

Underground Piping and Tanks Initiative - Update

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Overview

- Initiative Change
- Identifying Outliers
- Initiative Implementation Report

UPTI Changes

- UPTI revision approved by NSIAC in January 2013
- NEI 09-14 rev 3 issued in May
 - Main changes
 - Incorporated Initiative changes
 - Guidance for crediting inspections performed in other programs
 - Deviation process in its own section
 - Emphasizes sharing of significant OE and program issues

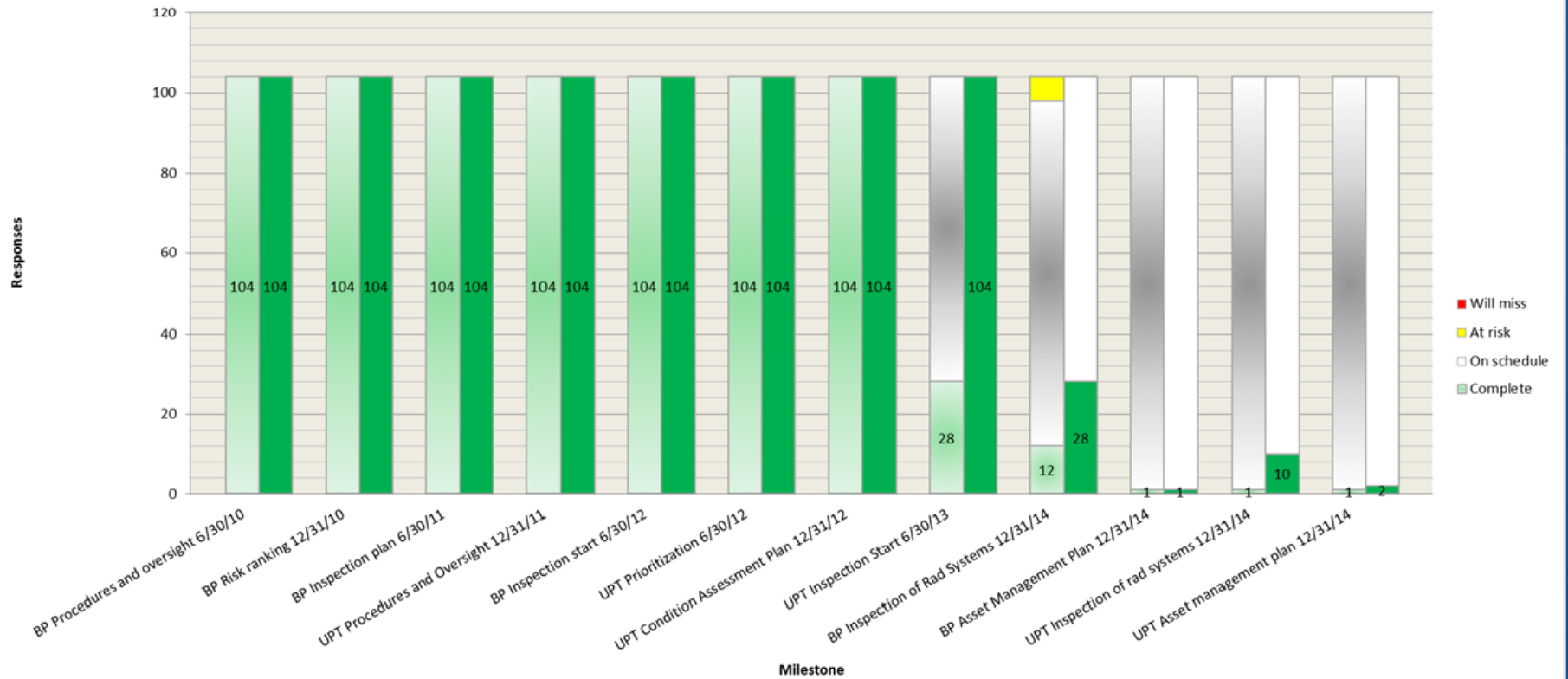
Identifying Programmatic Outliers

- How do we identify
 - Differences in Initiative conformance
 - Outliers in Initiative implementation or interpretation
- Methods
 - Utilities communicate OE and program issues (NEI 09-14, section 5.1) to NEI / BPITF
 - INPO plant evaluation feedback
 - OE discussion at BPIG



Overall Implementation Status

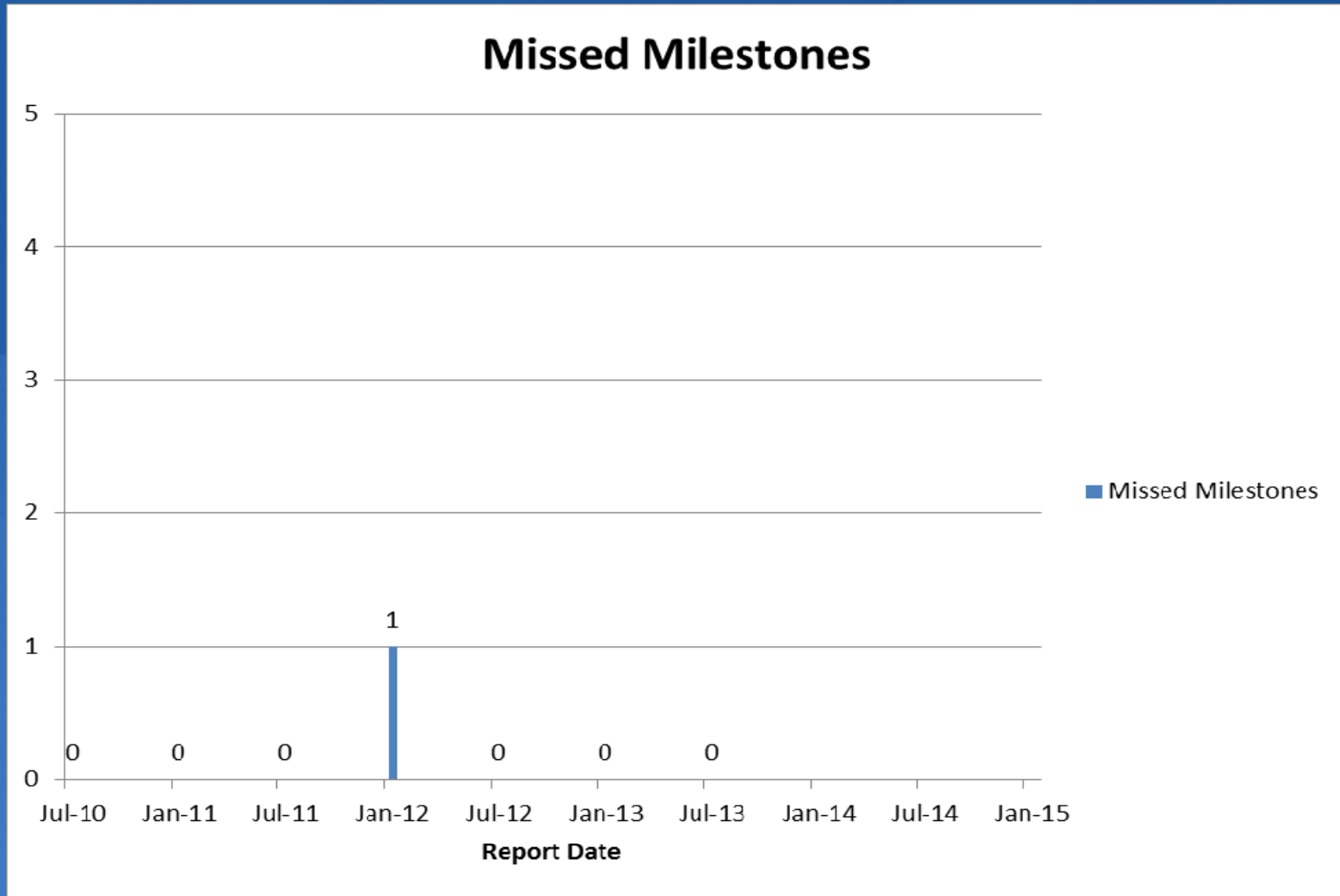
Status as of July 2013 (left bar in each pair is status from 6 months ago)



Overall Implementation Status

- All plants have completed the first eight milestones.
 - Initiative revision changed some milestones from “at risk” to “on schedule”
- Positive or stable trends are indicated on each milestone
- Applicability of Initiative to shutdown plants must be determined

Milestone Trends



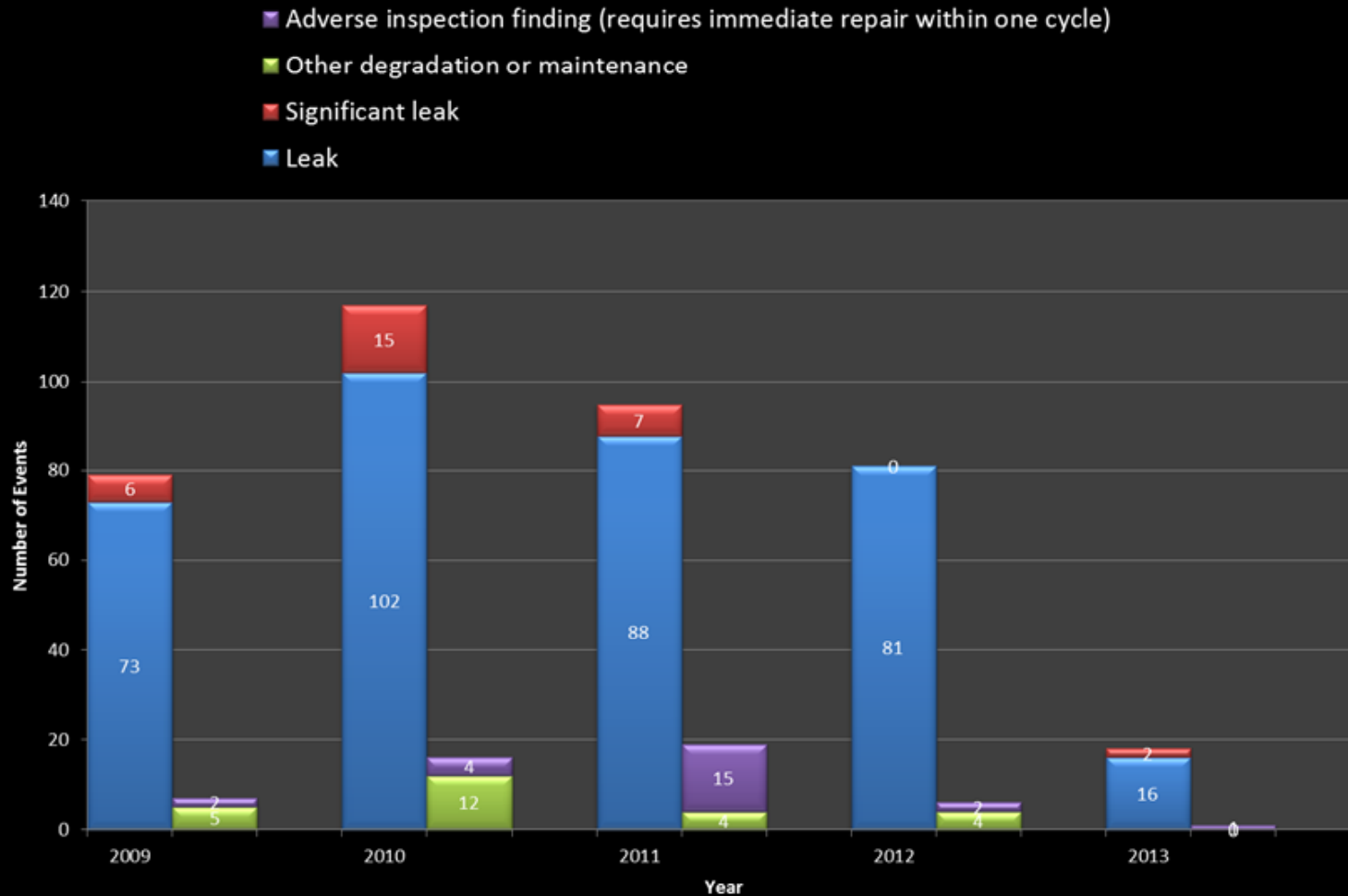
NEI 09-14 INPO Responsibilities

- Evaluate programs
- Communicate issues to the industry
- Compile and report operating experience to NSIAC

INPO

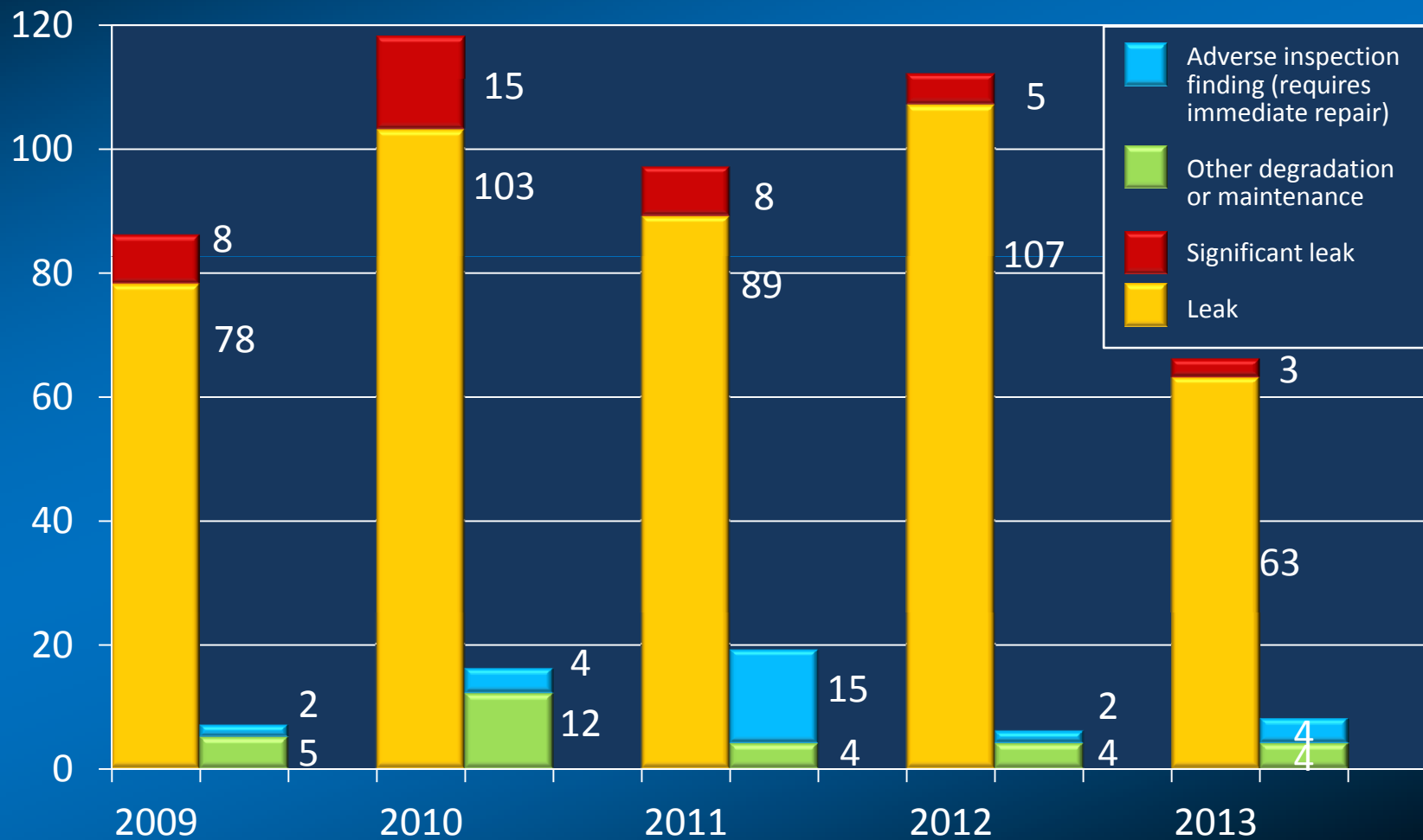
Operating Experience

ICES Reporting July 2013
Number of Reported Events by Year and Failure Mode



September 2013 Number of Reported Events by Year and Failure Mode

Source: ICES

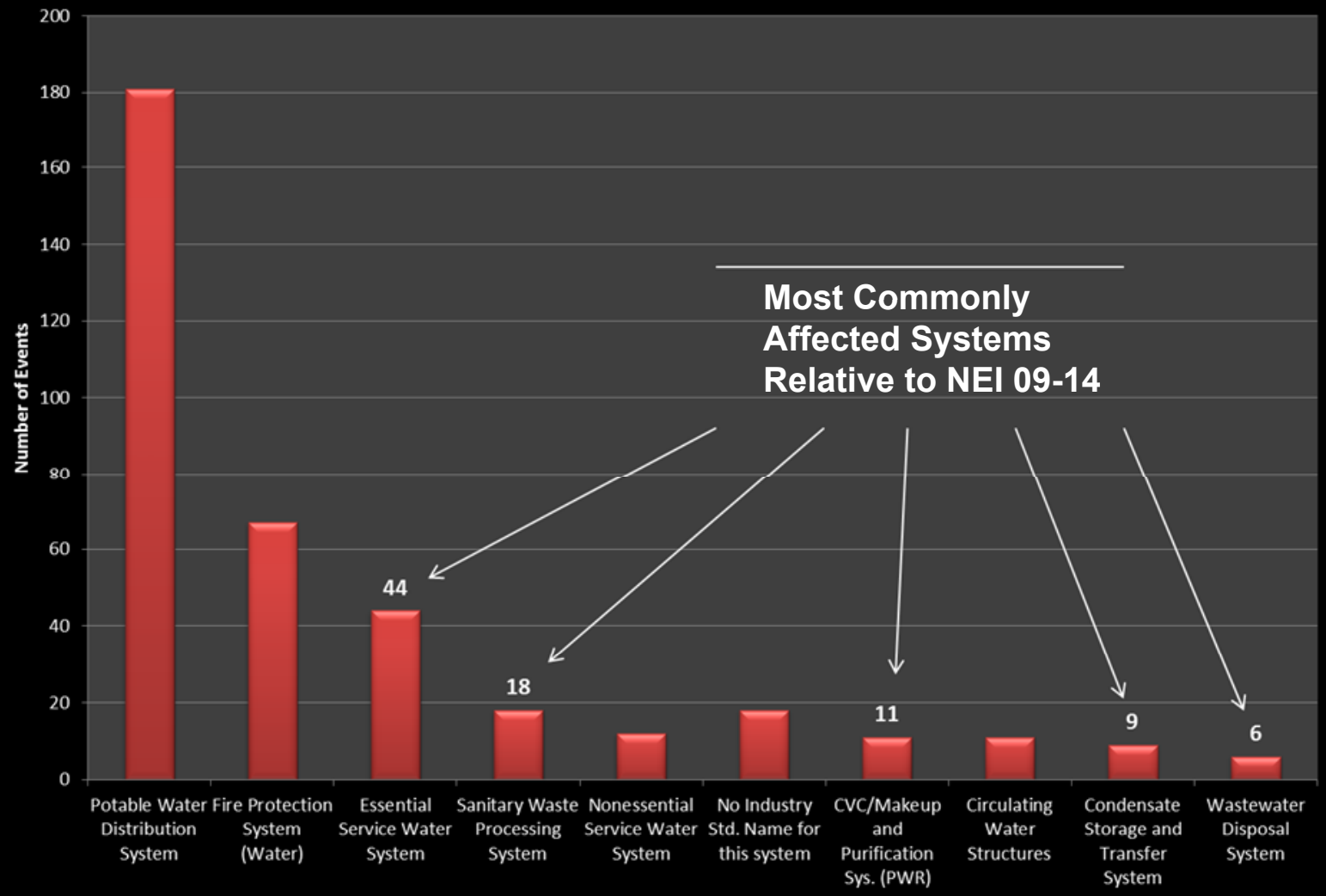


Operating Experience

- Decline in reported leaks due to remediation and possibly to attention to cathodic protection
- Number of reported inspection findings has varied
 - Not all systems inspected yet
 - Possible inspection transient
 - Lag in reporting events (50 day expectation)
- Events should not be interpreted as definite indication of a trend yet

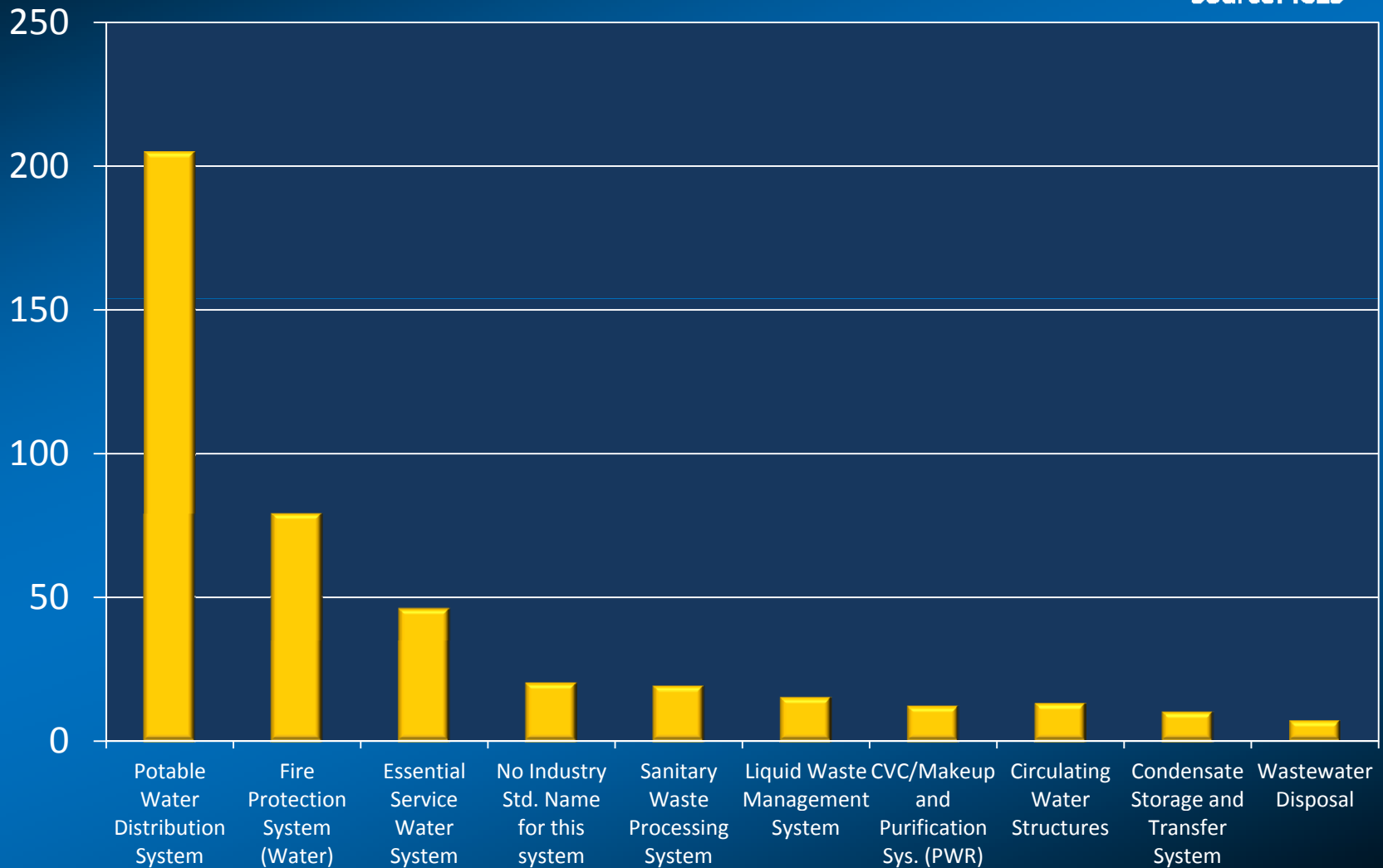
Operating Experience

July 2013 Most Commonly Affected Systems



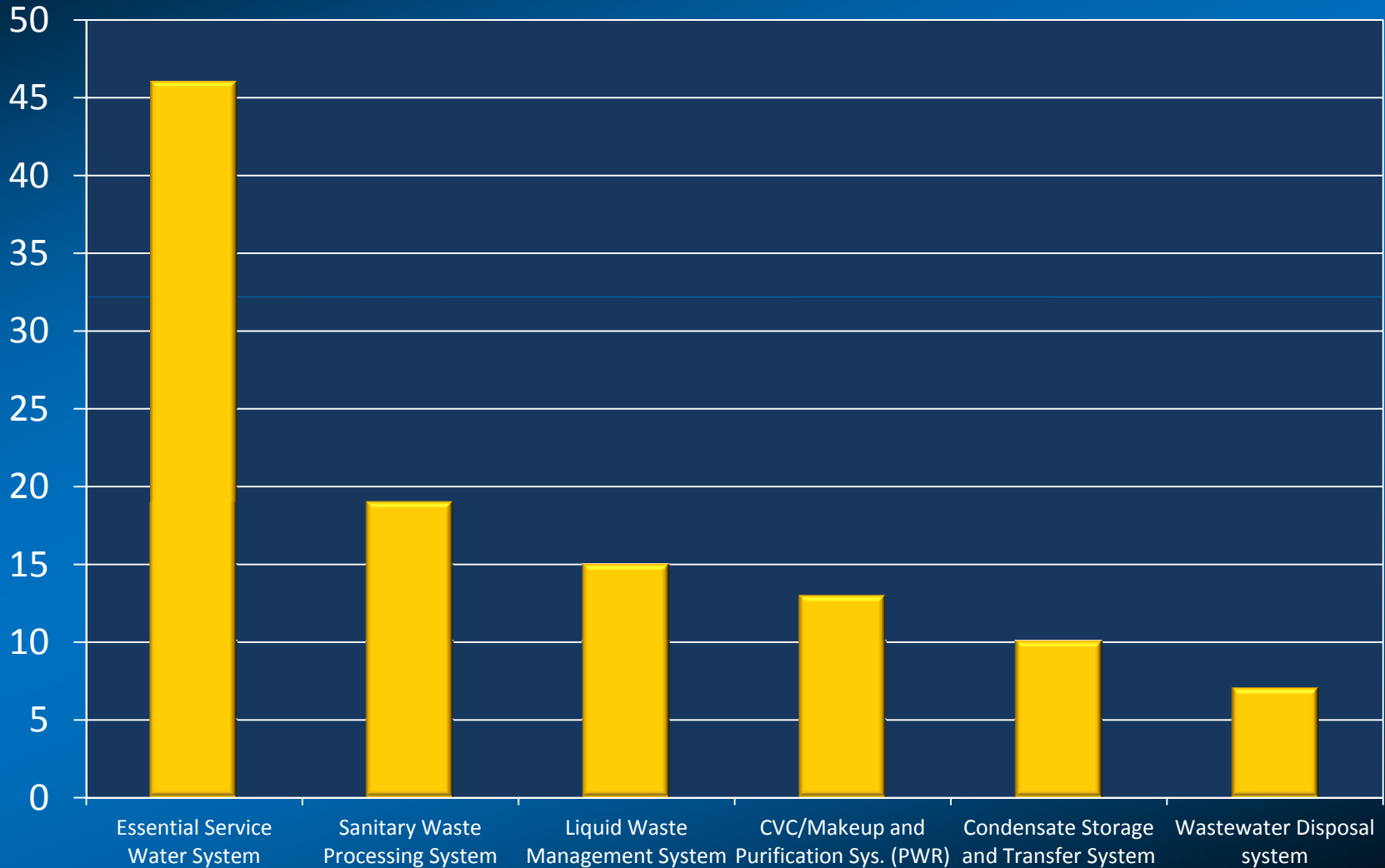
Most Commonly Affected Systems

Source: ICES



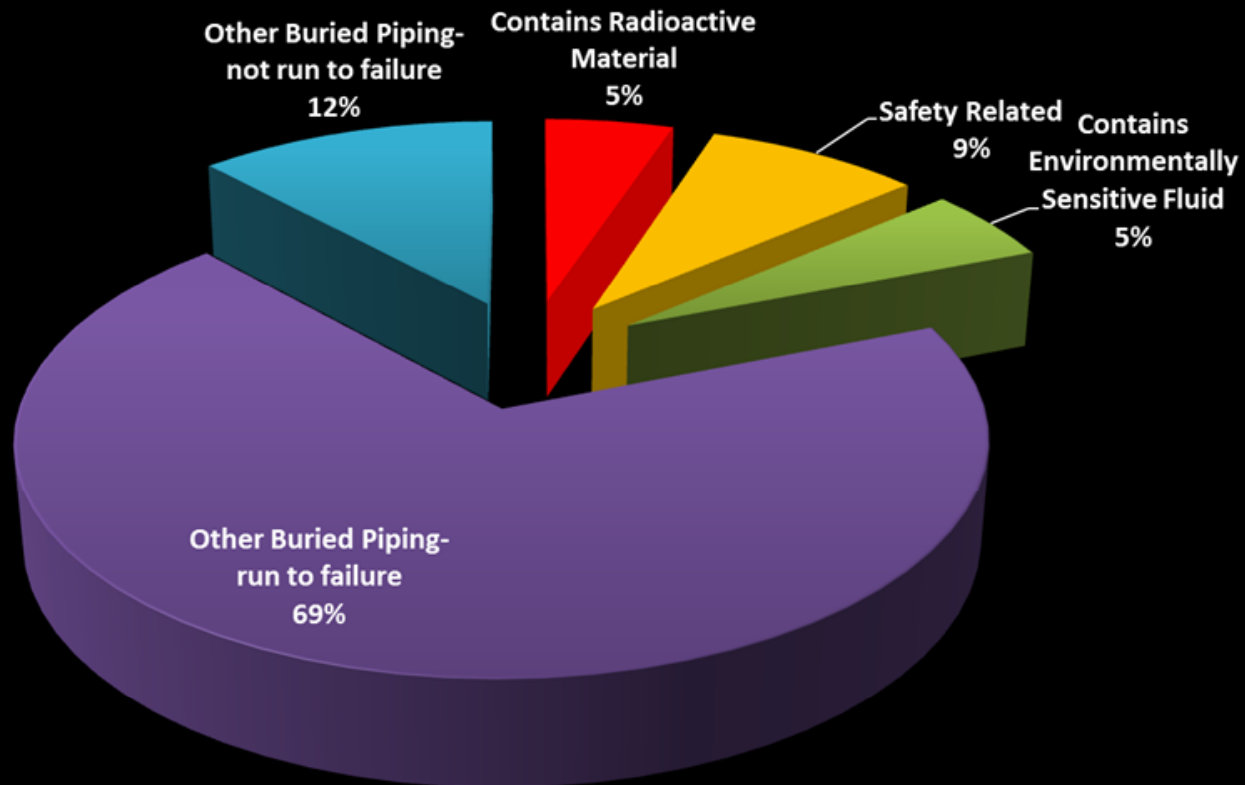
Most Commonly Affected Systems Relative to NEI 09-14

Source: ICES



Operating Experience

Buried Pipe Events Classification



Data source: ICES

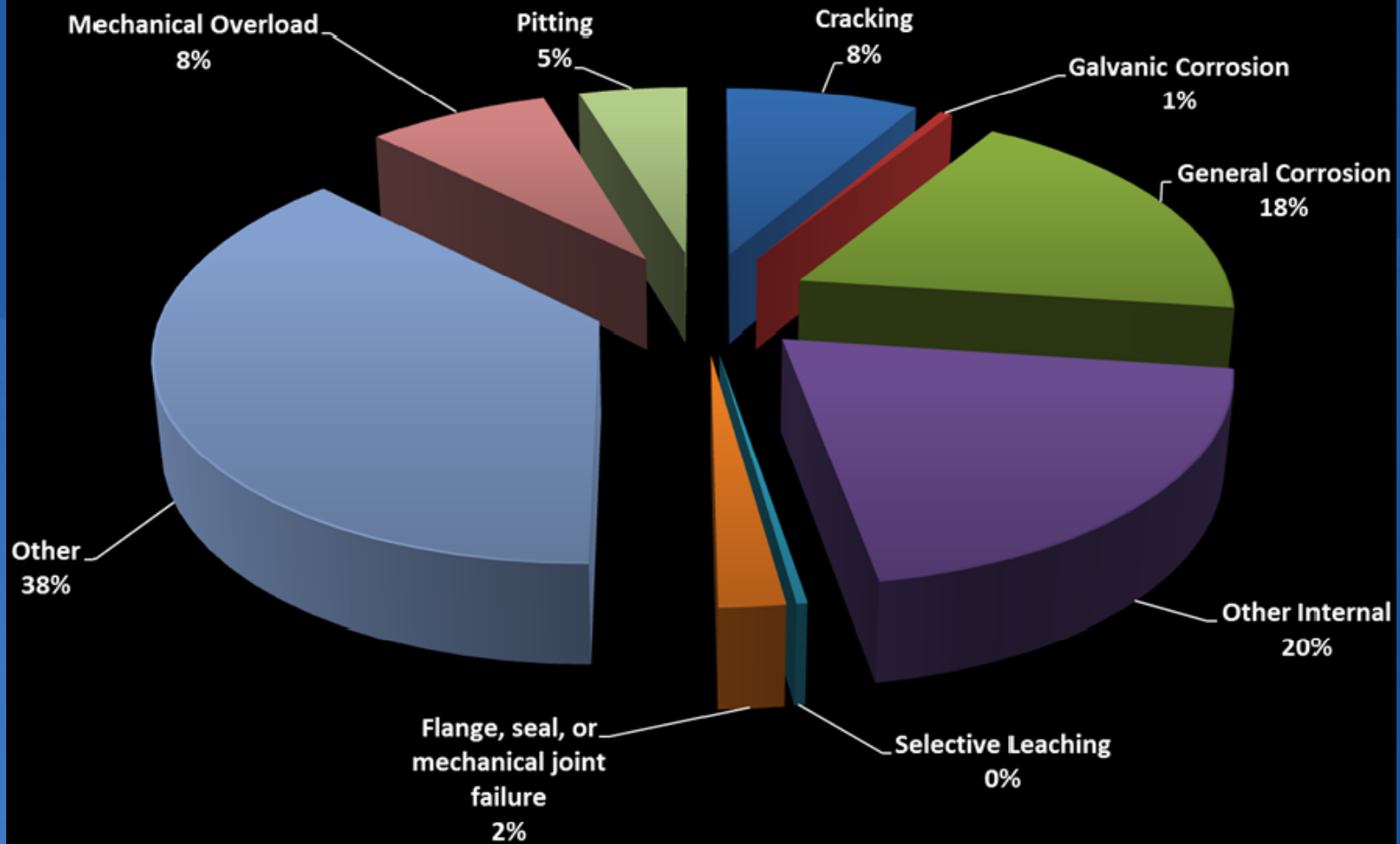


Operating Experience

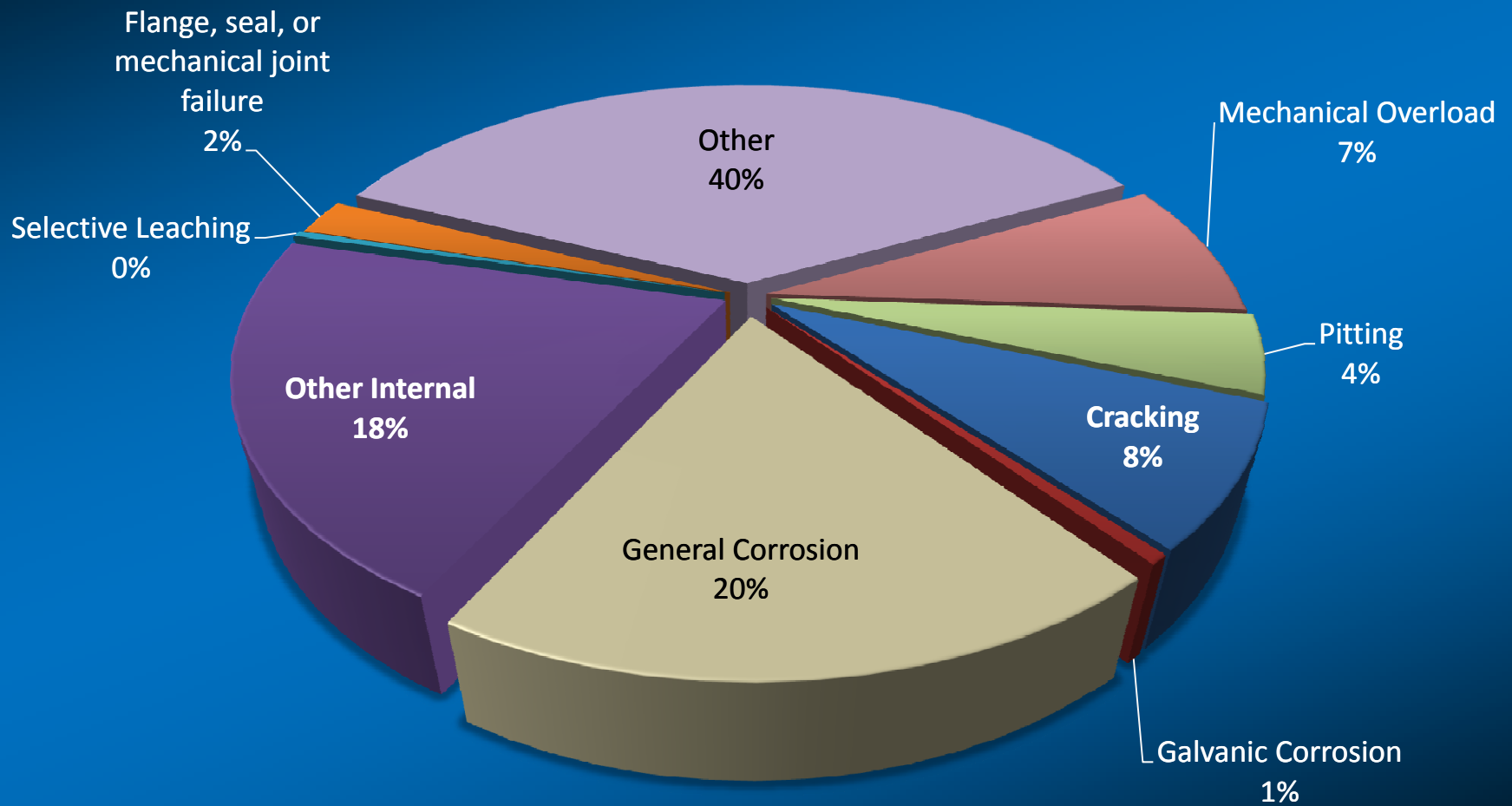
- Plants characterize systems differently; especially which systems are “run to failure”. This different characterization makes interpretation of this data imprecise, but general observations are possible
 - The majority of buried and underground piping degradation is occurring on low risk or “run to failure” systems
 - About 20% of the piping degradation has been on piping that is within the scope of the Initiative (safety related, or contains licensed or environmentally sensitive materials)
 - The relative percentages shown in the chart have not changed significantly since the industry began reporting the data

Operating Experience

UPTI Task Force Failure Cause Codes



UPTI Failure Codes



Source: ICES

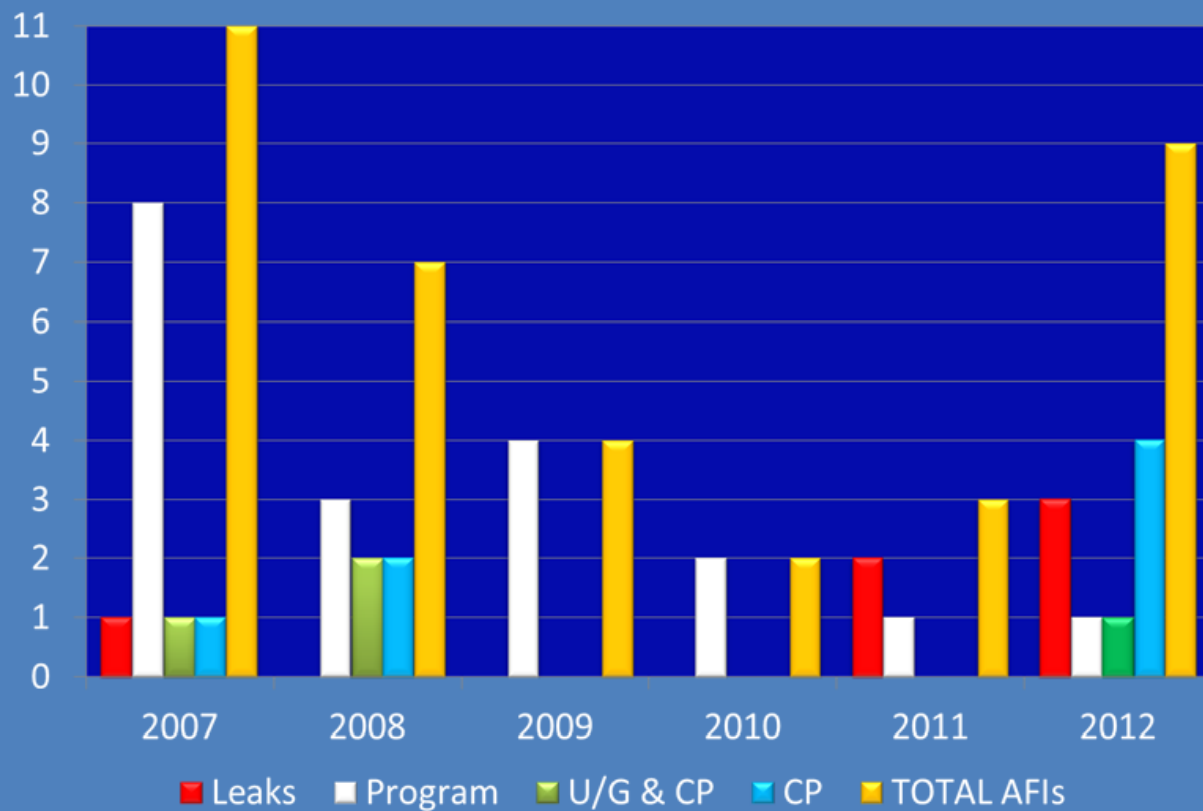
Operating Experience

- The major reported failure cause is “other”
 - Use of this categorization (essentially a default) makes an evaluation of failure trends difficult
- BPITF considering changes to “cause codes” to provide better feedback on the data

AFI Review

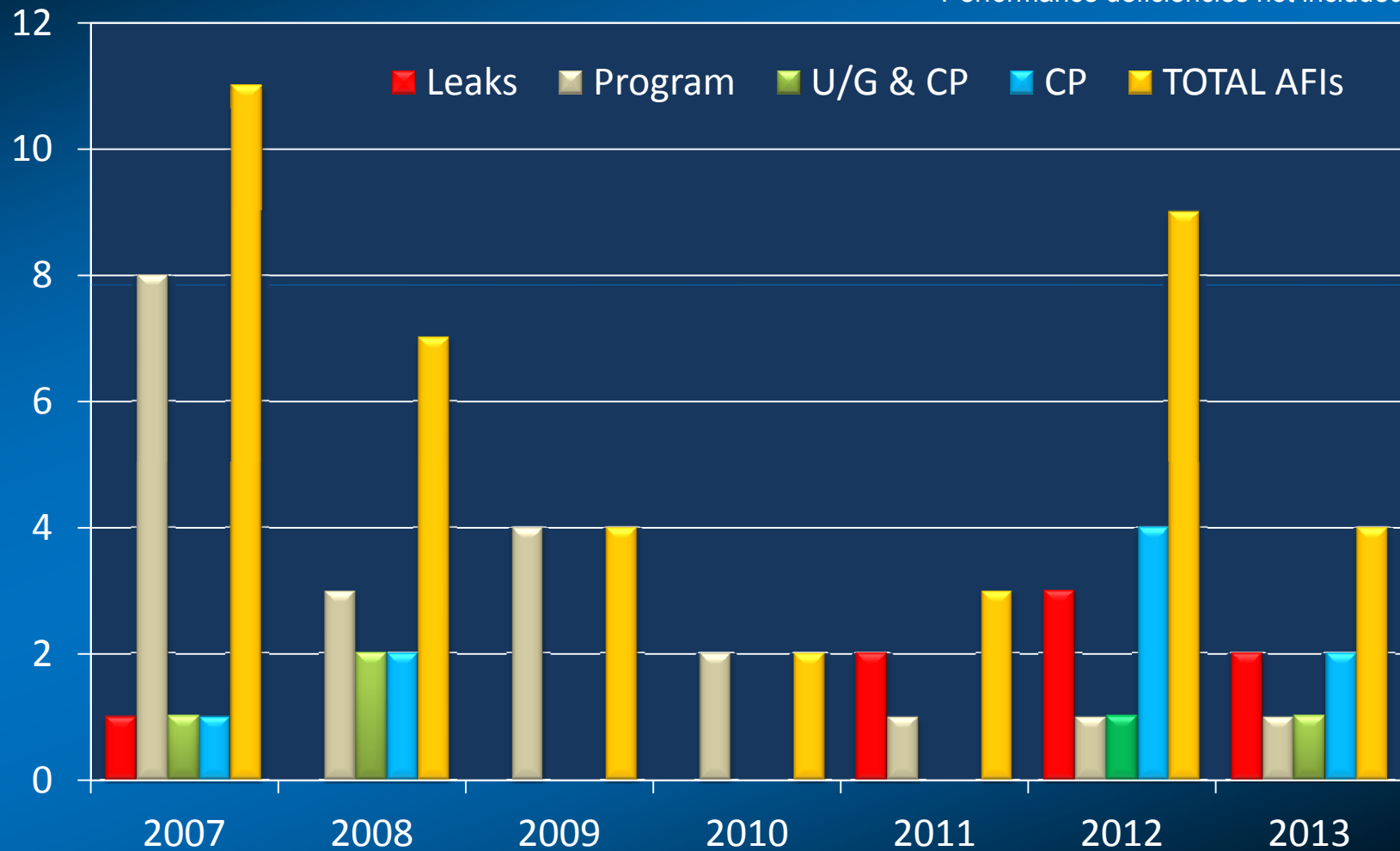
Categories of AFIs

- Leaks – Actions taken to address a leak
- Program - Gaps in implementing elements found in the program or industry initiative
- U/G & CP - Combination of leak, program, and cathodic protection (CP) gaps
- CP - Exclusively for gaps in the cathodic protection program or equipment.



Areas for Improvement

Performance deficiencies not included



AFI Review

- General AFI observations
 - 2007 – 2009: lack of underground piping program monitoring and health assessment.
 - 2011 and 2012: focused on implementation of NEI 09-14 , safety related service water or radioactive piping leaks, and mitigation of leaks
 - Gaps in the CP (cathodic protection) program have increased as the role of cathodic protection is better understood

AFI Review

- In 2012, 4 AFIs on cathodic protection and 5 on underground piping
 - Improvement needed on
 - Risk ranking review
 - Extent of condition determination
 - Source of leaks
 - Inputting results in ICES
 - Cathodic protection health or none installed

2013 AFI Summary

- Four AFIs; Six Performance Deficiencies
 - Two – underground piping
 - Eight – cathodic protection
- Improvement needed
 - Degraded coatings and cathodic protection not working
 - Cathodic protection equipment work prioritization
 - Cathodic protection site knowledge weaknesses
 - Leaks occurring and the source is not determined

INPO

AFI Review

■ Positive Findings

- Zero leak tolerance – especially in piping containing radioactive fluids
- Failure causes are being identified
- Risk ranking challenge boards are being established
- Cathodic protection installed
- Effective station and corporate oversight
- Healthy collaboration between UP, CP and GW



- Effective use of corrective action program

EPRI NDE Technology Update

- 10 UPT NDE projects focusing on development, assessment, and implementation of NDE technologies
- Acquiring UPT research results from the Pipeline Research Council International (PRCI)
- Establishing a framework to assess the reliability of guided wave inspection results
 - Use as an examination method instead of screening tool
 - Concept presented to the industry and to NRC staff
 - Positive feedback
- “Buried Pipe Nondestructive Evaluation Reference Guide—Revision 2” publically available at no cost.
- Continued interest in using in-line inspection technology
 - Use limited due to contingency considerations



Overall Observations

- Initiative change has reduced the risk of missed milestones
- No major new observations on leakage trends or Initiative implementation
- Development of guided wave UT is important
- BPITF emphasizing ways to identify Initiative “outliers”
 - INPO report
 - BPIG feedback
 - NEI 09-14 reporting

Overall Observations

- Applicability of Underground Piping and Tanks Integrity Initiative to shutdown plants
 - UPTI not applicable to plants that have been permanently shutdown once their decommissioning plan addresses components that would otherwise be in-scope