Xodus brings in-depth knowledge and experience to bear on metallurgy, materials selection, and corrosion control and management. Our expertise covers the entire lifecycle of your assets; from early concept when we carry out materials screening, during Front End Engineering Design (FEED) with detail corrosion assessments and specification tailoring, though to Engineering, Procurement, Installation and Commissioning (EPIC) stages – assuring the quality of materials, welding and coating.

Throughout operations we offer specialised support with corrosion management, ageing of polymers used in flexible pipelines and failure investigation. When an asset approaches end-of-life, review the condition of the asset and help clients assess life extension options. We collaborate with experts in other Xodus disciplines to deliver integrated, cost-effective and feasible solutions to technical challenges.

Metallurgy and materials selection
- Materials screening at early concept stage and practical detailed selection at define / FEED stages that incorporates supply chain constraints where they exist
- Strong experience in manufacturing and fabrication to effectively support clients during the EPIC stages; from steelmaking and heat treatment to cladding, welding and NDT programmes
- Technical support during the operational life of the asset is one of our core strengths and our experience helps to develop a comprehensive system for integrity programmes
- We have a lifetime’s experience in failure analysis that enables us to help find answers to the questions ‘Why did it fail?’ and ‘How do we prevent another failure?’

Corrosion management
- Development of comprehensive corrosion control and mitigation strategies, including corrosion under insulation (CUI), at any stage of an asset life using industry best practice models and Key Performance Indicators (KPIs)
- Materials and corrosion experts perform corrosion parametric studies, inhibitor selection and corrosion monitoring programmes. Working in conjunction with our production chemists provides robust and mature solutions in these areas
- Corrosion assessment for existing assets for both internal and external hazards is undertaken using in-house and verified tools as well as industry-wide accepted tools.

Non-metallic materials and materials selection for flexible risers / pipelines
Xodus provides insight through a deep understanding of the importance of quality assurance during the manufacture of non-metallic equipment such as flexible flowlines and risers. Our competence and experience allow us to provide practical advice to clients who need to manage the threat of polymer ageing effectively.

Sour service (hydrogen sulfide) expertise
Our deep understanding of metallurgy and the threats in hydrogen sulfide (H₂S) containing environments is based on technical experience as developers of solutions for sour service, qualifying materials at laboratories and inspecting assets as they suffer the effects of H₂S. Xodus can guide you to overcome sour service challenges, from downhole materials selection to H₂S removal equipment.

ISO 15156 / NACE MR0175 can be a daunting document to navigate. Xodus Group’s continuous participation in NACE TG299 (Oversight of Maintenance Panel for NACE MR0175 / ISO 15156) gives us an insight into the standard and strengthens the solutions we provide to our clients.
Experience

Shell, UK North Sea
Pierce Life Extension Project – Conceptual Engineering Study
Scope
 › A study of the life extension of the Pierce subsea production system
 › Provide specialists in multiple disciplines – subsea engineering, flexible risers, pipelines, materials, corrosion, valves and structures
 › Conduct the study in line with NORSOK U-009 ‘Life Extension for Subsea Systems’.
Outcome
An action plan to extend the life of the field from an original 15 years design life to an additional 17 years allowing production to continue beyond 2030.

ADCO
BAB & ASAB Fields – Integrity Assessment
Scope
Review of subsurface facilities to assure their fitness-for-purpose and minimise events that compromise business continuity.
Approach
 › Materials and corrosion experts led the project, focusing on downhole metallurgy and corrosion management
 › Production chemistry and production technology specialists collaborated with metallurgy and corrosion experts
 › Well integrity threats were identified and ranked, and mitigation plans developed.
Outcome
Practical recommendations for securing operations and minimising events that compromise business continuity.

Dana Petroleum (E&P) Ltd
Western Isles Development
Scope
 › Supporting Dana in materials selection and corrosion assessment
 › Providing metallurgy, manufacturing and fabrication expertise
 › Supporting Dana with specialist materials advice and interfacing with contractors through to EPIC stage.

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