



Bureau of Safety and Environmental Enforcement



SafeOCS SPPE Briefings for Industry

Michael Pittman, Chief, Risk Assessment and Analysis Branch, BSEE

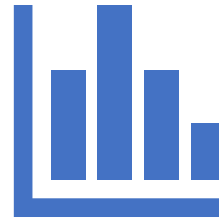
Demetra Collia, SafeOCS Program Director, BTS
Allison Fischman, Safety Data Analyst, BTS

July 13 and 14, 2021

Agenda



SafeOCS SPPE Program Drivers



Findings from Recent Annual Reports

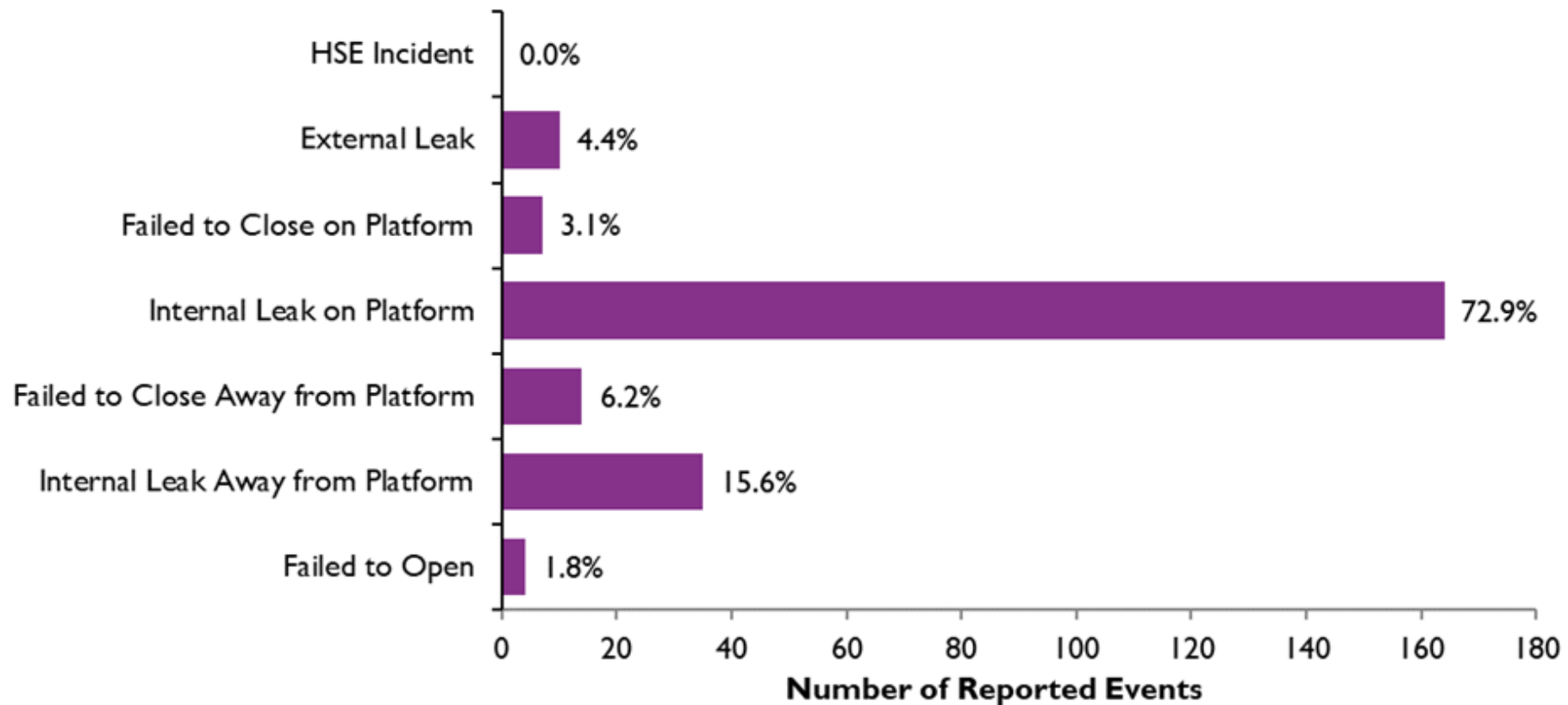


Partnership with BTS: SafeOCS Data Processing and Evaluation

Why Safety and Pollution Prevention Equipment Failure Reporting?

- Post-Macondo renewed focus on low frequency, high consequence events
- [Exprosoft report](#): Causal factors of LWC events worldwide 2000-2015
 - “Should there be a large spill caused by a LOWC event, the risk analysis indicates that with around a 40% probability, it will occur during exploration drilling from a floater. The proportion from a producing well is close to 30%, and from a workover event is around 20%. If there should occur a large spill during production, it is likely to be caused by an external load as a hurricane.”
- BSEE and Industry concurred on the benefit of a more comprehensive and formalized reporting for critical safety equipment failure
- 2016: BSEE Production Safety Systems Rule

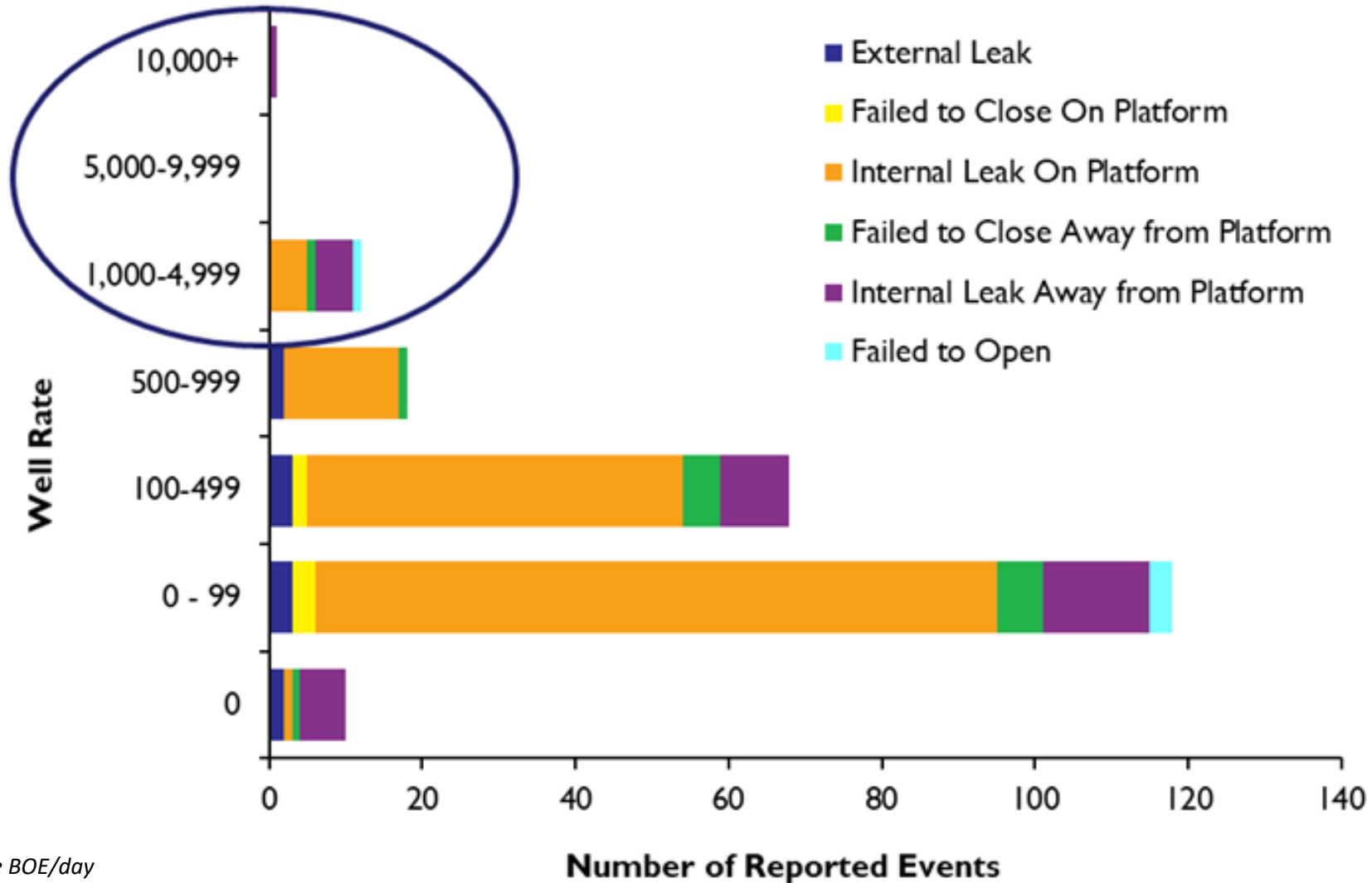
Type of Reported Failure Event in Order of Significance



Type of Reported Failure Events by Type of Valve

Type of Failure	On Platform			Away from Platform		
	SSV	BSDV	GLSDV	SCSSV	SSCSV	USV
<i>External Leak</i>	10	0	0	0	0	0
<i>Failed to Close</i>	5	2	0	9	5	0
<i>Internal Leak</i>	160	3	2	31	1	2
<i>Failed to Open</i>	2	0	0	2	0	0

Type of Reported Failure by Well Rate



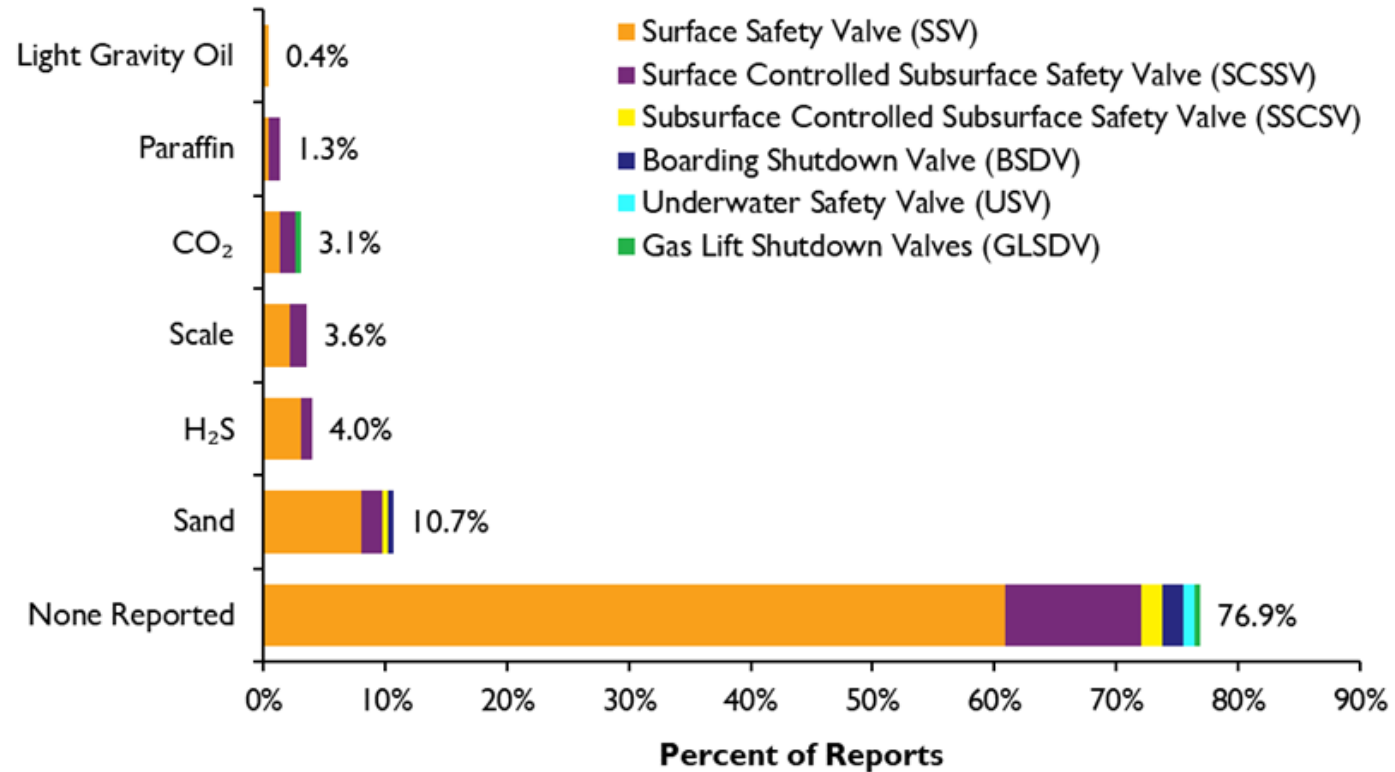
Well rate units are BOE/day
(average produced volumes)

Water Cut Range

Water Cut Range	SPPE Failures	Active Wells	Actual to Expected Failure Ratio
No Production	10 (4.6%)	2,128 (39.9%)	0.12
0%	18 (8.3%)	191 (3.6%)	2.31
0-10%	9 (4.1%)	513 (9.6%)	0.43
10-50%	62 (28.4%)	964 (18.1%)	1.57
50-90%	70 (32.1%)	1,076 (20.2%)	1.59
>90%	49 (22.5%)	463 (8.7%)	2.59
Not Reported	7	-	N/A
Total	218 (100%)*	5,335 (100%)	N/A

❖ A disproportionately higher number of reported failures occurred in wells with 0% water cut or >90% water cut.

Well Stream Contaminants



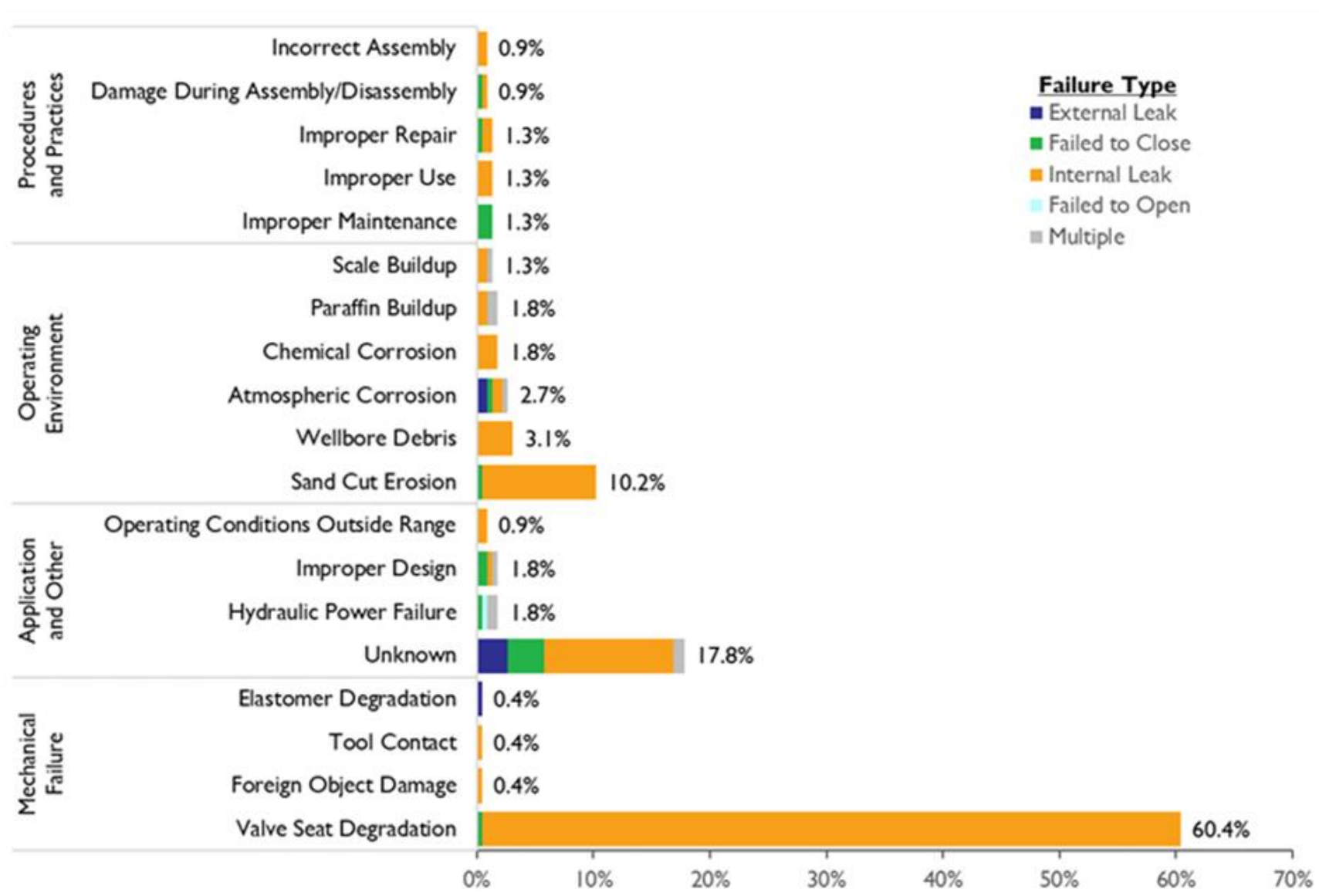
Of the 9 failure reports indicating the presence of H₂S;

- 7 SSV failures
- 2 SCSSV failures

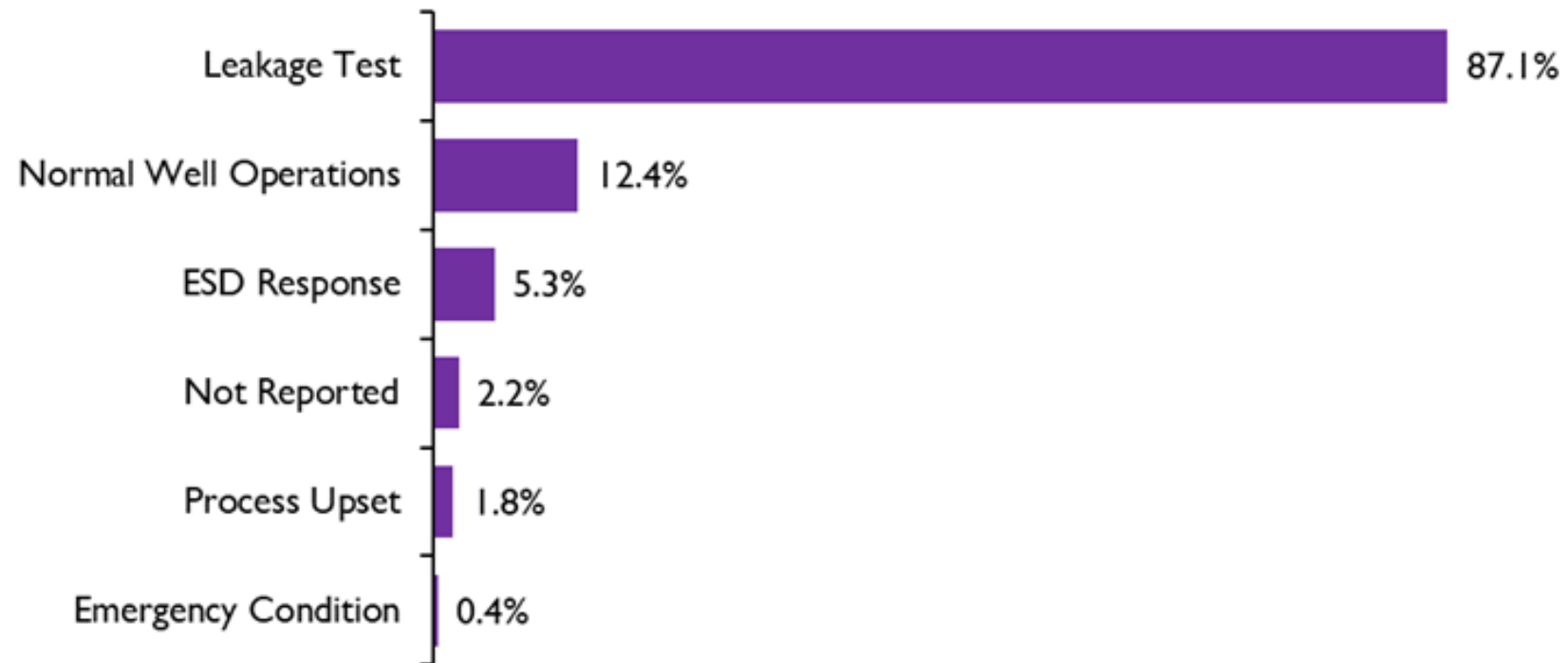
Of the 7 failure reports indicating the presence of CO₂;

- 3 SSV failures
- 3 SCSSV failures
- 1 GLSDV failure

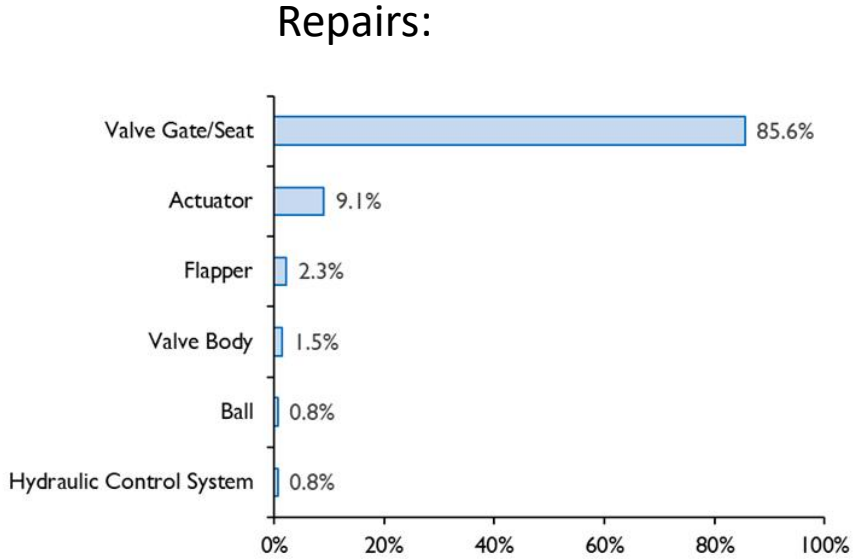
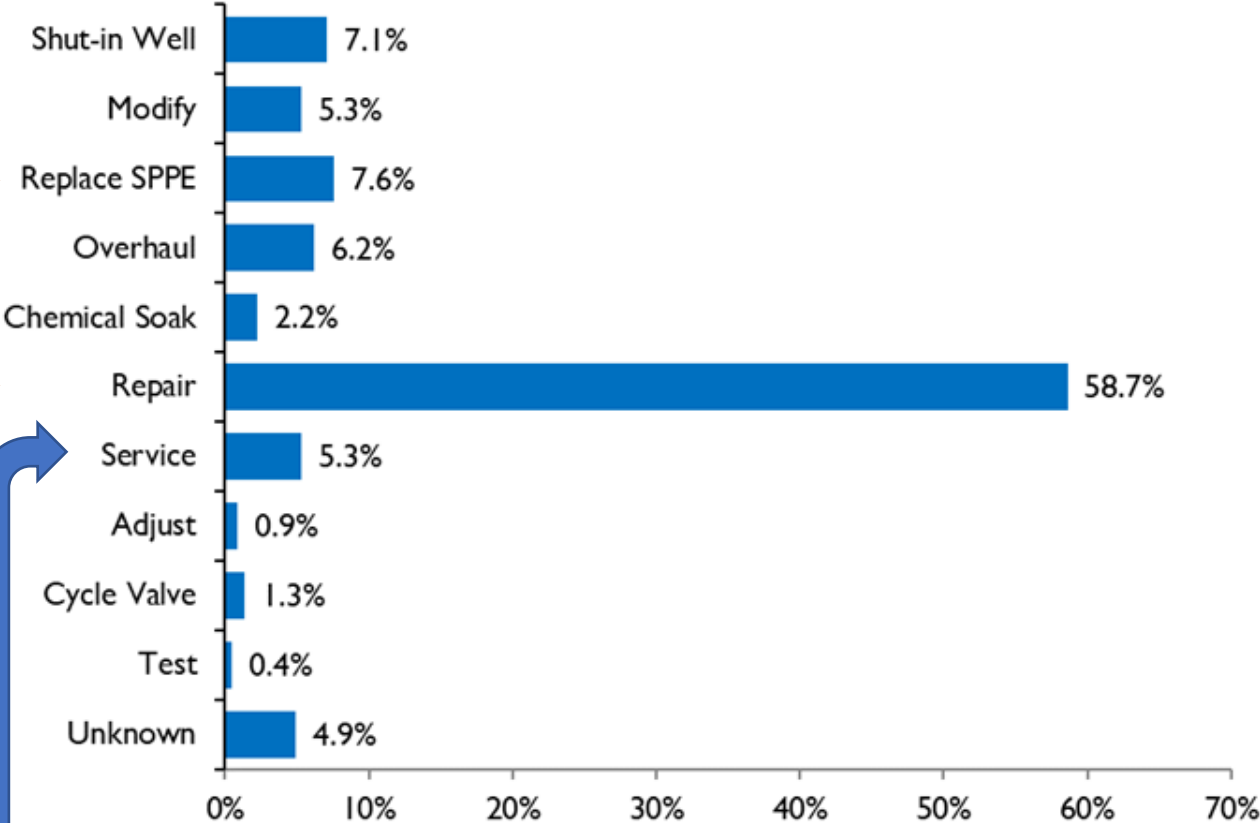
Contributing Factors to Equipment Events



How Failures were Detected



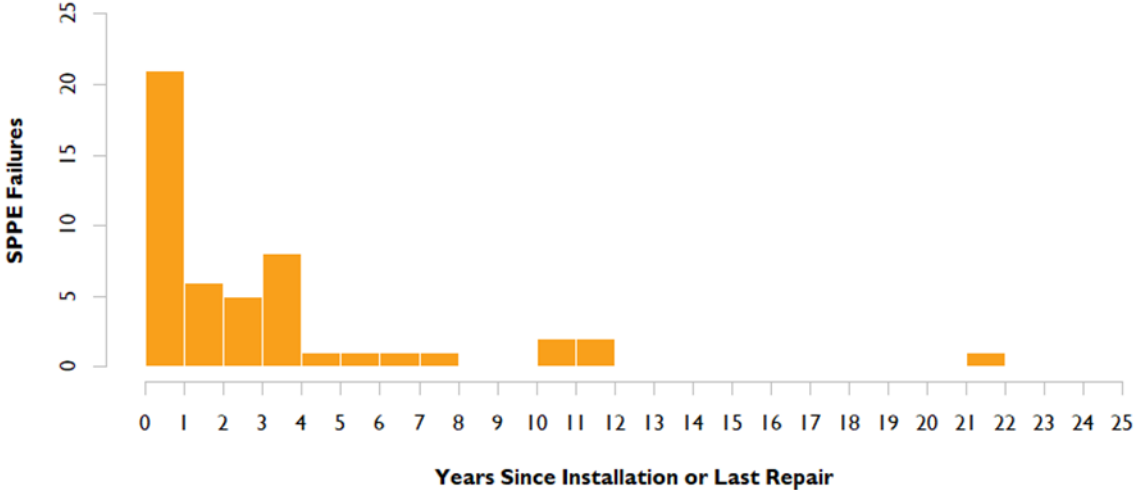
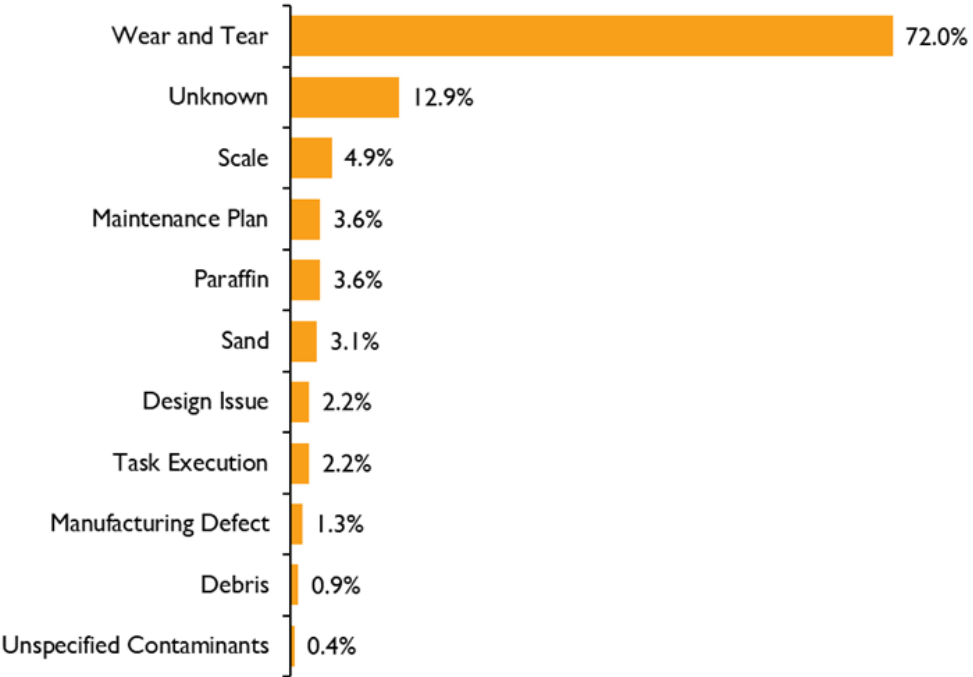
Reported Corrective Actions



E.g., the internal leakage across the valve’s sealing component was resolved by a simple service, such as a water wash or greasing the valve.

E.g., the leak required a more robust corrective action, such as repairing or replacing a component or replacing the valve.

Root Causes of Reported Failure Events & Time to Failure



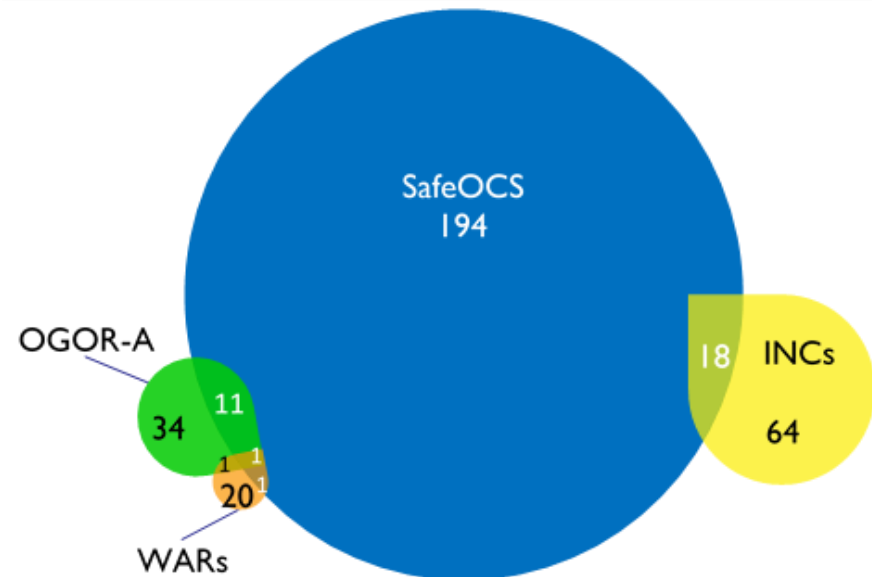
Repeated Failures

- In 2019, a total of 30 events of repeated failures indicate that the cause of the first failure may not have been fully resolved and further investigation is warranted.
- Repeated failures may indicate a need to conduct additional RCAs to better understand the operating environment to which these SPPE valves are exposed and the suitability of the valve design to the operating conditions.

Data Quality Improves with Complete Reporting

	2017	2018	2019
Operator Summary:			
Active Operators	57	58	56
Producing Operators	55	53	53
Reporting Operators (Percent of Active Operators)	7 (12.3%)	14 (24.1%)	15 (26.8%)
Reporting Operators' Percent of Active Wells	32.6%	66.8%	60.6%
Reporting Operators' Percent of Production	39.8%	62.3%	75.7%

Figure 1: Sources of SPPE Failure Records



SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics, SafeOCS program.



Bureau of Safety and Environmental Enforcement



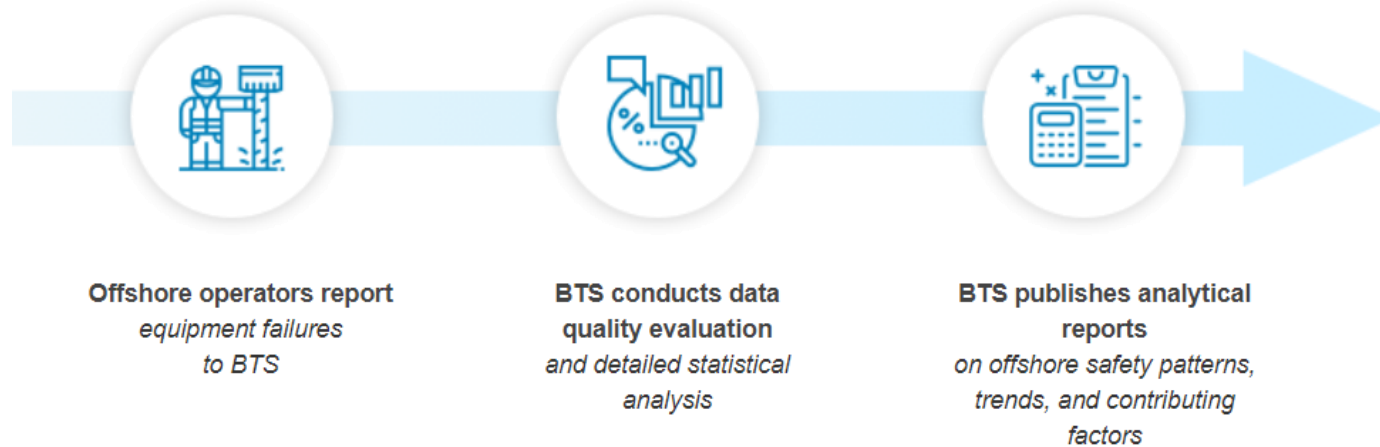
Bureau of Transportation Statistics

SafeOCS Program Administration by the Bureau of Transportation Statistics

- DOT's principal statistical agency
 - 13 principal statistical agencies
 - 90+ additional agencies and units engaged in statistical activities
- As DOT's principal statistical agency, BTS
 - Provides timely, accurate and credible information transcend all modes
 - Is the trusted source of data through
 - Ensuring deliverables are free of perceived political bias (from data user's perspective)
 - Protecting data through legislative authority (from data provider's perspective)
 - ❖ Legal discovery and subpoena
 - ❖ Protections to individuals and businesses (Title 13 data)

Data Processing Overview

- Reporting required under BSEE regulation 30 CFR 250.803
- Operators must submit these reports directly to the Bureau of Transportation Statistics (BTS) via www.safeOCS.gov
- BSEE and BTS [MOU](#)



Data Confidentiality

- BTS operates SafeOCS under the Confidential Information Protection and Statistical Efficiency Act of 2002 (CIPSEA)
- All confidential data (sensitive, proprietary, or private data) is protected from release under CIPSEA
- Confidential data...
 - cannot be released to the public, BSEE, or other non-CIPSEA federal agencies
 - protected from subpoenas and FOIA requests
 - may be used only for statistical purposes
- Additional information about BTS and CIPSEA protections can be found [here](#)

What event information is shared with BSEE?

- When you submit a notice of SPPE failure to SafeOCS, an automated email is sent to BSEE with only date, company name, company ID if available, and event reference number. **No other information about the event is shared.**
- BTS shares this information with BSEE to provide proof that you are in compliance with the reporting regulation without sharing the details of your report, which are CIPSEA-protected.
- Following detailed quality evaluation and statistical analysis, de-identified aggregated information is shared with all stakeholders, including BSEE, via published annual reports and data dashboards.

From: [SafeOCS](#)
Sent: Thursday, March 31, 2021 11:00 AM
To: from_socs@bsee.gov
Subject: Notification to BSEE: SPPE

Notification of an SPPE equipment failure:

- Submittal Date: Mar 25, 2021
- Company Name: [CompanyABC Corp.](#)
- Company ID:
- Reference Number: SPPE2021#000000
- Event Date: Mar 31, 2021

Respectfully,
The [SafeOCS Team](#)
SafeOCS@dot.gov
1-844-OCS-FRST (1-844-627-3778)

2020 SPPE Data Collection Form Improvement Effort

- Form improvements based on BTS and BSEE concerns for improved clarity:
 - Distinguish failure types from contributing factors
 - Clarify failure type definitions (e.g., failure to close vs. external leak)
 - Better capture well contaminant information
 - Clarify selections for how failures were detected
 - Improve corrective action definitions
 - Collect better information on time to failure
- Updated form in use for all 2021 equipment failure notifications

SafeOCS: Sharing Results

- All reports of aggregated information are posted to SafeOCS website: www.safeocs.gov
 - Includes 2019 SPPE Annual Report
- SafeOCS [SPPE Dashboard](#) is updated monthly with summary statistics on reported failure events

Next Steps

- **BTS** - Preparing 2020 Annual Report
- **BTS** - Areas of interest for current data analyses
 - Measuring component life, in cycles and time, to evaluate testing and replacement frequencies
 - Quantifying operational impact in terms of production interruptions and deferrals when failures occur
 - Enhancing analysis of SPPE failure rates
 - Further evaluating well age as a potential factor in SPPE failures
- **BSEE & BTS** - Outreach and engagement
 - Continue to grow program participation
 - Identify opportunities to improve reporting of specific RCFA results and learnings that may have industrywide benefit

SafeOCS Website: www.safeocs.gov

BSEE Website: www.bsee.gov



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