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