

Eldaniz Bayramli

Process Safety, Quality & HSE

Membership

- IChemE - Associate Member (Process Safety)
- IADC - HSE & Well Control Committee (Houston Chapter)
- IIRSM - Specialist Stream

Qualification & Education

- MEng - University of Sheffield (UK) - Process Safety & Loss Prevention
- MSc - Azerbaijan State Oil Academy - Oil & Gas Industrial Safety
- BSc - Azerbaijan State Oil Academy - Oil & Gas Industrial Safety

Professional Experience - Overall 18+ years of oil & gas experience, and 12+ years in offshore experience in all streams

- SOCAR-AQS (Corporate)
- BP (UK & Azerbaijan)
- Saipem (Azerbaijan)
- McDermott (Azerbaijan & UAE)



IWCF ANNUAL GENERAL MEETING & WORKSHOP

■ INCIDENT REVIEW

No-one wants this

Montara & Macondo Blowouts



Managing Well Integrity

Continual Improvement of Standards and Guidelines

Following the Montara and Macondo blowouts in 2009 and 2010, API, ISO, NORSOK, Oil and Gas UK and other bodies have developed and updated standards and guidelines specifically for well integrity in an effort to assist industry in avoiding the costly mistakes of the past.

There were number of international well integrity standards and guidelines were adopted and reinforced by many organizations in order to demonstrate the **'good industry practice'**.

- API Spec Q2 certification
- API STD 53 Well Control Equipment Systems for Drilling Wells
- ISO 16530 Well Integrity - Part 1: Life Cycle Governance
- ISO 16530 Well Integrity - Part 2: Well Integrity for the Operational Phase
- NORSOK Standard D-010 - Well Integrity in Drilling and Well Operations
- Oil & Gas UK Well Integrity Life Cycle Guidelines
- Oil & Gas UK Guidelines for the Abandonment of Wells
- Oil & Gas UK Guidelines for Qualification of Materials for the Abandonment of Wells

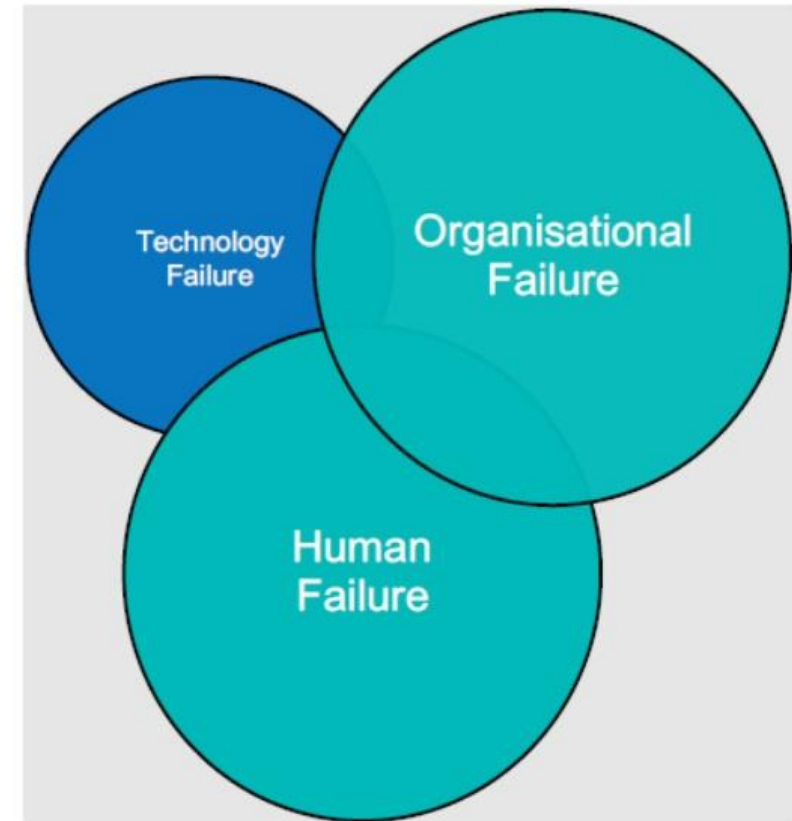
Still happens ...

IOGP database between 2014 and 2021

Year	Technology Failure	Human Failure	Organizational Failure	Total
2014		5	2	7
2015	1		3	4
2016	3	1	1	5
2017	1		4	5
2018	1	4	1	6
2019	1	2	1	4
2020	3	1	3	7
2021 (to June)		5		5
Grand Total	10	18	15	43

Key Contributing Factors

- **Technology Failure 23%** - Where a well control event has been caused by or escalated by a failure of a piece (or pieces) of equipment directly related to secondary well control.
- **Organizational Failure 35%** - Where a well control event has been caused by failure to adhere to a process or processes directly related to well control.
- **Human Failure 42%** - Where a well control event has been caused or escalated by a human reaction such as a lack of communication, a slow reaction, or a cascade of responsibilities.



How we operate

Key Focus Areas

3rd Party certification of safety-critical equipment

BOP Reliability Assessment and database (Critical spare parts inventory)

Pressure tests - BOP and related equipment, Choke and kill manifold etc.

Functional & Drawdown test - Drift test of BOP stack attention to the annular BOP

Management of barriers - Verification through conversation, intervention or discussion, toolbox talks or detailed work instructions, can significantly reduce the likelihood of barrier-failure categories such as failure to maintain a barrier, inadequate barriers, failure to use barriers, barrier maintenance and testing, and insufficient number of barriers in place.

Risk assessment - Safely manage the hazards in our industry, organizations must have a robust risk assessment process supported by a strong internal process safety culture. The presence of both components is essential - the absence of either one is likely to result in failure to manage risks effectively.

Operational procedures - It is essential for an organization to have well-defined policies and document management systems in place to produce operational procedures that are written in a way that a job can be executed safely with proper change management.

Safety Culture - Organization's safety culture is made up of shared beliefs, practices, and mindsets that create a distinctive organizational attitude toward safety and define how work is done. The creation of a strong positive safety culture environment should be considered a continuous, and not a one-off effort.



Advances in Well Control

New Challenges - Automated Well Control

Automation to reinforce your capabilities for influx management even further in the well lifecycle. As a result, you have more control over kicks for safe execution of operations, efficient returns to productivity.

- **Early kick detection** - MPD solutions enable detecting and reacting to kicks before they can present threats to well integrity, dangers to personnel safety, or damages to the environment. A quick response keeps the influx size to a minimum, which lowers pressure and gas flow rates, requires less time to mitigate, and facilitates a safe, fast return to well construction operations.
- **Shut-in automatically** - Applicable to any of MPD solutions, the safer designed influx system activates the secondary well control barrier without human intervention. If an influx exceeds the limits of the primary barrier, it automates the space-out and shut-in process to always keep the well under control, which avoids the potential for secondary influxes and lessens the time to close the well and circulate out influxes. In fact, tests have shown that automating in this way results in shut-in five times faster than conventional human interface methods
- **Influx mitigation** - After the onset of a kick or loss event, intelligent MPD system accelerates the return to operations. The proven system determines the required amount of backpressure to apply from the surface within seconds before reaching the threshold kick tolerance size. It then circulates out the influx at a full rate within operational limits, which reduces or eliminates the need to activate the secondary barrier and follow conventional well control procedures.

THANK YOU