# Integrity Management and MER (Maximising Economic Recovery)

What can we do differently?

Dr Ed Whyte & Paul McCarthy

ICorr Aberdeen Branch, Robert Gordon University, 29th January 2019

# Integrity Management & MER

PLANT INTEGRITY MANAGEMENT

- Significant reserves remain untapped in the UKCS
- Efforts required to **M**aximise **E**conomic **R**ecovery **(MER)**
- Integrity Management is <u>key</u> to ensuring this is done in a safe and sustainable manner

# Production Efficiency (PE) in UKCS

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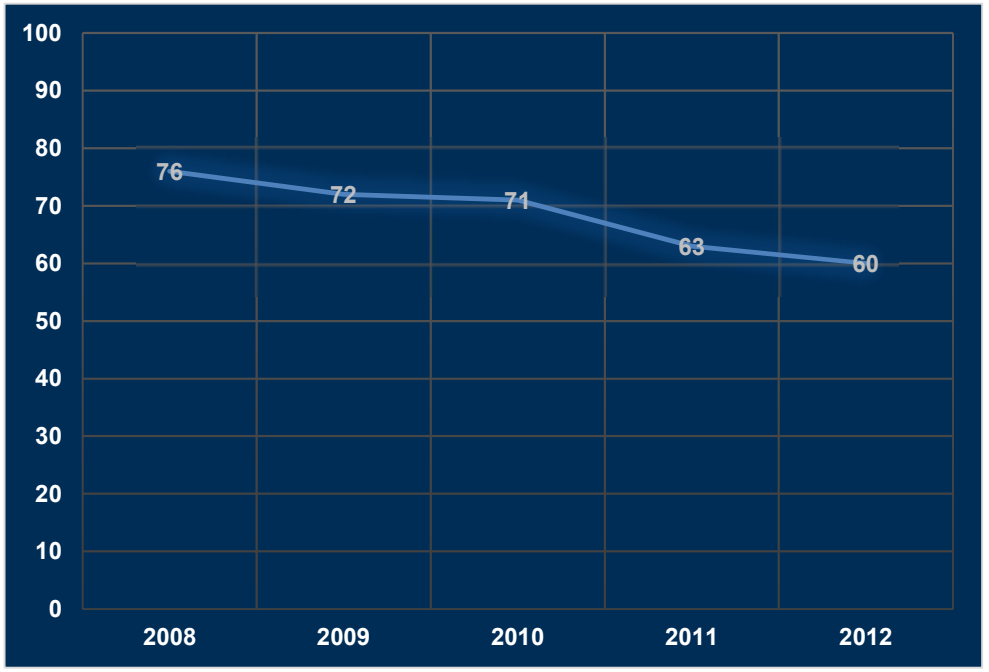
- PE – Total volume of hydrocarbons produced as a % of economic maximum production potential

- A low of 60% production efficiency in 2012

- Production down 38% between 2010-2013




Source: Oil & Gas Authority - UKCS Production Efficiency in 2017

# MER Timeline

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# Production Efficiency Improvements

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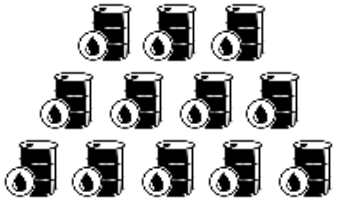
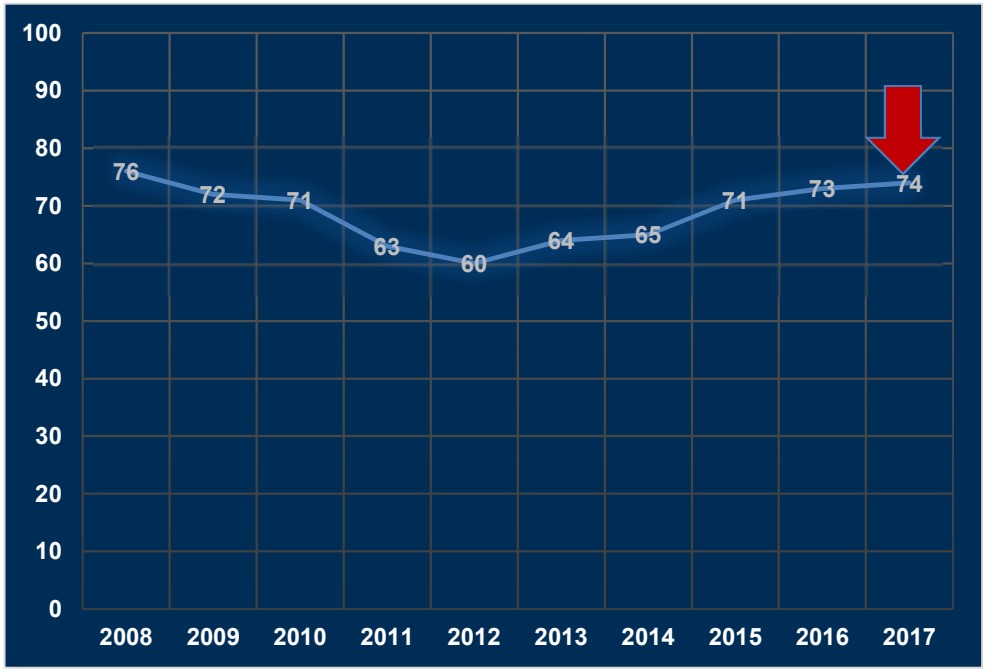
- 5 consecutive years of production efficiency improvements

- 1% improvement = 12 million boe



- Additional 32,000 barrels per day




Source: Oil & Gas Authority - UKCS Production Efficiency in 2017

# UKCS Production Losses

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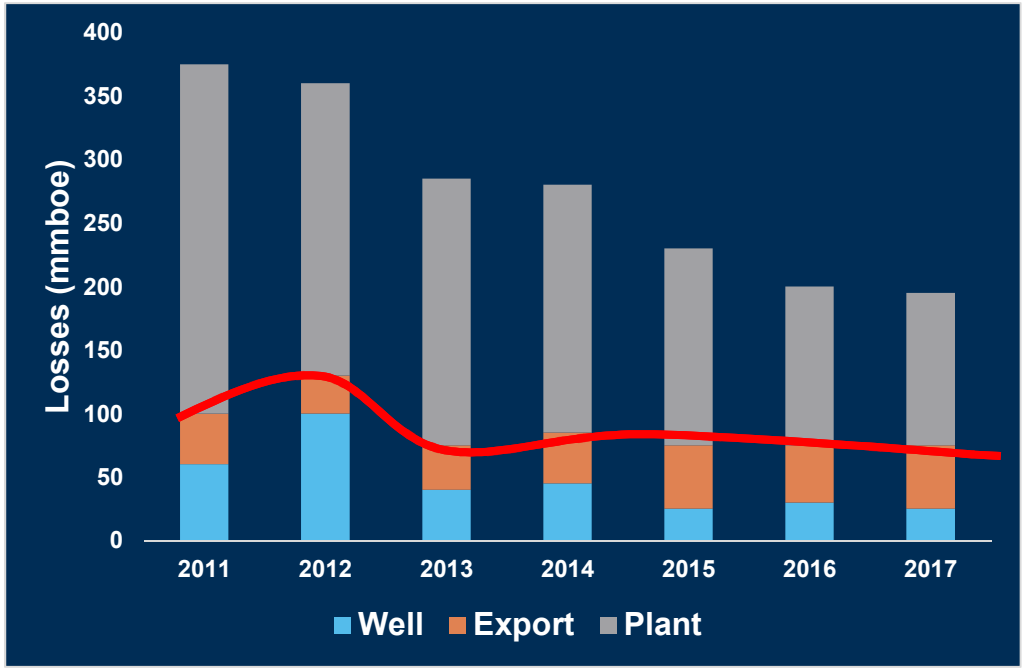
- Plant losses and export (pipeline/terminal) are largest cause of production efficiency loss
- Half of all production losses are unplanned outages
- Plant loss reduction has been major driver of production efficiency improvement since 2012
- Effective Integrity Management is key to meeting MER requirements, while maintaining safe operations




Source: Oil & Gas Authority - UKCS Production Efficiency in 2017

# Corrosion – It's a Fact of Life

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# Maintenance Costs

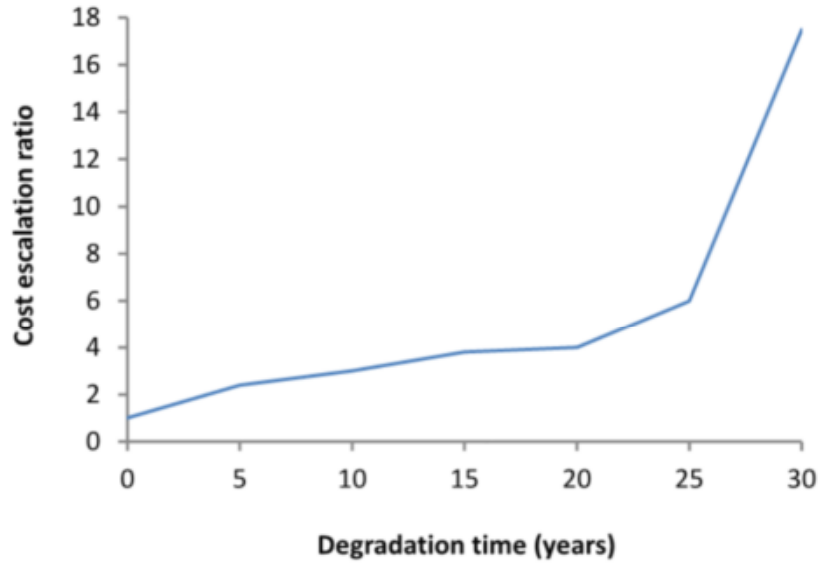


Figure 1-1 Coating maintenance costs escalation (cost increase vs. degradation)
Note: Initial cost/$m^2$ = 1

Source: Guidelines for the Management of Coatings for External Corrosion Protection, 1st Ed., Energy Institute, Jan 2012

# Barriers to Effective Integrity Management

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One major barrier to effective in integrity management is **Corporate Short-Termism**

# Executive Survey on Short-Termism

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Pressure for strong financial performance within ≤2 years

Short term pressure has increased in past 5 years

Companies without a strong long-term culture are likely to delay a new project to hit quarterly targets even if it sacrificed some value

Source: Measuring the Economic Impact of Short-Termism, McKinsey Global Institute Feb 2017

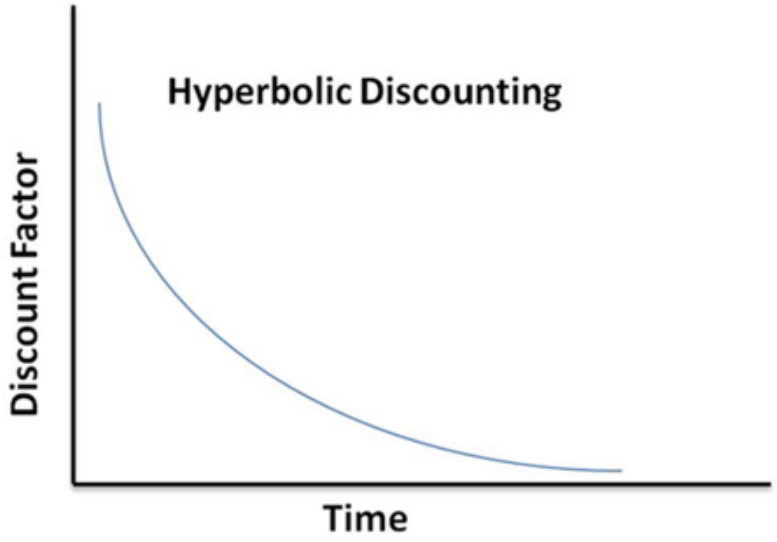
# Time Dependant Discounting - Question

Would you choose to accept £50 now or £100 in a two days time?

**Majority would choose to wait for the £100**.

Would you choose to accept £50 now or £100 in a years time?

**Majority would choose £50 now**.



# Why Time Dependant Discounting Matters

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- Senior management likely to cut costs & prioritise ‘quick wins’ i.e. Reactive over Preventative maintenance.
- The latter being more cost effective over the longer term.
- Integrity improvements e.g. FM programmes, aren’t always seen as ‘quick wins’ and as adding short term value.

# Strategies for Moving to Mid / Long Termism

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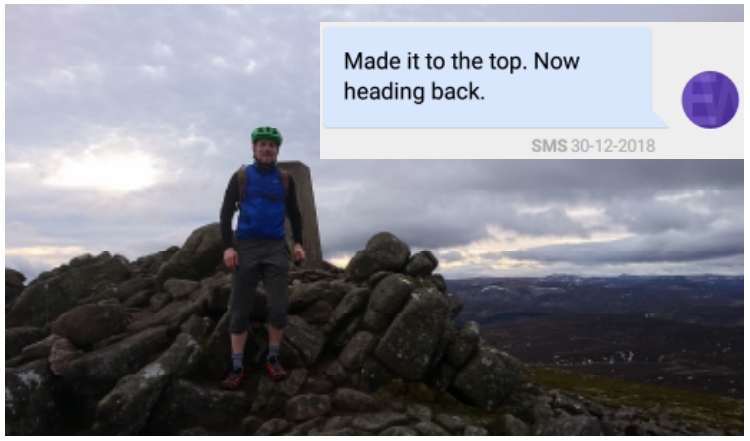
- Break down major work into manageable tasks, **each** with defined **goals**.




- Communicate & celebrate **success**.

## Strategies for Moving to Mid / Long Termism

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- Robust business cases to be made for mid to long term Integrity Management programmes - based on risk, cost and resources.

- Get management to commit to mid to long term Integrity Management programmes.

# Maximising Economic Recovery (MER) Timeline

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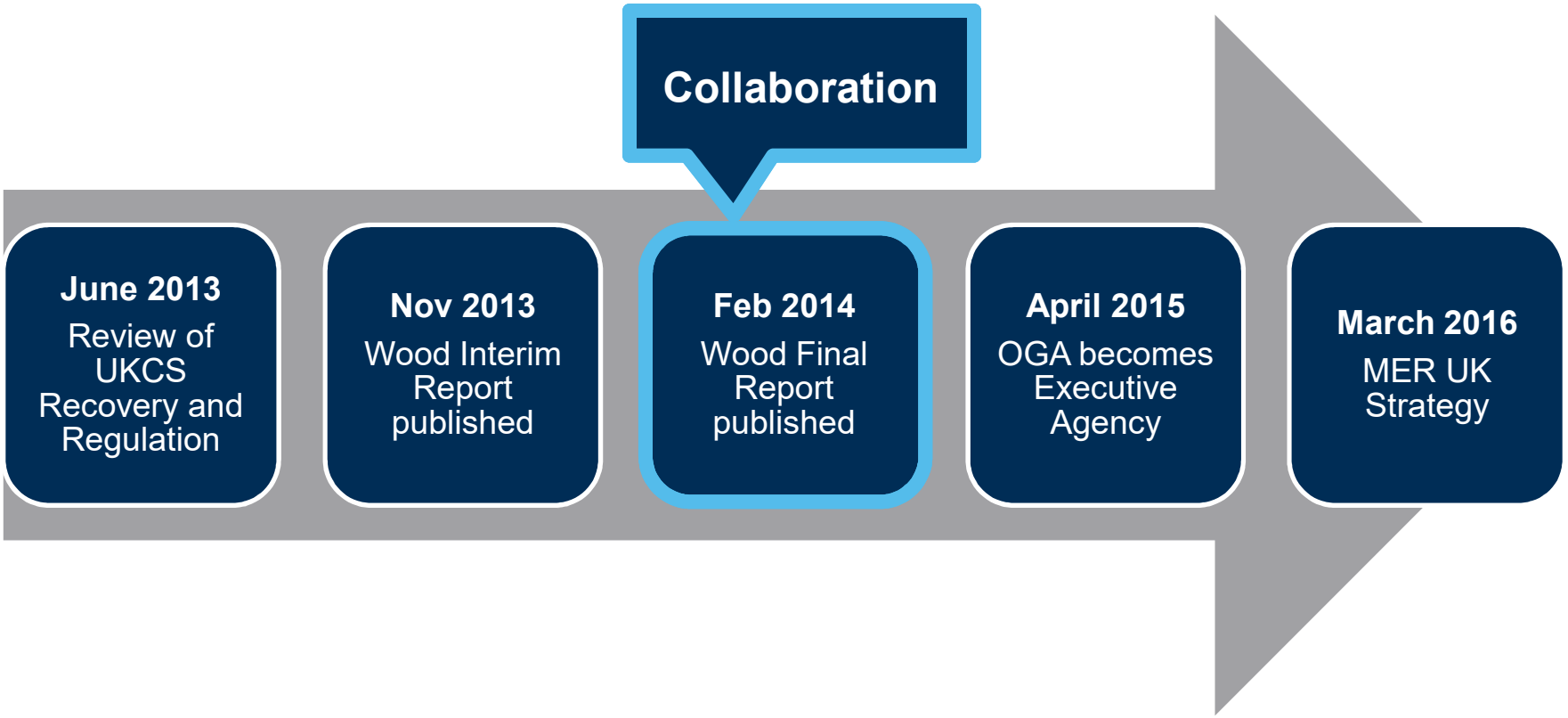

# What is collaboration? Why is it important?

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# Is collaboration working?

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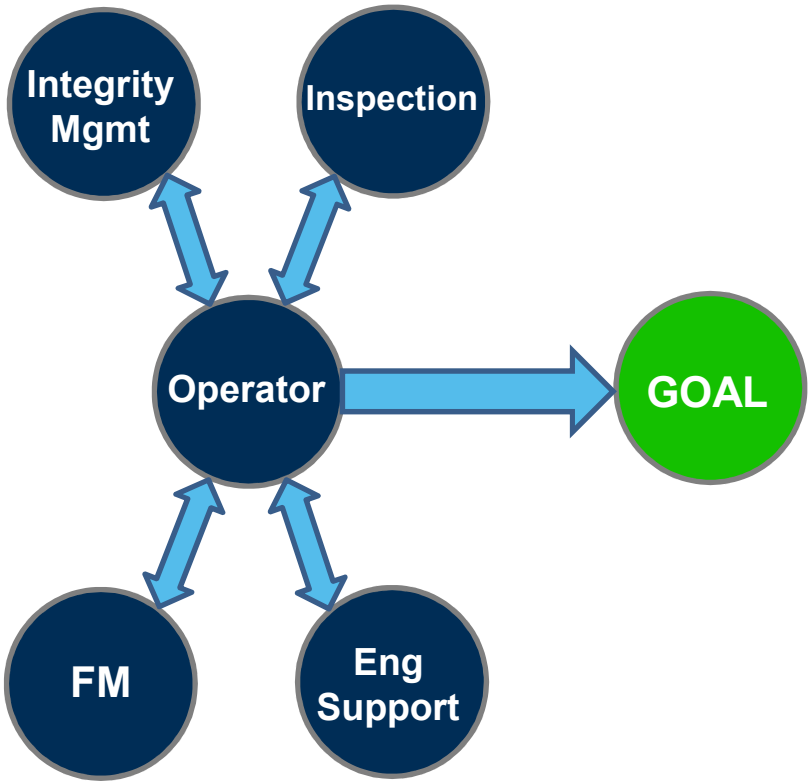
Collaboration isn't a new concept

Evidence suggests it may be – but what can we do better?

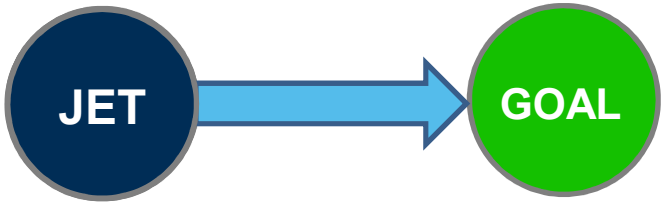
# Typical Integrity Management Relationship




Typical integrity business methods

- Drive performance improvements through supply chain cost squeeze
- Optimisation limited by operator

# Collaborative Integrity Management Relationship




Formation of **Joint Efficiency Teams**

- Drive performance improvements by empowering supply chain
- Scope to define potential opportunities for each member

Source: Accenture Strategy – Ushering in collaboration and integration, 2016

# CUI in the Oil and Gas Industry

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# Collaboration in Integrity Management - Example

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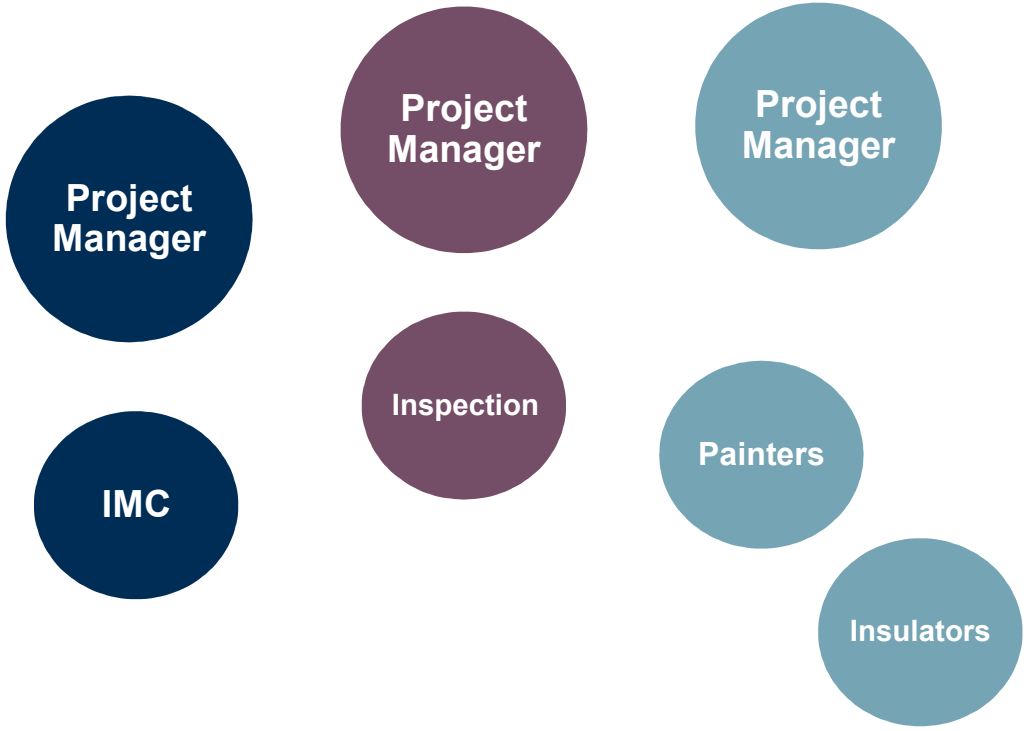
## CUI Campaign - Traditional

- Different teams with individual Project Managers
- Multiple datasets
- Tracking and reporting progress based on man hours and cost



# Collaboration in Integrity Management - Example

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Insulated lines missed from scope

Items with vastly different risk ranking being handled by 1 work order in maintenance management system

Insulated lines don’t require insulation reinstatement

‘Personnel Guards’ or PFP missed from scope

Conflicting reports, or insufficient information completion of remedial action leading to confusion/misreporting

Mismatch between actual plant on site and engineering drawings

# Collaboration in Integrity Management - Example

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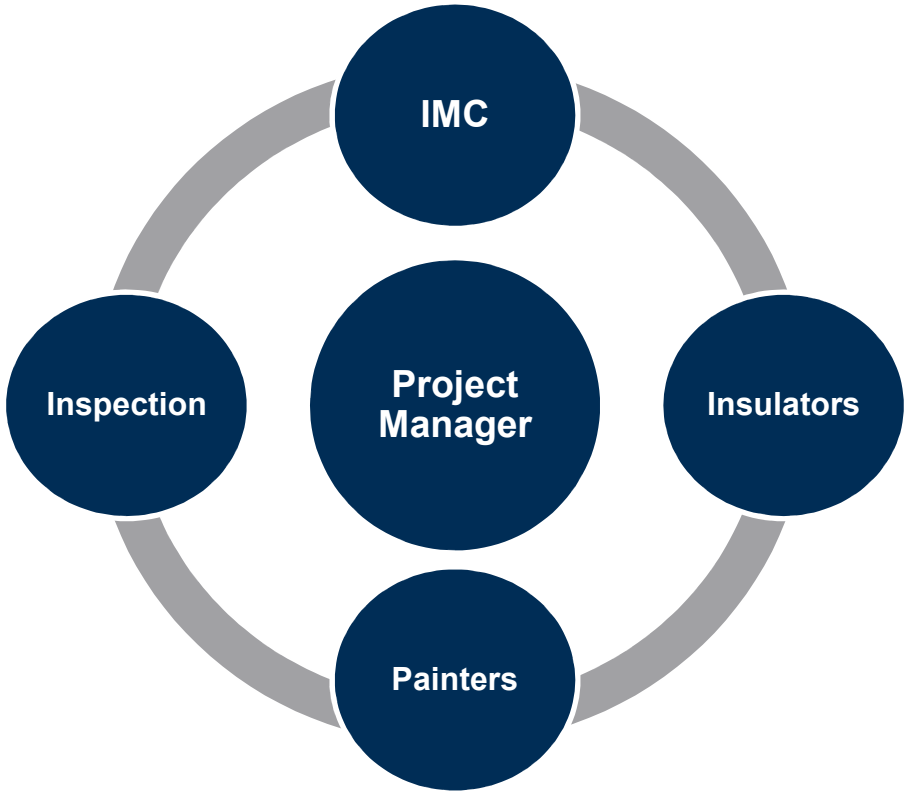
## CUI Campaign - Collaboration

- Single team with a single dedicated Project Manager
- One shared common dataset
- Tracking and reporting progress based on Risk reduction



# A Final Note

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