Introduction
Subsea Pipeline Integrity Management
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Management of risk - avoiding incidents

• Use the right people
• Set the right standards
• Apply the standards
• Check compliance with the standards
• Act on failures
Why is managing UK Offshore pipeline integrity important?

• Original design life typically 25 years
• Approx 25% of UK offshore pipelines have exceeded original design life
• Current projections are that this will increase to 50% by 2020
• Likely continued and extended production from existing fields
• Challenges from deeper, hotter and higher pressure fields
Why is Managing Pipeline Integrity Important?

- Loss of product/profit
- Production facility down time
- Safety risk
- Environmental damage
- Reputation
- Legal requirement
The legal framework

• Pipeline Safety Regulations

R13 – Maintenance
  - Secure safe operation
  - Prevent loss of containment

R23 – Major Accident Prevention Document
  - Identify hazards and threats
  - Record and document findings
  - Implement a management system
  - Revise and replace as appropriate
HSE’s approach to asset integrity offshore

- Recognition that asset integrity management of aging plant is essential
- Key Programme 4 (KP4)
- Inspection of physical condition
- Management procedures, documentation and performance indicators
- Competence
- Management involvement/leadership
The aging pipeline – physical challenges

• Aging – not simply related to chronological age

• HSE Report 509 states

  “Overall, aging plant is plant which is, or may be, no longer fully fit for purpose due to deterioration or obsolescence in its integrity of functional performance.”

• Aging a product of corrosion, fatigue, erosion, damage, modifications, changes to flow rate and direction etc over time
The aging pipeline - technological challenges

- Obsolescence
  - Older plant becomes obsolete – no replacement parts
  - Control and Instrumentation become incompatible

- Advances in knowledge and technologies
  - Introduction of new or revised regulations
  - Developments in codes and standards

- Organisational Issues and Change Management
  - Changes in organisations and personnel
  - Loss of skills and competence
  - Changes in ownership, contractorisation
  - Loss of corporate memory/design, maintenance and usage data
Personal challenges

- Clarity about what you are looking at - where are the system boundaries
- Matching current conditions against future demands
- Defining inspection and maintenance regimes
- Clarity about the significance of out of range measurements
- Communicate your findings clearly to the right people
- Leadership
Leadership

• Major theme of HSE’s strategy
• Must permeate throughout the organisation
• Take ownership of risks and managing them
• Not just a job for the boss
• Respond to HSE’s strategy for your industry