

Underground Piping and Tanks Integrity Initiative

Jim Riley, NEI

February 15, 2012



Overview

- **Industry Initiative**
- **Industry Guidance: NEI 09-14**
- **Buried Pipe Leakage Information**

Industry Initiative

- Buried Piping Integrity Initiative applied to **all buried piping** that is in **direct contact with the soil**
- Experience indicated a need for expansion
 - Degradation of piping in vaults and tunnels can occur
 - VY leak came from piping in a vault
 - Buried Piping Integrity Initiative does not address tanks

Industry Initiative

- **NSIAC approved the Underground Piping and Tank Integrity Initiative in November 2010**
 - **Added scope**
 - **Underground piping and tanks whether or not they are in direct contact with the soil if they are outside of buildings and**
 - **Contain licensed radioactive material or**
 - **Are safety related**
- **Goal is reasonable assurance of structural and leakage integrity of in-scope piping and tanks with special emphasis on components containing licensed material**

Understanding an NSIAC Initiative

- NSIAC is an NEI standing committee whose members include the CNO of every utility operating a nuclear power plant in the US
- Initiative is a formal commitment between CNOs
 - Large regulatory credibility, but not a regulatory commitment
- Passing an Initiative requires 80% approval
 - Buried Piping Integrity Initiative was approved unanimously (100%)
- Semi-annual implementation status reports

Milestones

- 1. Procedures and oversight**
- 2. Prioritization**
- 3. Condition assessment plan**
- 4. Plan implementation**
- 5. Condition assessment of components containing licensed material**
- 6. Asset management plan**

Industry Guidance: NEI 09-14



NEI 09-14

- **NEI 09-14 rev 1 issued in January 2011**
 - Includes text of the Initiative
 - Clarifies the intent of the Initiative through “shall” statements
 - Clarifies Initiative scope
 - Includes definitions
 - Enhances the process for justifying deviations
 - Adds expectations for communication of OE and deviations
 - Includes Utility, EPRI, NEI and BPITF responsibilities

BPITF Responsibilities

- **NEI Buried Piping Integrity Task Force focus**
 - **NRC interface**
 - **Reasonable assurance document**
 - **“Enhanced Inspection and Environmental Monitoring Initiative” coordination document**
 - **Monitoring OE**
 - **Initiative interpretation**
 - **Deviation assessment**

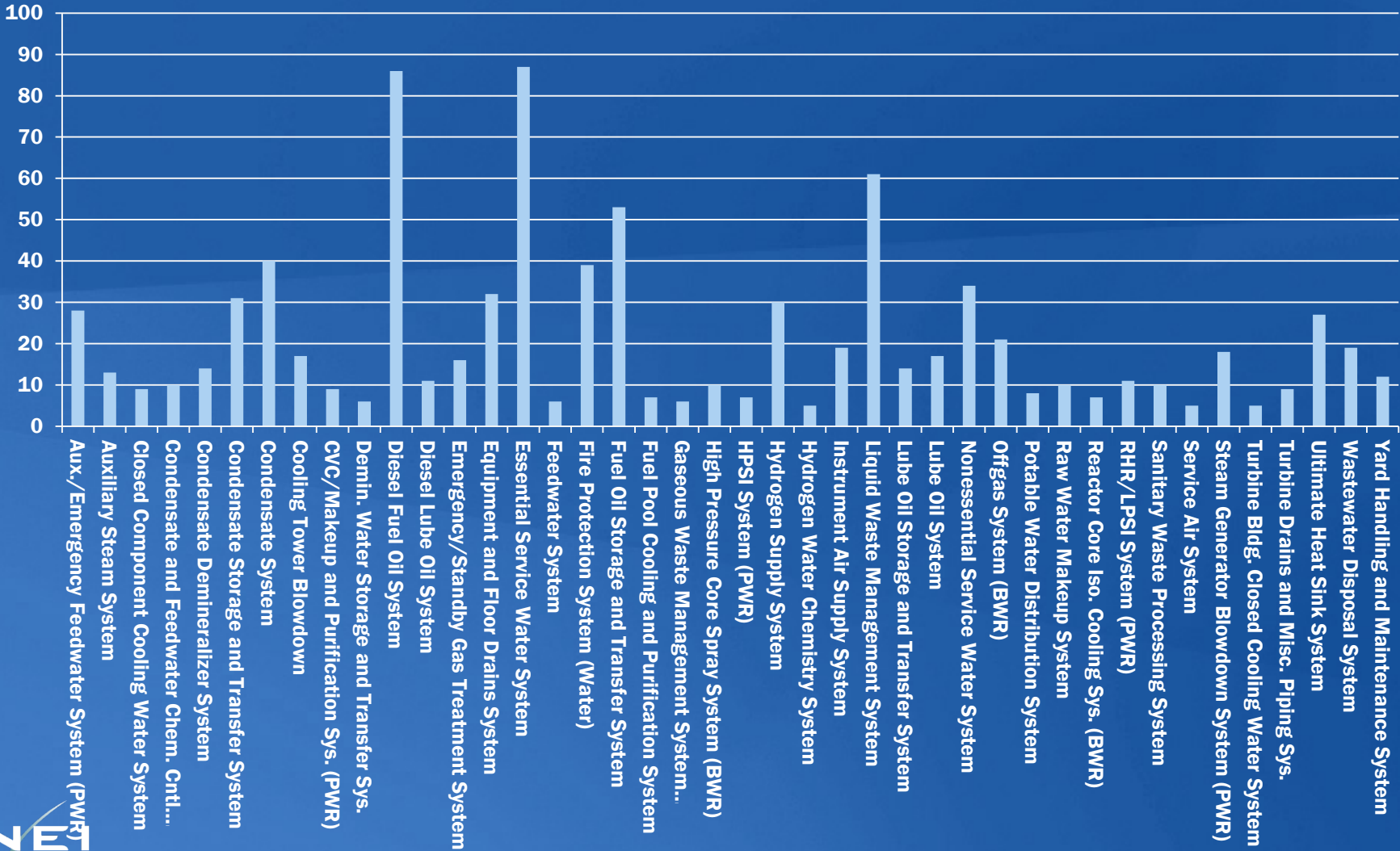
Buried Piping Information

NRC Information Request

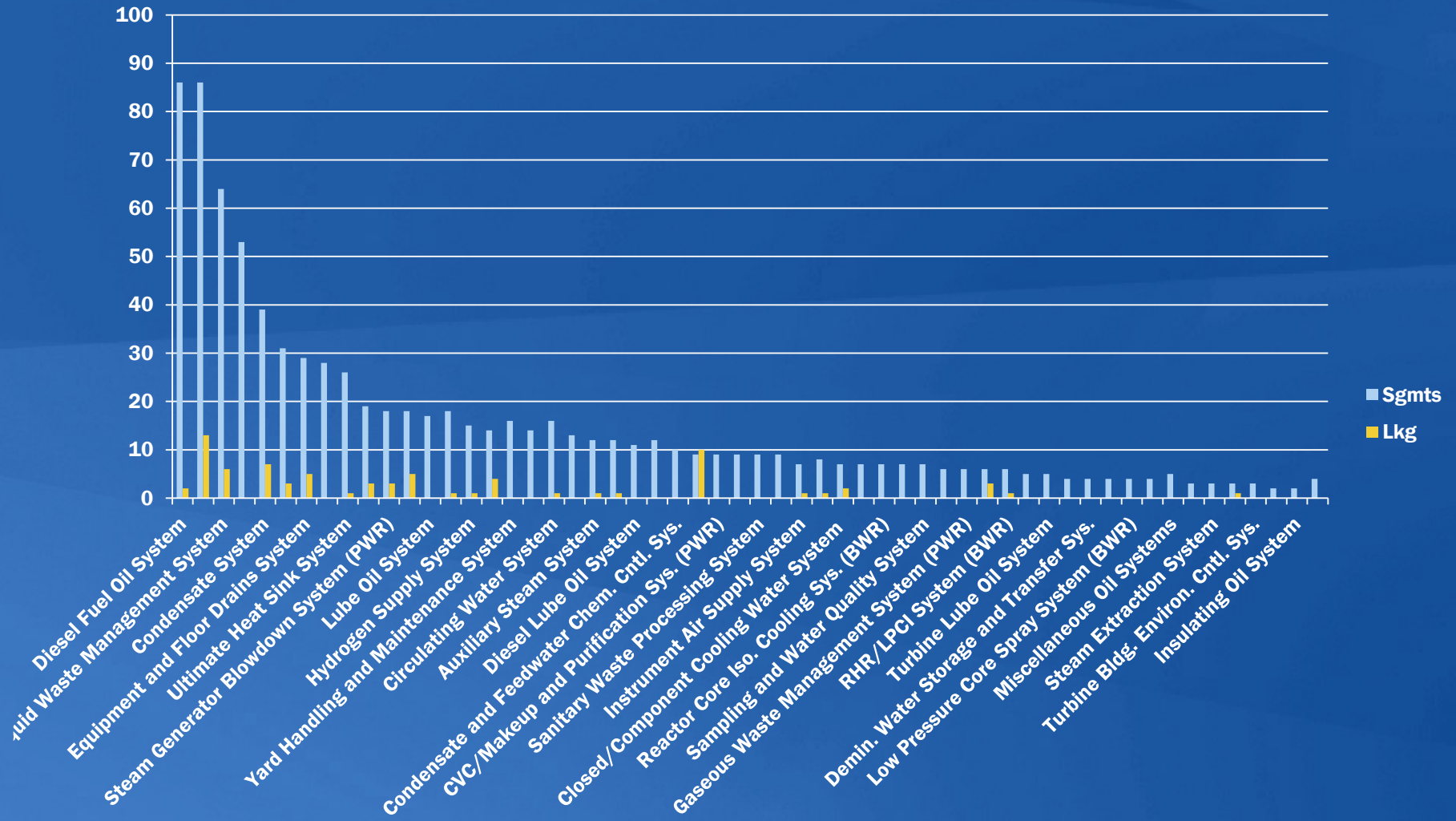
- **Summary of industry survey**
- **Addresses important underground systems**
 - **Design information**
 - **Leakage information**
- **Variability of important systems**
 - **Plant specific interpretations**

General Observations

Principle Buried Systems

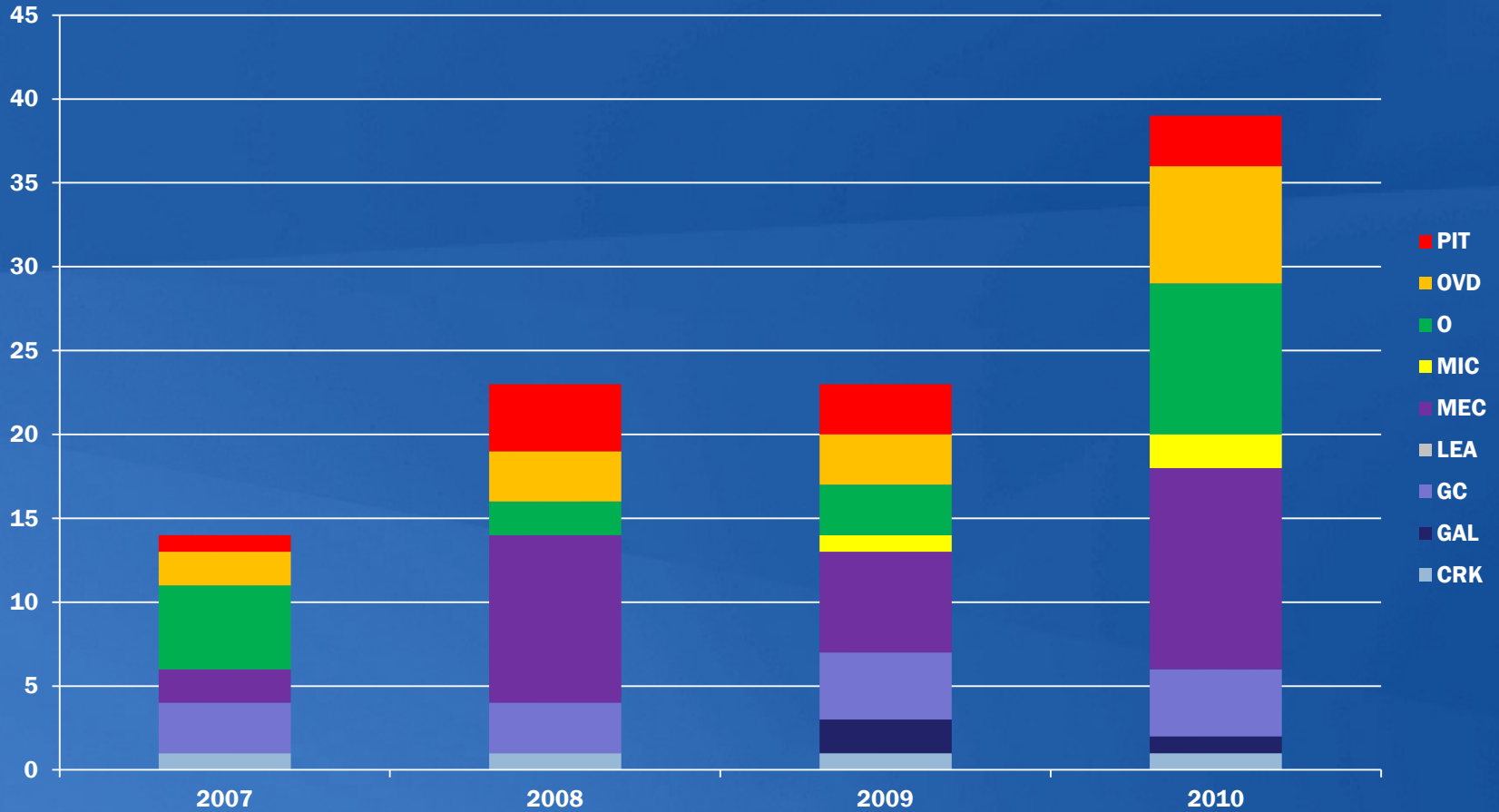


Leakage Events



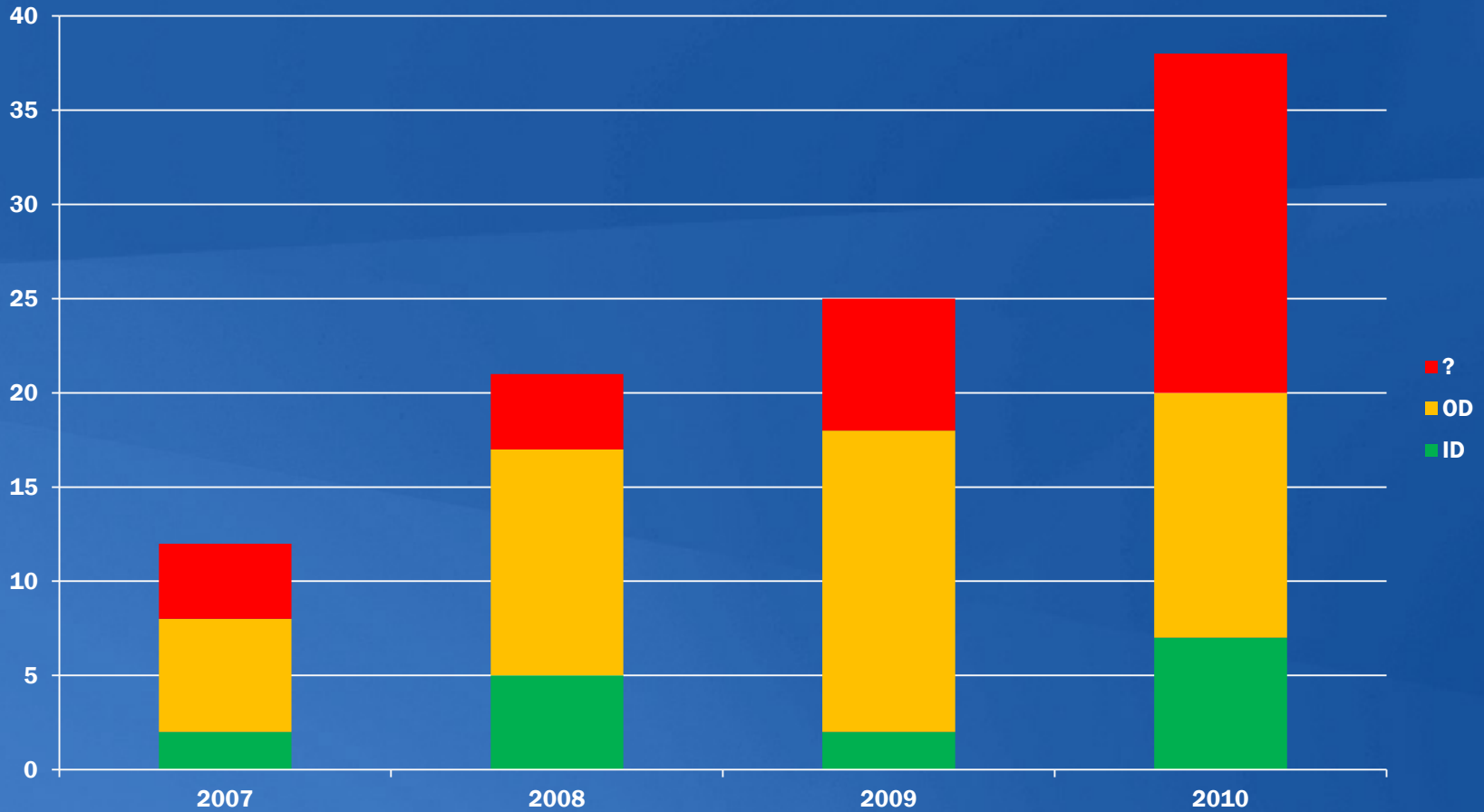
General Observations

Leak Cause Codes by Year



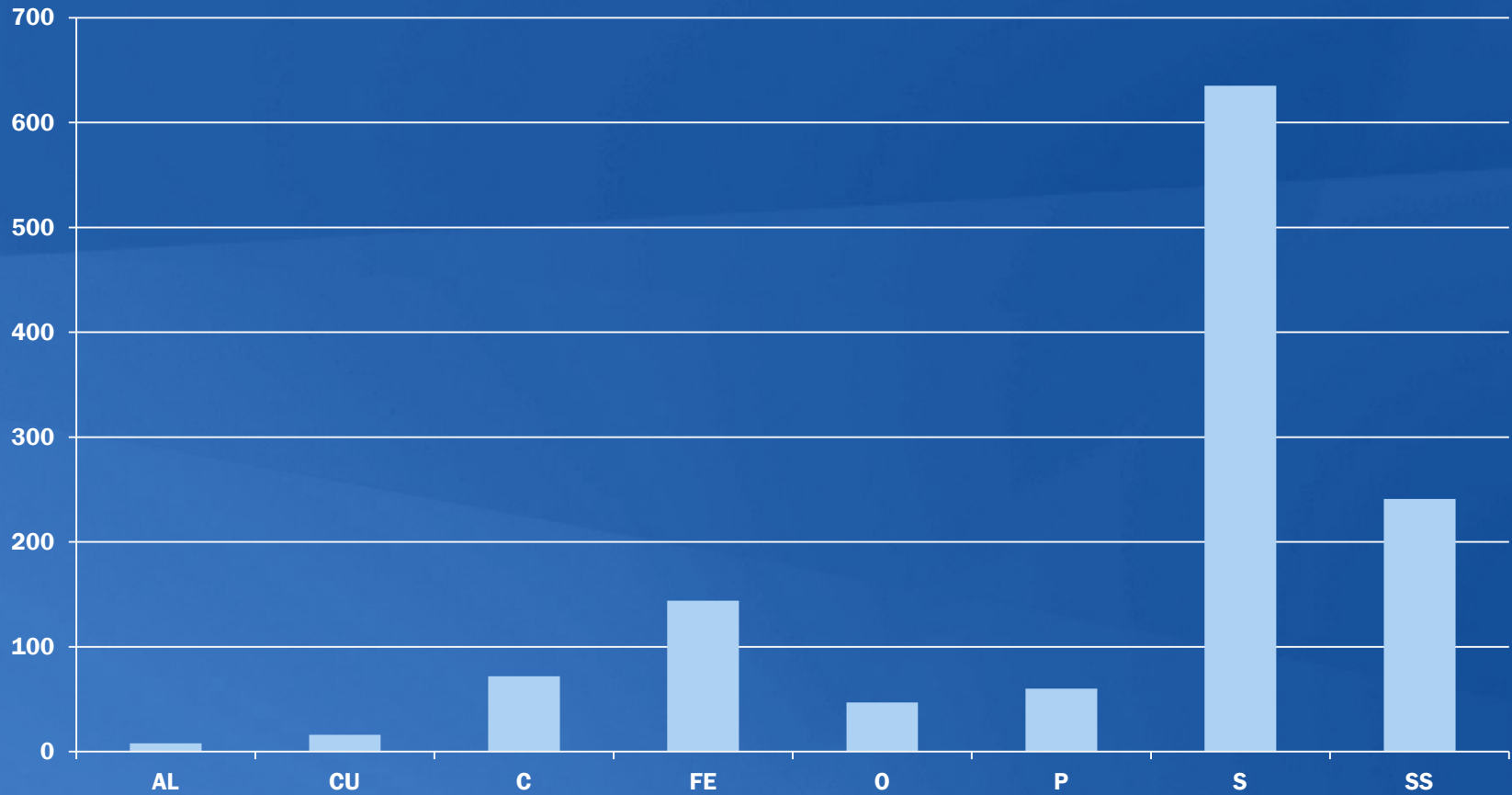
General Observations

Leak Initiators by Year



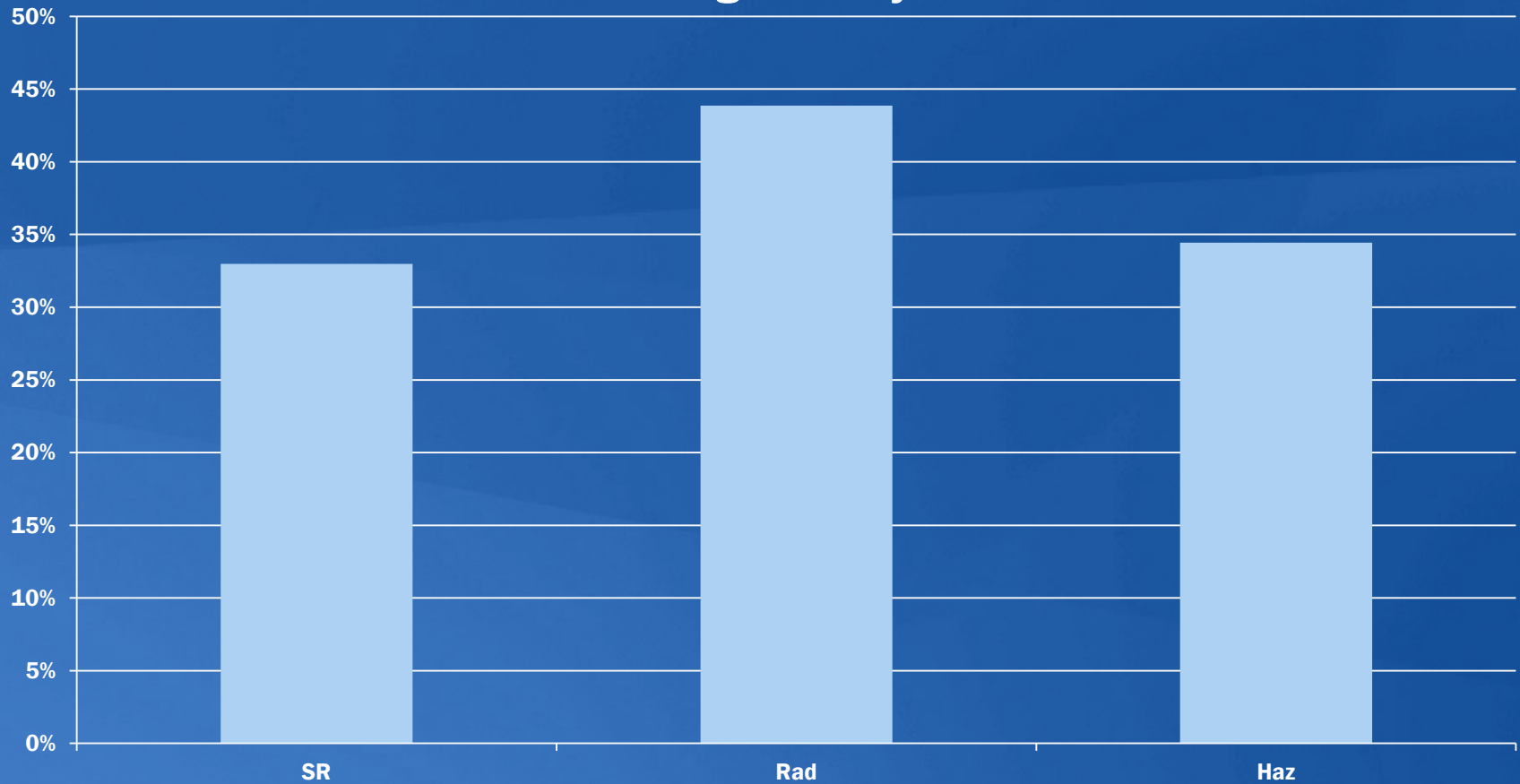
General Observations

Materials of Fabrication



General Observations

Percent of Buried Segments by Classification



Summary

- **Buried Piping Integrity Initiative is an ongoing industry commitment**
- **Buried piping leakage information**
 - **Leakage slides indicate a change in the leak reporting threshold, not leakage trends**
 - **Specifics of buried piping design varies significantly between sites**
 - **Systems with buried segments**
 - **Materials of construction**
 - **Amount of buried piping**
 - **Depth of burial**