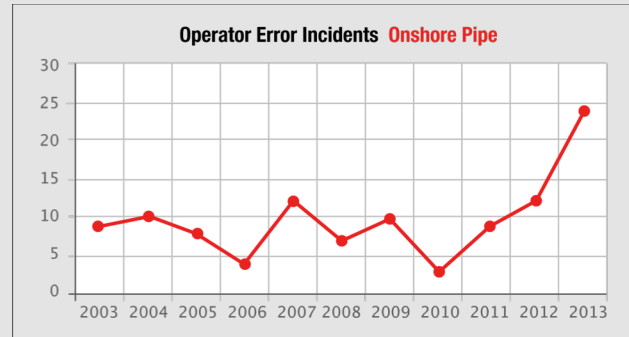


## PPTS OPERATOR ERROR DATA

### Overview

A review of PPTS data suggests that onshore pipeline incidents resulting from operator error have risen dramatically since 2010. Although the median release volume of these incidents remains relatively small, 3.4 bbls, some individual incidents involve relatively large release volumes. It is difficult to draw distinct conclusions from this data because the sample size is relatively small (108 total from 2003-2013 or 8.5% of the total). As such, trends indicating specific areas of focus are not readily identifiable.

However, a broad overview of the data suggests that renewed focus on some basic management best practices could help reduce incidents caused by operator error.



For operator error incidents that occur within facilities, the data does not show a similar, drastic increase since 2010. However, the data does indicate that the largest share of incidents<sup>1</sup> result from tank overfills/overflows. More than half of the tank overfills/overflows involve sumps/separators. Given this fact, pipeline operators consider installing overflow indication on sumps/separators and reviewing procedures for responding to indications from these devices.

### Management Best Practices

Pipeline operators should consider installing the following best management practices in an effort to reduce releases resulting from operator error.

- Emphasis should remain on installation of new equipment and components with accurate specifications for the installed application as well as proper installation per the manufacturers' recommendations as 20% of incidents<sup>2</sup> resulted from equipment failure due to operator error.
- Focus should remain on reviewing and updating procedures to ensure that they remain accurate and relevant for these tasks as 62% of incidents occurred during normal operations and maintenance activities.
- Special consideration should be given to processes for new construction including pre start up checks that effectively identify items that could lead to a release prior to placing new equipment into service as 16% of incidents<sup>3</sup> occurred during construction activities.
- Focus should remain on effective training programs for employees to provide them the knowledge and skills needed prior to performing job tasks and at periodic intervals to ensure retention as 79% of incidents<sup>3</sup> identified failure to follow procedure as the cause. Deviations from established procedures should be reviewed. Planned deviations should follow a process to allow for review and approval.
- Consideration should be given to how contract personnel fit into the management best practices described above, as incidents<sup>4</sup> are just as likely to involve contractors as direct employees.

<sup>1</sup> Facilities piping incidents caused by operator error from 2010-August 2014 in PHMSA data.

<sup>2</sup> Onshore pipe incidents caused by operator error from 2011-2013 in PPTS. Equipment failure due to operator error was not an available choice prior to 2011.

<sup>3</sup> Onshore pipe incidents caused by operator error from 2009-2013 in PPTS. Additional, detailed questions regarding operator error were included in the PPTS survey in 2009.

<sup>4</sup> Onshore pipe incidents caused by operator error from 2007-2013 in PPTS.