

Topical Outline

Nitrogen Inerting for Corrosion Control in Fire Sprinkler Systems Dry Pipe Nitrogen Inerting (DPNI) and Wet Pipe Nitrogen Inerting (WPNI)

- A. Corrosion in Wet Pipe Fire Sprinkler Systems**
 - a. Root Causes for corrosion in wet pipe fire sprinkler systems
 - b. The three pervasive myths regarding corrosion in fire sprinkler systems
 - c. The problem with corrosion by-product solids
- B. Corrosion in Dry/Pre-action Fire Sprinkler Systems**
 - a. Aggressive nature of oxygen corrosion in dry pipe systems
 - b. Acid corrosion caused by condensate
 - c. Why desiccant driers are a waste of money
 - d. Corrosion in coolers and refrigerators
 - e. The impact of corrosion by-products on sprinkler performance
- C. Galvanized Pipe Corrosion**
 - a. Corrosion of zinc in galvanized steel piping
 - b. Why MIC is never a problem in galvanized pipe
 - c. Six reasons why galvanized steel tubing should not be used in fire sprinkler systems
- D. Corrosion Assessments – Managing Risk and Developing a Corrosion Management Strategy**
 - a. Video scoping, pipe analysis, deposit analysis, water analysis, system analysis
 - b. Fire sprinkler system analysis – remediation (save the system)
- E. Nitrogen Gas – The Ideal Solution for Corrosion Control in Fire Sprinkler Systems**
 - a. The **five options** for controlling corrosion in any industrial application
 - b. Using nitrogen gas to remove corrosive gases from fire sprinkler water
 - c. Dry Pipe Nitrogen Inerting (DPNI)
 - d. Wet Pipe Nitrogen Inerting (WPNI)
- F. Fire Code developments**
 - a. Changes in NFPA 13 Installation Guide regarding corrosion for 2013
 - b. Changes in Unified Facilities Criteria (UFC-3-600-01)
 - c. No more chemicals, no more antifreeze
 - d. “C” Factor calculations for black steel and galvanized steel
 - e. State Fire Marshall
- G. FM Global developments**
 - a. 2-0 data sheet regarding corrosion nitrogen inerting
 - b. Recent position paper
- H. Nitrogen Generation System – continuous nitrogen with system venting**
 - a. Membrane Nitrogen Generators
 - b. Portable Nitrogen Generators
 - c. Pre-Engineered Nitrogen Generators
 - d. In-Line Corrosion Monitoring in fire sprinkler systems
- I. Case Studies**
 - a. WPNI Case Study – Mission Critical Manufacturing
 - b. WPNI and Remediation – 20+ Year Old Structures
 - c. DPNI in Mission Critical Data Centers, Big Box Retail, Parking Structures
 - d. WPNI Multi-story wet pipe fire sprinkler systems