



Codex Integrity Limited

ensuring asset integrity

Codex Integrity Limited provides organisations within the energy, process chemical and marine sectors with integrity management and engineering support covering design, in-service operation and asset life-extension. This support includes:

- Design Review and Appraisal
- Legislative Compliance
- Risk Based Inspection Programmes
- Campaign Surveys
- Performance Management
- Integrity Management Systems
- Audits and Implementation Action Plans
- In-Service Inspection; Fabric Maintenance
- Anomaly Management and Fitness-for-Service Assessment
- Continual Improvement

Why use Codex Integrity Limited?

We have a very experienced engineering and technical staff that fully understand the importance of implementing bespoke, practical frameworks to manage asset integrity. The complexity, and the interactions required between all relevant disciplines, must be identified and controls put in place to collect, analyse and measure integrity data.

By incorporating all the influencing factors, integrity management becomes an inherent part of day-to-day operations. This integration maximises safety, ensures statutory/regulatory compliance and maintains highest levels of productivity and profitability. We have experience of regulatory audits, internal and external corporate audits; and UKAS audits.

Codex Integrity Approach

For complex assets, our typical approach includes:

- Policy and Strategy
- Integrity Management System Documentation
- Asset Integrity Models (AIM)
- Degradation Assessments
- Risk Assessment and Residual Risk Profiling
- Risk-Based Written Schemes of Examination
- Integrity and Inspection Work Packs
- Data Analysis
- Anomaly Management
- Performance Management; Lessons Learned



Potential Benefits

Our clients benefit from:

- Increased confidence of their asset's safety
- Improved understanding of their risk profile
- Improved plant performance and profitability
- Improved efficiency and integration between technical and operational teams
- Optimised mitigation, inspection and repair costs
- Successful corporate and regulatory audit performance
- Fully documented and demonstrable integrity management
- Increased workforce knowledge and confidence in plant condition and integrity management



Ad-hoc Integrity Support Services

Although there are significant benefits of embedding Codex Integrity Limited within a clients' organisation, we are also very effective when providing ad-hoc support, including:

- Design Reviews
- Integrity and Inspection Management Effectiveness Audits
- Failure Investigations
- Material Selection Guidance
- Corrosion Under Insulation, Potential Dropped Object, Bolting; Fabric Maintenance Surveys
- Fabric Maintenance Activity Planning, Execution and Performance Management
- Vendor Audits
- Integrity, Inspection and Corrosion Awareness Training

For further information please contact:

Europe, Middle East and Africa

Codex Integrity Limited
Obsidian Office Complex
Chantry Court
Chester, CH1 4QN, UK
T: +44 (0) 1244 220 055
F: +44 (0) 1244 220 088
E: contact@codexintegrity.com

Aberdeen

3rd Floor, Riverside House
Riverside Drive
Aberdeen
AB11 7LH, UK
T: +44 (0) 1224 224 330
F: +44 (0) 1224 224 301
E: contact@codexintegrity.com

Codex Integrity Limited provides organisations within the energy, process chemical and marine sectors with corrosion engineering support, in conjunction with our integrity management services. This support includes:

- Design Review and Appraisal
- Corrosion Risk Assessments
- Corrosion and Chemical Treatment Optimisation
- Coating System Appraisal
- Campaign Surveys
- Performance Management
- Corrosion Management Systems; Auditing
- Material Selection and Weld Procedure Approval
- Corrosion Awareness Training
- Cathodic Protection System Selection and Testing
- Anomaly Management and Rectifications
- Continual Improvement

Why use Codex Integrity Limited?

We have a very experienced engineering and technical staff who fully understand the importance of implementing bespoke frameworks to manage asset integrity, and a key element is corrosion engineering. Our experience managing day-to-day inspection activities requires high quality corrosion assessments, critical to forming the basis of risk based inspection.

We can develop site specific, integrated corrosion management strategies but also have the experience and practicality to implement these strategies. A key capability is the training and competence to conduct risk assessments, which provides the basis for demonstrable, auditable and effective risk based programmes.

Our Services

Codex Integrity's corrosion engineering competencies and experience allows a wide range of value-adding services, including:

- Corrosion Policy and Strategy
- Corrosion Management Systems
- Corrosion Degradation Assessments
- Corrosion Rate Calculation
- Corrosion Risk Assessments; Risk Profiling
- Risk-Based Written Schemes of Examination
- Chemical Injection Review
- Corrosion Monitoring
- Data Analysis
- Remnant Life Surveys
- Anomaly Management
- Corrosion Management Key Performance Indicators
- Performance Management; Lessons Learned





Potential Benefits

Our clients benefit from:

- Increased confidence of their asset's safety
- Improved understanding of their risk profile
- Improved plant performance and profitability
- Improved chemical injection performance, effectiveness and cost
- Optimised mitigation, inspection and repair costs
- Successful corporate and regulatory audit performance
- Fully documented and demonstrable corrosion management
- Improved corrosion awareness

Ad-hoc Integrity Support Services

Although there are significant benefits of embedding Codex Integrity Limited within a clients' organisation, we are also very effective when providing ad-hoc support, including:

- Design Reviews
- Corrosion Management Effectiveness Audits
- Failure Investigations
- Material Selection Guidance
- Corrosion Under Insulation, Dropped Object, Bolting; Fabric Maintenance surveys
- Fabric Maintenance Activity Planning, Execution and Performance Management
- Vendor Audits
- Integrity, Inspection and Corrosion Awareness Training

For further information please contact:

Europe, Middle East and Africa

Codex Integrity Limited
Obsidian Office Complex
Chantry Court
Chester, CH1 4QN, UK
T: +44 (0) 1244 220 055
F: +44 (0) 1244 220 088
E: contact@codexintegrity.com

Aberdeen

3rd Floor, Riverside House
Riverside Drive
Aberdeen
AB11 7LH, UK
T: +44 (0) 1224 224 330
F: +44 (0) 1224 224 301
E: contact@codexintegrity.com

Pipeline Integrity Management

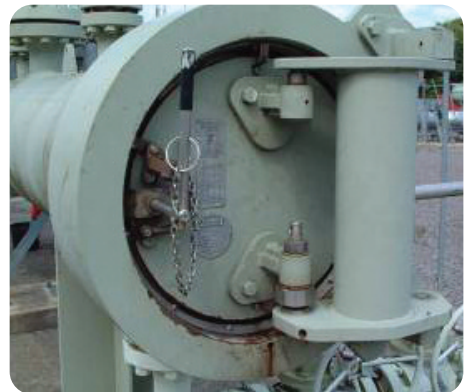
The challenges of managing and maintaining pipelines, both onshore and offshore, requires extensive technical knowledge and operational experience to ensure all key objectives are achieved, including:

- Incident-Free Health and Safety
- Regulatory Compliance
- Minimal Environmental Impact
- Continued Reliability and Availability
- Optimised Costs



Implementation of a Pipeline Integrity Management System (PIMS) requires utilisation of a robust management framework. This has to be developed and documented, and Codex Integrity has considerable recent experience in assisting operators in this task. We will prepare, or participate in the preparation, of:

- Clear Policy and Strategy
- Statutory and Regulatory Compliance
- Comprehensive Integrity Management Processes
- Consistent Risk Assessment Process and Residual Risk Profiling
- Management and Organisation; Roles and Responsibilities
- Risk-Based Written Schemes of Examination
- Design and Document Control
- Operational Requirements (normal and extreme conditions)
- Maintenance and Inspection Procedures
- Third Party Mitigation Measures
- Change-Management
- Performance Measurement, Reporting and Improvement



Codex Integrity will provide and manage the activities required by the PIMS, such as:

- Maintenance and Inspection Schedules
- Integrity and Inspection Work Packs
- Inspection Activities
- Inspection and Operating Data Analysis
- Formal Review and Incorporation of Lessons Learned

Codex Integrity considers it essential that the PIMS is supported by a process of review and audit, documented through routine reporting and a periodic formal management review.

Pipeline Design, Construction, Installation, Pre-commissioning and Commissioning

Codex Integrity's engineering expertise and practical experience allows us to support operators in ensuring their pipelines are fit for intended purpose, from first concept through to commissioning. We have significant experience in the following activities, both onshore and offshore:

- Contractor Evaluation and Selection
- Pipeline Design and Management Review (In-House or utilising a Design House)
- Project Specification, Organisation and Management
- Management of Fabrication and Installation Contracts
- Preparation of Pre-Commissioning and Commissioning Philosophies
- Procedures and Storyboards

Pipeline Operations

In addition to PIMS, we assist in managing all risks during the in-service operation of pipeline systems:

- Development and Enactment of Bespoke Inspection Systems/Techniques
- In-Service Inspection and Surveillance
- Operational and Inspection Pigging
- Preparation and Exercise of Emergency Response Procedures
- Incident Investigation
- Repairs and Modifications; Implementation of Change Control
- Quality Assurance
- System Auditing

Pipeline Decommissioning

Pipeline decommissioning requires a parallel, but different experience-set, to that of construction activities. Codex Integrity has personnel experienced in the decommissioning process:

- Identification and Short-Listing of Decommissioning Methods
- Managing Environmental Impact Comparisons
- Development of Detailed Decommissioning Procedures
- Regulatory Authority Facilitation
- Decommissioning Activity Management

For further information please contact:

Europe, Middle East and Africa

Codex Integrity Limited
Obsidian Office Complex
Chantry Court
Chester, CH1 4QN, UK
T: +44 (0) 1244 220 055
F: +44 (0) 1244 220 088
E: contact@codexintegrity.com

Aberdeen

3rd Floor, Riverside House
Riverside Drive
Aberdeen
AB11 7LH, UK
T: +44 (0) 1224 224 330
F: +44 (0) 1224 224 301
E: contact@codexintegrity.com

Codex Integrity Limited provides the support required to ensure safe interfacing and combined operations of mobile support units to fixed offshore installations. Our interfacing approach includes the integration of the following systems:

- ESD and fire & gas
- Electrical systems
- Telecommunications
- Deluge and firewater
- Navigation aids
- Personnel and utility access
- Hull and structure



Why use Codex Integrity Limited?

Our highly experienced engineering and technical staff fully understand the engineering, operations, and safety requirements of interfacing. Our track record of successful interface projects allows confidence for safe and efficient combined operations.



Interface Detailed Engineering

For complex interfaces, our typical approach includes:

- Agree interface policy and strategy
- Identify ComOps 'Safety Case' and 'Written Scheme of Verification' requirements
- Generate technical specification and design documents
- Facilitate HAZID, HAZOP and risk assessments
- Create HSE bridging documentation and operational procedures
- Generate all interface technical drawings
- Generate 'Connection' and 'Disconnection' work packs
- Organise 'Bills of Materials' and 'Third Party Equipment' tracking
- Perform pre- and post installation condition surveys
- Provide site interfacing team labour
- Interact with Independent Competent Person (ICP) and Warranty Surveyors to ensure full compliance

Interface Operational Activities

There are a number of additional interface activities that we can support, including:

- Installation selection; platform and mobile unit capability survey
- Marine survey facilitation - site specific, CMID and seabed survey
- Permit and consent arrangement support
- Approach and positioning procedures review
- Aviation and helideck surveys
- Lifting equipment survey
- In-service subsea surveys – scour, rock dumping and dropped objects
- Provision of marine specialist personnel

Potential Benefits

Our clients benefit from:

- Robust design and engineering
- Increased confidence of interface safety and operability
- Improved understanding of combined operations risk-profile
- Minimised downtime and lost-production

For further information please contact:

Europe, Middle East and Africa

Codex Integrity Limited
Obsidian Office Complex
Chantry Court
Chester, CH1 4QN, UK
T: +44 (0) 1244 220 055
F: +44 (0) 1244 220 088
E: contact@codexintegrity.com

Aberdeen

3rd Floor, Riverside House
Riverside Drive
Aberdeen
AB11 7LH, UK
T: +44 (0) 1224 224 330
F: +44 (0) 1224 224 301
E: contact@codexintegrity.com

Codex Integrity Limited provides organisations within the energy, process and marine sectors with maintenance management support, and works with clients to ensure they can improve their existing maintenance management systems and processes.

As such, we find that our detailed Maintenance Management System Audit helps to ensure our clients identify and target the areas of their business that require improvement. Our audit approach covers a review of:

- Maintenance Management Philosophy and Design
- Maintenance System Governance & Leadership
- Asset / Equipment Register Reviews
- Work Request Process and Management
- Work Order Process and Management
- Workforce Timewriting Process
- Training Philosophy at Site
- Workforce Feedback
- Continual Improvement
- Contractor Management Process
- Maintenance Plans set-up
- Planning & Scheduling Process
- Materials Management and Stock Check Process
- Management of Change Process
- Maintenance KPIs and Reporting
- Maintenance Cost / Budget Reporting
- CMMS Statistics – “deep dive”
- Safety Critical Maintenance and Reporting

Why use Codex Integrity Limited?

Codex Integrity has significant experience at site carrying out audits of maintenance management systems and the wider processes that complement them. Our combination of engineering and CMMS expertise ensures we have a balanced and insightful approach to every audit we carry out, and we always work with the client to ensure a sensitive and constructive approach is taken with any maintenance management system audit. Our aim is to ensure we always provide a practical working list of audit outcomes that can be targeted by priority with associated action plans.



Our specialist experience working with multiple CMMS systems ranging from SAP, Maximo, AMOS, through to Infor Datastream and MP2 gives us a strong understanding of the issues facing an operated site. All our CMMS Specialists and Engineers have on and offshore experience and understand the demands placed on the end user at site. We do not just carry out desktop based audits. We travel to site. Wherever the site is.

Codex Integrity Audit Approach

For all complex assets, the typical approach includes:

Phase 1

- Initial Kick-off to Understand Client Requirements
- Site Visit and Audit against a Standard or Bespoke Codex Integrity Audit Template
- Mid-audit Review of Initial Findings with Client
- Addressing of any Immediate Audit Findings / Issues
- Completion of Audit
- Presentation of Audit Findings and Recommended Prioritised Practical Actions
- Recommended Action Plan and Implementation Timeline

Phase 2 (if adopted)

- Initiate Action Plan to Rectify Identified Issues

Potential Benefits

Our clients benefit from:

- Improved regulatory compliance
- Improved utilisation of CMMS system and maintenance processes
- Accurate maintenance planning and scheduling leading to improved workforce performance and cost management
- Renewed confidence in the data (stock levels, lead times etc)
- One version of the truth – removal of informal maintenance processes and practices
- Accurate forecasting; improved contract and budget management
- Optimised maintenance programmes; reduction in erroneous and incomplete data
- Bespoke Process Mapping for a completely integrated maintenance management solution

Ad-hoc Integrity Supports Services

Although there are significant benefits of embedding Codex Integrity Limited within a clients' organisation, we are also very effective when providing ad-hoc support, including:

- Shutdown planning, resource levelling and critical path identification based on CMMS plans and non-routine activities
- DCS and Software Change Management – audits of systems and processes
- Change management improvement and CMMS Master Data process validation
- RFID equipment tracking and implementation - Technical support

For further information please contact:

Europe, Middle East and Africa

Codex Integrity Limited
Obsidian Office Complex
Chantry Court
Chester, CH1 4QN, UK
T: +44 (0) 1244 220 055
F: +44 (0) 1244 220 088
E: contact@codexintegrity.com

Aberdeen

3rd Floor, Riverside House
Riverside Drive
Aberdeen
AB11 7LH, UK
T: +44 (0) 1224 224 330
F: +44 (0) 1224 224 301
E: contact@codexintegrity.com

Codex Integrity Limited provides organisations within the energy, process and marine sectors with in-depth CMMS expertise in running maintenance management systems as well as implementing or updating existing systems.

Computerised Maintenance Management Systems – Implementation & Support

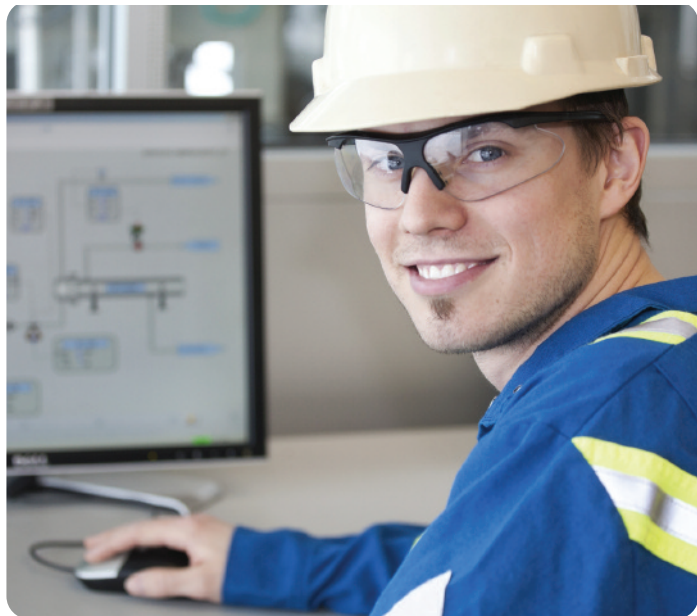
Codex Integrity's CMMS specialists can provide support with the following:

- Audit of CMMS and Action Plan to Optimise the CMMS
- Safety Critical Element Identification and Work Order Compliance Reporting
- Set-up of Bespoke Maintenance KPI Suite and Management Reports
- Management of Change - of CMMS Design and CMMS Master Data
- CMMS Process Design, Build & Configuration
- CMMS Post Implementation Reviews and Master Data Rework
- Master Data Engineering Review and Build
- Maintenance Plan Reviews & Optimisation
- CMMS Workforce Training - Raising Work Requests / Notifications & History Capture
- CMMS Migration Support
- CMMS User Acceptance Testing
- CMMS Selection Process - Technical Support
- Planning & Scheduling Processes and Load Balancing

Why use Codex Integrity Limited?

Our experienced technical staff have the practical experience implementing Global CMMS projects at multiple sites and of working with Operations and Engineering teams at site to ensure a practical and common sense approach is adopted with the use of any CMMS. We also have the in-house Engineering Support to complement our team of CMMS Specialists and ensure we always deliver a robust CMMS solution that meets the requirements of the end user.

With our specialist experience in multiple CMMS systems we are able to deal with any issue you may have within the maintenance environment.



Codex Integrity CMMS detailed support

Codex Integrity is often called in to improve, review or update specific areas within a CMMS. As such we provide detailed support for:

- Equipment Register & Technical Object Structure
- Maintenance Plans & Strategy Reviews
- Work Request / Notification Backlog Management
- Work Order Backlog Management and Reporting - by Criticality / Performance Standard
- Materials Cataloguing and Bill of Materials Review and Build
- Gap Analysis between Engineering Drawings, Equipment Tagged at Site and Equipment in the CMMS
- CMMS External Interfaces to Other Systems
- Build of Maintenance Management Reports and KPI's
- Process Integration Support with Finance, Supply, HR modules
- Training End Users at Site (on and offshore)
- RFID Equipment Tracking and System Installation

At Codex Integrity we work with the client to ensure we deliver the correct CMMS solution for your needs. We pride ourselves on creating successful working relationships and have strong experience managing multi-discipline, international teams. We have a commitment to high quality and a deep understanding of what is required for both the end users and management that sets us apart.

Our recommendations are always driven by a focus to contribute towards a safe, cost effective and reliable asset for the client.

Potential Benefits

Our clients benefit from:

- A reliable, robust, audit-proof CMMS system
- A CMMS system built to your bespoke requirements
- The ability to demonstrate equipment history and safety critical maintenance compliance to regulators
- Locked-down, defined and optimised maintenance routines and processes – leading to improved reliability and ability to effectively plan and schedule
- The ability to manage and report by maintenance cost, discipline, equipment and system and to target areas for improvement
- Optimised failure reporting – allowing targeting of high cost, repeat failures
- A clear and independent assessment of the state of an asset's CMMS and wider maintenance processes

For further information please contact:

Europe, Middle East and Africa

Codex Integrity Limited
Obsidian Office Complex
Chantry Court
Chester, CH1 4QN, UK
T: +44 (0) 1244 220 055
F: +44 (0) 1244 220 088
E: contact@codexintegrity.com

Aberdeen

3rd Floor, Riverside House
Riverside Drive
Aberdeen
AB11 7LH, UK
T: +44 (0) 1224 224 330
F: +44 (0) 1224 224 301
E: contact@codexintegrity.com



Codex Integrity Limited is a technical service provider within the energy, process and marine sectors; specialising in providing support for design, commissioning, in-service operation and asset life-extension. We also support owner/operators in the complexities of achieving statutory and regulatory compliance.

Integrity Management

Corrosion Engineering

Pipeline Operations and Engineering

Structural Engineering

Instrumentation and Electrical Engineering

Computerised Maintenance Management Systems Implementation

Maintenance Management and System Audits

Training

Europe, Middle East and Africa

Codex Integrity Limited
Obsidian Offices, Chantry Court, Chester West Employment Park, Chester, CH1 4QN, UK.
T +44 (0) 1244 220 055 F +44 (0) 1244 220 088

Aberdeen

3rd Floor, Riverside House, Riverside Drive, Aberdeen, AB11 7LH, UK.
T +44 (0) 1224 224 330 F +44 (0) 1224 224 301



contact@codexintegrity.com
www.codexintegrity.com