

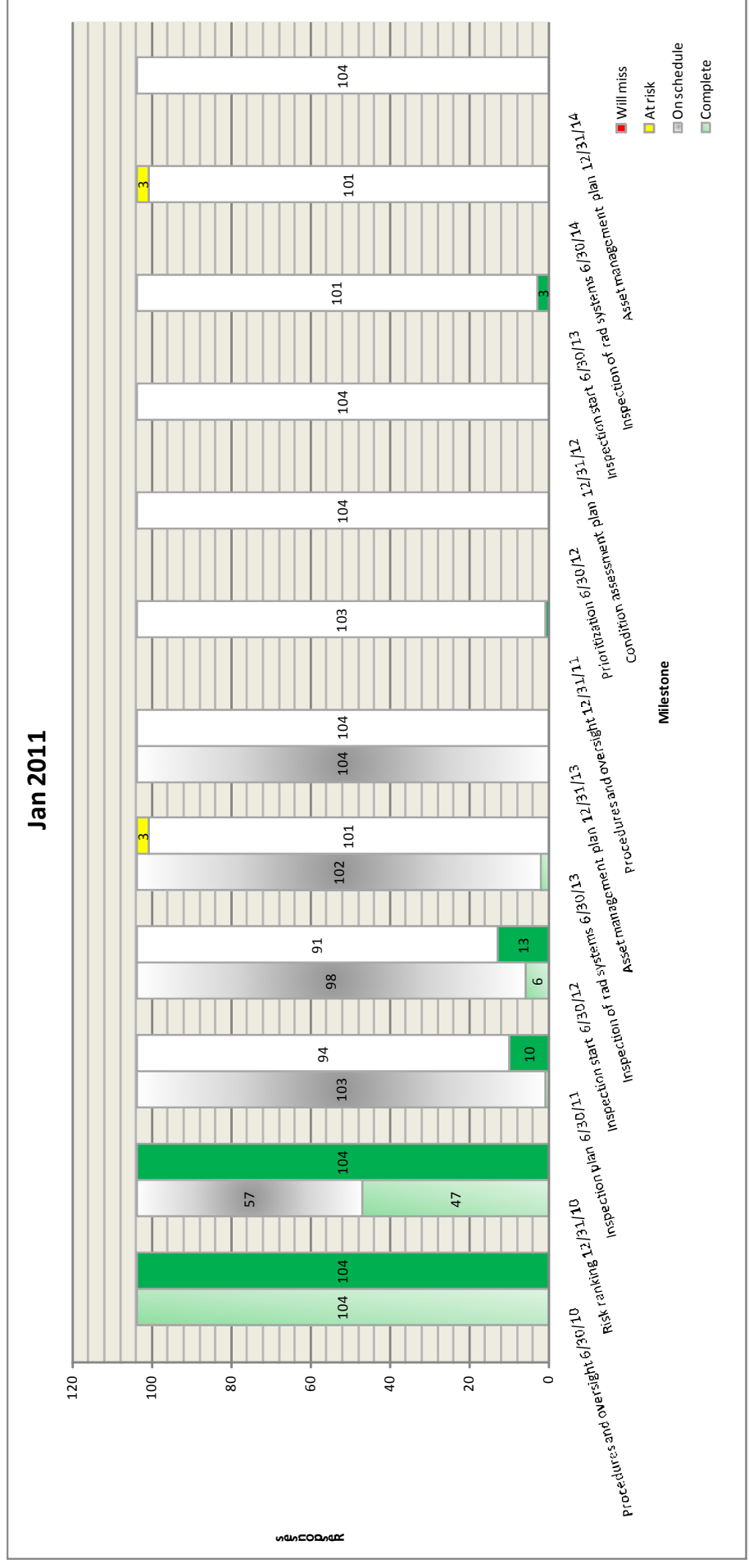
## Underground Piping and Tanks Initiative Semi-Annual Report

### **Background**

When NSIAC approved the Buried Piping Integrity Initiative in November 2009 and the Underground Piping and Tanks Integrity Initiative in September 2010, it asked for a semi-annual report on the status of related industry events and efforts. Four areas were to be covered: milestone status, leakage trends, NDE development, and overall assessment. The January 2011 report follows.

### **Milestone Implementation Status**

The chart below captures the status of each of the milestones included in the Underground Piping and Tanks Integrity Initiative. The light green and gray bars indicate data from July 2010 (when only the Buried Piping Integrity Initiative was in place and only its 6 milestones were in effect). The dark green and white bars indicate data from January 2011.

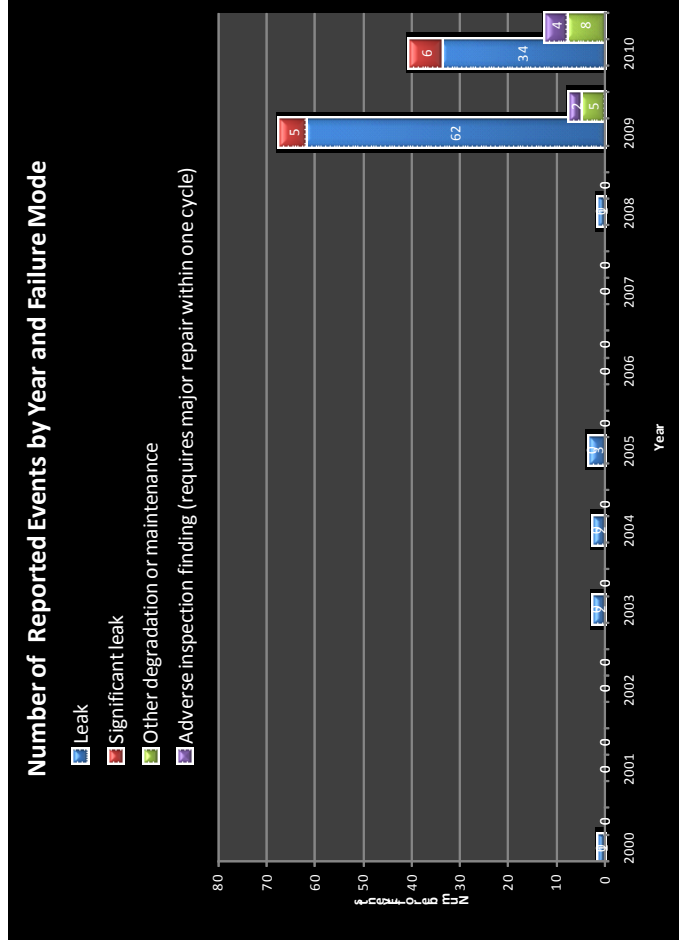


The following observations are offered on the above data:

- Chart colors: green=complete, white or gray=on schedule, yellow=at risk, and red=will not meet
- All plants have met the first and second milestones
- No deviations to the Initiative have been reported
- All plants report that they are on schedule for future milestones except one utility (3 plants) which reported that inspection start is at risk pending publication of a document that provides guidance on inspection planning. The Buried Piping Integrity Task force is working on this guidance and it should be completed before the middle of this year.
- One utility reported that inspections of all of its "rad systems" was complete in July, but not complete in January. That is because the utility discovered additional contaminated piped after the July 2010 report.

**Trends: Leakage and Adverse Inspection Findings**

The three charts below capture trends in leakage events and inspection findings.



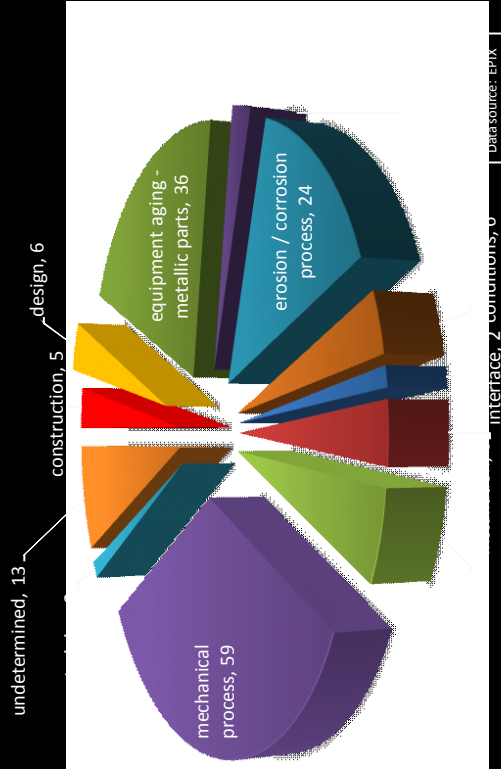
Notes to this chart:

The data was obtained from INPO's EPIX system in early January. All of the events in 2010 may not have been reported at that time.

Significant leaks are those that Exceed NRC or EPA limits, or are reportable under the Ground water Protection Initiative, or result in a system or component being out of service.

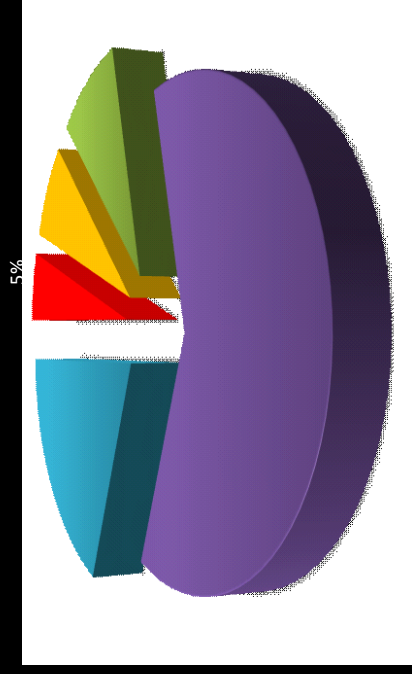
Adverse inspection findings are those that require repairs within one cycle.

## Failure Causes (general)



## Buried Pipe Events Classification

- Contains Radioactive Material
- Contains Environmentally Sensitive Fluid
- Other Buried Piping-not run to failure
- Safety Related
- Other Buried Piping-run to failure



The following observations are offered on the data in the above three charts:

- It is not possible to conclude that any leakage trends have been established under the industry's "Enhanced Inspection and Environmental Monitoring Initiatives". The trend has not been monitored for sufficient time and leakage events from 2010 may not have been reported at the time the above data was collected.
- The majority of leaks are inconsequential (coming from "run to failure" or other buried piping).
- Significant leaks amount to about 7 to 15% of total and the number of these leaks was approximately the same in 2009 and 2010.
- Historically, approximately 12% of leaks occur in systems that are safety related or contain licensed material. However this observation may be biased by data prior to 2009 when the leaks that were most likely to be reported were significant ones.
- The three major reported failure causes were mechanical processes, equipment aging, and erosion/corrosion. It is difficult to relate these general EPIX cause codes to buried piping events. Failure causes will be aligned to specific piping issues in data reported beginning in 2011.

## **NDE Technology Update**

- EPRi issued a buried pipe NDE reference guide last August (Report 1021626). This guide describes various in-line and outside pipe non destructive examination technologies.
- Inspection methods and delivery tools are available; however vendors have limited resources, are in demand at other industries, and have limited experience in the nuclear industry.
- Challenges:
  - Appropriate implementation methods for the inspection technologies must be developed.
  - Technological capabilities and processes are not well documented for nuclear application
  - Industry's inspection schedules will be aggressive
  - Technologies must be demonstrated in the field
- Industry is working on these challenges through the EPRi Buried Piping Industry Group (BPIG). One important part of their effort is to communicate industry needs and expectations to vendors. Semi-annual BPIG meetings include vendors and vendor demonstrations.

## **Buried Piping Integrity Task Force Observations**

- Utilities are implementing the Underground Piping and Tanks Initiative milestones as scheduled.
- It is important to keep the focus and necessary funding applied to inspection tool development.
- The industry's inspection guidance document, referred to as the "reasonable assurance document", is important. It will provide an acceptable approach to planning inspections such that the Initiative's goal of reasonable assurance of the structural and leakage integrity of buried piping is achieved. The Buried Piping Integrity Task Force should complete an initial version of this document by the middle of this year.
- Utilities need to start communicating their schedules for inspection resource needs so that the necessary planning can occur to avoid shortages. This communication should occur through the EPRi BPIG.
- A workshop to address coordination between the Underground Piping and Tanks Integrity and Ground Water Protection Initiative (collectively referred to as the Enhanced Inspection and Ground Water Monitoring Initiatives) will be held this summer. A document that will provide guidance on this coordination is already being developed and should be available by the middle of this year.