



INSPECTA GROUP LTD

Asset Integrity Management & Well Services

INSPECTA PORTFOLIO



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INTRODUCTION & COMPANY HISTORY

Inspecta Group is a multinational company originally founded and registered in 1991 by Mr. Mahmoud Alshehry in the United States, operating as a consultancy office in Roanoke, Virginia.

The company initially provided specialized supervision & consultancy services in welding, repairs, Non-Destructive Testing (NDT), and quality control for various industrial projects.

In 1995, Inspecta Group relocated its main headquarters to Abu Dhabi, United Arab Emirates, strategically positioning itself to serve the Oil & Gas, Petrochemicals, and Power industries across the Gulf region, as well as the broader Middle East & North Africa (MENA).

Today, Inspecta Group stands as a leading provider of AIMS-Asset Integrity Inspection Services including RBI-Risk Based Inspection, ANDT-Advanced Nondestructive Testing, Integrity Technologies, FFS, RLA & QA/QC Services, proudly serving major clients across the Middle East, Europe, Central Asia & Africa region through its operational offices in the United Arab Emirates, United Kingdom, Algeria, Egypt, Saudi Arabia, Bahrain, Qatar, Oman, Turkey, Uganda, Kazakhstan & Uzbekistan.



INSPECTA GROUP LTD

Asset Integrity Management & Well Services



Dear All,

At Inspecta Group, we believe that the integrity of assets is directly linked to the safety, sustainability, and success of operations across industries. Since our inception 34 years ago, we have remained steadfast in our mission to be the most trusted provider of Asset Integrity Management Services worldwide.

Much like a strong healthcare system protects human life, Asset Integrity Management (AIM) safeguards the lifeline of industrial infrastructure. Today, AIM is a vital component of operations in Oil & Gas, Power Generation, Fertilizers, Utilities, Mining, Maritime, Rail, and Aviation sectors—ensuring assets are built, operated, and maintained safely, efficiently, and in compliance with global standards.

At Inspecta Group, we provide a full spectrum of services, including Risk-Based Inspection (RBI), Fitness for Service (FFS), Advanced NDT, Quality Assurance, Plant Integrity Assessments, Rope Access, and Subsea Inspections. With the advancement of technology, we continue to adopt cutting-edge tools and techniques that allow us to detect defects before they become failures helping our clients prevent costly downtime, environmental harm, or threats to human life.

Our strength lies in our people and systems. We've consistently invested in top-tier talent, advanced technology, and internationally recognized systems. Today, we proudly hold key accreditations and memberships including ISO, IRATA, LEAA, and IMCA, reflecting our commitment to safety, quality, and performance excellence.

As the Founder and President, I extend my sincere thanks to our clients, partners, and team members for their continued trust. I encourage you to explore this portfolio, brochure and our official website to learn more about how we can support your operations with precision, reliability, and integrity.

We look forward to building a safer, smarter, and more sustainable future together.

With Warm regards,

Mahmoud Al Shehry

B.Sc. MET (1977), ASNT Level III (1989)

Founder & President



Review Us



SPECIALIZED SERVICES – A I M S

ON-STREAM / OFF-STREAM IN-SERVICE INTEGRITY INSPECTIONS INCLUDES;

1. ADVANCED / CONVENTIONAL ANDT/CNDT INSPECTION & TESTING COMPRISING THE FOLLOWING TECHNIQUES

- Ultrasonics- AUT, TOFD, & PAUT Corrosion Mapping on Piping, Pressure Vessels & Tanks
- Long Range Guided Wave Ultrasonic Testing LRUT on Pipelines and Piping
- Tube Inspection of Heat Exchangers, Boilers & Coolers – IRIS, ECT, RFECT, NFT & MFL
- CUI- Corrosion under Insulation Survey on Pipes, Vessels & Structures– PEC
- Replica Testing for Furnace and Heaters Tubes
- Tank Inspection & Corrosion Mapping – MFL / UT Scanning
- Radiography, CRT & SCAR & Digital RT
- Crack Detection & Survey – ACFM
- AET Acoustic Emission Testing on Tanks, Pressure Vessels

2. ABSEILING (ROPE ACCESS) INSPECTION ON REMOTE OR INACCESSIBLE LOCATIONS

3. PIPELINE INTEGRITY INSPECTION SERVICES

- ILI- In-Line Inspection for Pipelines- Piggable & Non Piggable
- CIPS-Closed Interval Potential Survey
- DCVG-Direct Current Voltage Gradient
- LRUT on Pipelines, Tubular Structures & Road Crossings

4. ASSET INTEGRITY ENGINEERING SERVICES

- RBI-Risk Based Inspection Management
- FFS-Fitness for Services
- RLA-Remnant Life Assessment
- Provision of API Certified API Plant Inspectors & Engineers
- ATEX Surveys

5. DOWN-STREAM PROJECTS, CONSTRUCTION AND FABRICATIONS WORKS

- Provision of TQM, QA/QC, CNDT, PWHT and CP Services

6. UP-STREAM INSPECTION SERVICES

- Drilling Rigs Inspections and Surveys
- OCTG Tubulars Inspection

7. MARINE & SUBSEA INSPECTION SERVICES INCLUDES

- Subsea Inspection CP, UT, FMD, ACFM & ROV Inspection Services
- Diving works including SBM Maintenance, Free Span Correction of Pipelines & Repair works

8. INDUSTRIAL CLEANING

- Mobile Cleaning Unit (MCU), Heat Exchanger Cleaning

9. REGULATORY INSPECTION SERVICES

- **Pressure Equipment (ESP)**
 - Compliance with Algerian laws, the national and international standards (ie; PED, ASME etc.)
 - Periodic inspection of boilers, tanks, and piping systems
 - Verification of safety valves, pressure gauges, and integrity under operating conditions
 - Documentation traceability and conformity reports
- **Lifting & Handling Equipment (APL)**
 - Inspection of cranes, hoists, forklifts, and lifting accessories
 - Load testing, structural integrity checks, and safe working load validation
 - Compliance with BS 7121, ISO 9927, and national labor regulations
 - Certification and tagging of equipment post-inspection
- **Electrical Installations & Equipment (APE)**
 - Regulatory audits of industrial electrical systems and switchgear
 - Verification of grounding, insulation resistance, and protection devices
 - Compliance with IEC standards and national safety codes
 - Risk assessment and preventive maintenance planning



ACCREDITATIONS – ISO & OTHER MAJOR CERTIFICATIONS

Inspecta Group holds Certifications and Memberships from ISO 9001 (Since 2004), ISO IEC 17020 Certification, ISO 14001, ISO 45001 Certification, ARH Prequalification Certificate, APG/APV and WPS/PQR, NDT approvals by the ministry of Energy & Mines and LEEA (Lifting Equipment Engineers Association) Certification in our different branches across the globe. The Inspecta Group has been operating under a Quality Management System for more than three decades, ensuring a quality service is provided to our clients across our operations. Inspecta International also operates under corporate level HSE Management System & Secure IT Policy that provides a systematic approach to the implementation and management of a successful health and safety program within the company

1		ISO IEC 17020 Certificate of Approval (UAE, KSA)
2		ISO 9001 - Certificate of Approval
3		ISO 14001- Certificate for Environmental Management System
4		ISO 45001- Health & Safety Management System
5		LEEA - Lifting Equipment Engineers Association (KSA)
6		ISO/IEC 17020:2012: ALGERAC Accreditation, Algeria No. 2-077 Rev 00, as a Type "A" inspection body
7		ARH Prequalification Certificate, Algeria No. 49, authorizing operations in the hydrocarbons sector for regulatory control and technical inspection
8		NDT Approval - Issued by the Ministry of Energy and Mines, Algeria Reference No. 2023/79 Regulatory Non-Destructive Testing (NDT)
9		APG/APV and WPS/PQR Approvals - Issued by the Ministry of Mines, Algeria Reference No. 2023/77 Welding Procedure Specification and Qualification Records (WPS/PQR) Reference No. No. 2024/211 Periodic Regulatory Inspections of Gas and Steam Pressure Equipment (APG/APV).

COMPANY WORK EXPERIENCE- CURRENT WORKLOADS

	Client	Project/Contract	Location	Nature of Work
01	ADNOC OFFSHORE	4700026110	UAE	Provision of NDT, ANDT, Welding & Abseiling Inspection Services
02	AL KHAFJI JOINT OPERATIONS (KJO)	GQ702ES20	Saudi Arabia	Safety Inspection & Certification of Overhead Cranes, Hoists Elevators & Other Lifting Appliances.
03	MARAFIQ KSA	7300024675	Saudi Arabia	Non-Destructive Testing Services
04	CONSOLIDATED CONTRACTORS COMPANY W.L.L. (CCC)	1244-CCC-IIS-0008	Saudi Arabia	Welding of PQR, WQT, NDT, DT & Mechanical Test- Zuluf Hydrocarbon Processing Facilities, Utilities & Water injection
05	SAUDI ARAMCO REFINERY MOBIL CO.-SAMREF	4600002000	Saudi Arabia	Provision of Services for inspectors Manpower Supply
06	SAUDI ARAMCO REFINERY MOBIL CO.-SAMREF	4600002206	Saudi Arabia	Provision of services for QA/QC API Inspectors/Plant Inspector/Inspection Engineer



COMPANY WORK EXPERIENCE- CURRENT WORKLOADS

Client		Project/Contract	Location	Nature of Work
07	SAMREF	4600002000	Saudi Arabia	Provision of Inspectors manpower contract for Technical Department
08	GULF STEEL FACTORY	GSF-038-PR-01	Saudi Arabia	Provision of CNDT and PWHT Services
09	TOTAL ENERGIES	4000131	Uganda	Mobilization, Training, Examination and Certifying of 75 beneficiaries in Erecting and Rigging training for ECITB – ICE Certification, Level III.
10	QATAR FUEL (WOQOD)	QF/02/C/02/11214 216/17/22	Qatar	Services for Non-Destructive Testing
11	QATAR PETROCHEMICAL COMPANY (QAPCO)	QC14401800	Qatar	Annual Inspection Services
12	GUPCO	GUP-EC-21-002	Egypt	Provision of Technical Inspection Services
13	GUPCO	GUP-OM-21-008	Egypt	Provision of Rope Access Technique Services
14	MANSOURA PETROLEUM CO.	OPR-2-20/A	Egypt	Provision of Manpower & Integrated Inspection Services
15	PETRODESOUQ	Farm-in PD-0108-20	Egypt	Provision of Manpower & Integrated Inspection Services
16	GESCO	INSP-GESCO-2024-07	Egypt	Rental of Downhole Tools, Jars, Shock Subs, Drill Pipes, Drill Collars
17	WAVE	INSP-BD-05-2024	Egypt	Rental of Downhole Tools, Mud Motors, Jars, Shock Subs, Circulation Subs, Drill Pipes, Drill Collars
18	POSS	POSS-26225DHT	Egypt	Rental of Downhole Tools, Jars, Shock Subs, Circulation Subs
19	DRILLEX- HALLIBURTON	DL25-5456U	Oman	Rental of Mud Motors

CURRENT & COMPLETED CONTRACTS- ALGERIA

Client		Project / Contract No	Contract Date	Scope of Work
20	GROUPEMENT BERKLINE SH/AAC	SC/4032720/20	20/12/2020 – 20/12/2024 5-Year Contract	On-Site Corrosion Inspection & Monitoring Services
21	GROUPEMENT SONATRACH-ENI	S25E105405	15/09/2025 Ongoing 2-year contract Call-out (with an Optional 1-Year Extension)	INSPECTION SERVICES FOR DRILLING AND WORKOVER EQUIPMENT ON CALL-OUT BASIS
22	SARL C.E.E.R.I SARMOUK	PO No. 001-INSP-2022 & 002-2023	Oct-22 – Feb-23	Provision of Qualified Personnel in ESP, APL, and Civil Engineering



CURRENT & COMPLETED CONTRACTS- ALGERIA

Client		Project / Contract No		Contract Date	Scope of Work
23	HELIOS SPA	PO No. 20BCP558	Feb-23	ESP Inspection Services (Establishment of a piping list)	
24	EURL EPME GROUPEMENT GTFT	PO No. 06/2023	Feb-23	Provision of NDT Inspectors Level II PAUT with Equipment	
25	SGS QUALITEST ALGERIE S.P.A	PO No. 154/2023	May-23	Provision of NDT Inspectors Level II MFL with Equipment	
26	SORFERT ALGÉRIE SPA	PO No. 230000463	May-23	Provision of NDT Inspectors Level II PAUT with Equipment	
27	WELDING AND CONTROL	PO No. 005/2023	May-23	Provision of NDT Inspectors Level II PAUT with Equipment	
28	ARISE GLOBAL PTE LTD	PO No. ARISE100633	Jun-23	Provision of NDT Inspectors Level II MFL with Equipment	
29	SORFERT ALGÉRIE SPA	PO No. 230000656	Jan-24	Provision of NDT Inspectors Level II PAUT with Equipment	
30	ENAFOR	PO No. 60103180	Apr-24	Provision of ATEX Inspection	
31	GCB	PO No. 33/TECH/DEP/ GCB/2024	Aug-24	Visual Inspection for a Pipeline Stock	
32	GROUPEMENT BERKINE	Contract No. SC/4032720/20	2024–2025	Metallographic Replicas for : Stabilizer, Heater H1-101A (HBNS Site), Heater H02-4101 (ELM Site)	
33	HELIOS SPA – ASU ARZEW & HAOUD BERKAOU	Contract No. 01/DUS/2024	Aug-24 Ongoing 3-year contract Call-out & Shutdowns	Execution of regulatory technical requalification of equipment and piping at the Helium Plant	
34	ENERGO S.R.L SKIKDA REFINERY RA1K	PO Dated 23/02/2025	Dec-24 – Feb/Mar 2025	NDT & ANDT Services (Works on reactors 103-R31/R32 & 103-R33/R34 of the Reforming Unit)	
35	BMS OC – BASE MONDLY SERVICES SARL	BMS-16253	15/04/2025 Ongoing 2-year contract Call-out (with an Optional 1-Year Extension)	Technical Industrial Control Services for pressure equipment (ESP, APE, CP, NDT, ANDT, API)	
36	ENAFOR	Contract No. 02/AON/DMEP/ ENAFOR/2024	Jun-25 Ongoing 3-year Contract – Call-out	Inspection of Drill Rods and Bottomhole Equipment	
37	SONATRACH ORGANISATION OURHOUD	PO No. 32720	30/06/2025 Ongoing, 45– 60 days of intervention	Expertise service on corrosion of 10-inch QB10 and SAT 02 flowlines	
38	SARL GTPHB NAFTAL, SIDI ARCINE	PO No. 019/2025	05/06/2025 Ongoing, 45–60 days of intervention	Weld Inspection of a sphere for a length of 874 linear meters (TOFD / PAUT)	
39	COMPLEXE CP12	Contract No. 36/T/CP12/2025	Sept 2025 18 Months Contract	Regularization of technical files of production equipment, in compliance with decrees 21-261 and 21-315	
40	HELISON SPA, SKIKDA	Convention No. 01/2025	Sept 2025 Ongoing 3-year Contract – Call-out & Shutdowns	Inspections, Regulatory Technical Controls, and Expertise Services for the Decommissioning of Equipment and Assets of HELISON Spa	



COMPLETED CONTRACTS OF LAST 5 YEARS

	Client	Project / Contract No	Location	Contract Completed
1.	SAUDI ARAMCO REFINERY-SAMREF KSA	4600002206	Saudi Arabia	15/03/2024
2.	SAUDI ARAMCO REFINERY- SAMREF KSA	4600002000	Saudi Arabia	15/03/2024
3.	SAMREF	4600002000	Saudi Arabia	15/03/2024
4.	ADNOC ABU DHABI	470284	U.A.E.	28/04/2025
5.	GULF STEEL FACTORY	GSF-038-PR-01	Saudi Arabia	09/10/2023
6.	PETROJET- KSA	6060/2022	Saudi Arabia	01/03/2023
7.	WOQOD QATAR	QF/02/C/02/ 1124111/44/20	Qatar	06/02/2023
8.	QATAR PETROCHEMICAL CO.- QAPCO	QC14401800	Qatar	31/12/2023
9.	THE PETROLEUM PROJECTS AND TECHNICAL CONSULTATIONS CO.	50144/21012	Saudi Arabia	31/12/2022
10.	CRITICAL ENGINEERING	CEC-2021-0506	Saudi Arabia	07/06/2022
11.	MANSOURA PETROLEUM CO. EGYPT	OPR-2-20/A	Egypt	20/12/2022
12.	QAPCO QATAR	RFQ/201401 254/AB	Qatar	31/12/2022
13.	NATIONAL BASICS COMPANY LTD	NBC 0001/NSH	Saudi Arabia	20/04/2022
14.	THE PETROLEUM PROJECTS AND TECHNICAL CONSULTATIONS CO.	50144/21012	Saudi Arabia	31/12/2022
15.	PETRODESOUQ EGYPT	PR-390	Egypt	31/03/2021
16.	EBGDCO EGYPT	PO-2020148	Egypt	31/03/2021
17.	UGANDA ELECTRICITY GENERATION COMPANY LIMITED (UEGCL)	UEGCL/CONS/20-21/00091	Uganda	17/03/2021



RESOURCES – PERSONNEL WITH CERTIFICATION AND EXPERIENCE

Job Categories		Quantity	Certification & Experience
01	NDT Level III Personnel	7 Nos.	ASNT NDT Level III: LPT, MPT, UT, VT, ECT, MFL, RT & PCN Level III: PAUT, TOFD, UT
02	Senior Inspection Engineers (Welding and Coating)	40 Nos.	Welding: CSWIP 3.2 or CWI / Coating: NACE or BGAS-3 plus 10 years' experience
03	Asset Integrity Specialist	48 Nos.	API: 510 (Pressure Vessel), 570 (Piping), 653 (Aboveground Storage Tank), 580 (Risk-Based Inspection), 571 (Damage Mechanisms), ASNT NDT Level II
04	RBI Inspector	10 Nos.	API-580 (Risk-Based Inspection)
05	Statutory Engineer	5 Nos.	API 510/570/65, ASME Authorized Inspector, NEBOSH / IOSH
06	Compliance Engineer	2 Nos.	ISO 9001/ISO 45001/ISO 14001, NEBOSH / IOSH
07	Inspection Engineers (Welding & Coating)	50 Nos.	Welding: CSWIP or CWI / Coating: NACE or BGAS-I CSWIP plus 5 years' experience
08	Senior NDT Inspector	40 Nos.	ASNT NDT Level 2: UT, PT, MT, RT, VT& ECT plus 10 years' experience
09	Senior Phased Array Ultrasonic Testing (PAUT)/ Time of Flight Diffraction Testing (TOFD) Inspector	13 Nos.	ASNT PAUT Level 2 or ISO PAUT Level 2 plus manufacturer certificate plus 10 years' experience
10	Senior ACFM The Alternating Current Field Measurement (ACFM) Inspector	7 Nos.	ASNT ACFM Level 2 or ISO ACFM Level 2 plus manufacturer Certificate plus 10 years' experience
11	Senior Tubing ECT/RFET/IRIS/MFL/NFT/NFA of Heat Exchanger Tubes Inspector	12 Nos.	ASNT ECT Level 2 or ISO ECT Level 2 plus manufacturer Certificate plus 10 years' experience
12	Senior PEC Pulsed Eddy Current Testing (PECT) Inspector	3 Nos.	ASNT ECT Level 2 or ISO ECT Level 2 plus manufacturer certificate plus 10 years' experience
13	Senior Magnetic Flux Leakage Testing for Storage tanks Inspector	6 Nos.	ASNT MFL Level 2 plus manufacturer certificate plus 10 years' experience



RESOURCES – PERSONNEL WITH CERTIFICATION AND EXPERIENCE (CONT'D)

Job Categories		Quantity	Certification & Experience
14	Senior (Long Range Ultrasonic Testing (LRUT) Inspector	6 Nos.	ASNT LRUT Level 2 or CSWIP LRUT Level 2 plus manufacturer certificate and ASNT Level 2 (UT) plus 10 years' experience
15	Multidiscipline NDT Technicians	200 Nos.	ASNT NDT Level 2: UT, PT, MT, RT, VT, ECT plus 4 years' experience
16	(PAUT) Phased Array Ultrasonic Testing (PAUT)/ Time of Flight Diffraction Testing (TOFD) Technician	13 Nos.	ASNT PAUT Level 2 or ISO PAUT Level 2 plus manufacturer certificate plus 5 years' experience
17	The Alternating Current Field Measurement (ACFM) Technician	3 Nos.	ASNT ACFM Level 2 or ISO ACFM Level 2 plus manufacturer Certificate plus 5 years' experience
18	Tubing ECT/RFET/IRIS/MFL/NFT/NFA of Heat Exchanger Tubes Technician	20 Nos.	ASNT ECT Level 2 or ISO ECT Tubing Level 2 plus manufacturer Certificate plus 5 years' experience
19	PEC Pulsed Eddy Current Testing (PECT) Technician	3 Nos.	ASNT ECT Level 2 or ISO ECT Level 2 plus manufacturer certificate plus 5 years' experience
20	MFL Tank Magnetic Flux Leakage Testing for Storage tanks Technician	4 Nos.	ASNT MFL Level 2 plus manufacturer certificate plus 5 years' experience
21	(Long Range Ultrasonic Testing (LRUT) Technician	16 Nos.	ASNT LRUT Level 2 or CSWIP LRUT Level 2 plus manufacturer certificate and ASNT Level 2 (UT) plus 5 years' experience
22	Rope Access Personnel	166 Nos.	IRATA Level (1, 2, & 3) plus ASNT NDT Level 2: UT, PT, MT, VT & ET
23	Cathodic Protection Specialist	2 Nos.	NACE CP4
24	Cathodic Protection Technologist	4 Nos.	NACE CP3
25	Cathodic Protection Technician	3 Nos.	NACE CP2
26	NACE CP1: Cathodic Protection Tester	16 Nos.	NACE CP1
27	Corrosion & Monitoring and Retrieving Technicians	13 Nos.	Corrosion Monitoring & Retrieving Authorized Technician AXESS
28	Lifting Equipment Engineers	12 Nos.	LEEA Certificates for lifting equipment inspection and accessories
29	Overall Management / Staff Administrators	75 Nos.	Multiple Certifications & Achievements


RESOURCES – EQUIPMENT - NDT & PWHT

Sr.#	Description	Quantity
01	Ultrasonic Equipment a) Flaw Detectors b) Wall Thickness	120 Nos. 30 Nos.
02	Gamma Ray Equipment a) Tech /Ops projector provided with drive control unit and guide tube	30 Nos.
03	X –Ray Machine with complete set	03 Nos.
04	X- Ray Crawler Machine compete set	02 Nos.
05	Radiation Monitor – Survey Meters	80 Nos.
06	Densitometers	30 Nos.
07	Dosimeters	250 Nos.
08	Dark Room Facilities	60 Nos.
09	Hardness Testers	15 Nos.
10	Post Weld Heat Treatment Equipment a) Transformer b) Recorder c) Programmer d) T/C Welding Unit	10 Nos. 10 Nos. 10 Nos. 05 Nos.
11	Magnetic Particle Equipment a) AC Yoke b) Permanent Magnetic Yoke	100 Nos. 200 Nos.
12	Flexible Fiber / Boroscope	04 Sets
13	Painting Inspection Kit	14 Sets
14	CIPS Equipment	01 Set
15	DCVG Equipment	01 Set



RESOURCES – EQUIPMENT- ADVANCED NDT

Sr.#	Description	QTY	Key Features / Brand
1	Tube Inspection (ECT / IRIS / RFECT / NFT / MFL)	15 Sets	Eddyfi ECTANE 3 (4 sets)
			Olympus MULTISCAN MS5800 (1 set)
2	Long Range Ultrasonic Testing (LRUT)	10 Sets	MK4 Teletest Focus System (3 sets)
			Eddyfi SONYKS™ (5 sets)
			Wavemaker® G3 (1 set)
			Wavemaker® G4 (1 set)
3	Alternating Current Field Measurement (ACFM)	02 Sets	Eddyfi Amigo2 SE
4	Pulsed Eddy Current (PEC)	02 Sets	Lyft® Portable PECA™ Unit
5	Corrosion Under Insulation (CUI) Profiling	01 Set	LIXI PROFILER CUI
6	Magnetic Flux Leakage (MFL) Tank Floor Inspection	03 Sets	Eddyfi FLOOR MAP X, FLOOR MAP VS2
7	Phased Array Ultrasonic Testing (PAUT) / Time-of-Flight Diffraction (TOFD)	12 Sets	GEKKO® 64:128PR with real-time TFM64 (4 sets)
			GEKKO® 32:128PR with real-time TFM (4 sets)
			Olympus OMNISCAN - X3 (3 sets)
			Olympus OMNISCAN – MX2 (1 set)
8	Digital Radiography (DR)	01 Set	Carestream NDT INDUSTREX HPX-1 Plus Digital System
9	Cathodic Protection (CP) Surveying	05 Sets	EP TECH CIPS / DCVG DATA LOGGER (EPT/HEX-4000 & EPT/CI-100)
10	CP Mechanical Retriever Kits	04 Sets	COSASCO
11	CP Hydraulic Retriever Kits	02 Sets	EMERSON
12	Automated Ultrasonic Testing (AUT) Solutions	02 Sets	ACCUTRAK-AUT Solutions
13	SRUT (Short Range Guided Wave Inspection)	02 Sets	ISONIC 3505
14	Acoustic Emission	01 Set	MISTRAS Acoustic Emission System, 40 Active Channels

RESOURCES – EQUIPMENT – ROPE ACCESS TECHNIQUE

Sr.#	Description	Quantity
1	Seat Harness – Waist / Thigh Support	45 Nos.
2	Chest Harness - Upper Body Support	45 Nos.
3	Stop - Rope Descender (Auto-Stop)	45 Nos.
4	Croll - Chest Rope Ascender	45 Nos.
5	Jumar - Hand Ascender	45 Nos.
6	Shunt - Rope Backup / Ascender	45 Nos.
7	Helmets for Head Protection	45 Nos.
8	Connectors – Carabiners / Links	45 Nos.
9	Soft Slings - Fabric Anchor Loops	45 Nos.
10	Steel Slings - Steel Anchor Loops	45 Nos.



ASSET INTEGRITY MANAGEMENT SYSTEM (AIMS)

POWERED BY INSPECTA'S PROVEN EXPERTISE IN THE OIL & GAS INDUSTRY

The Importance of Assets

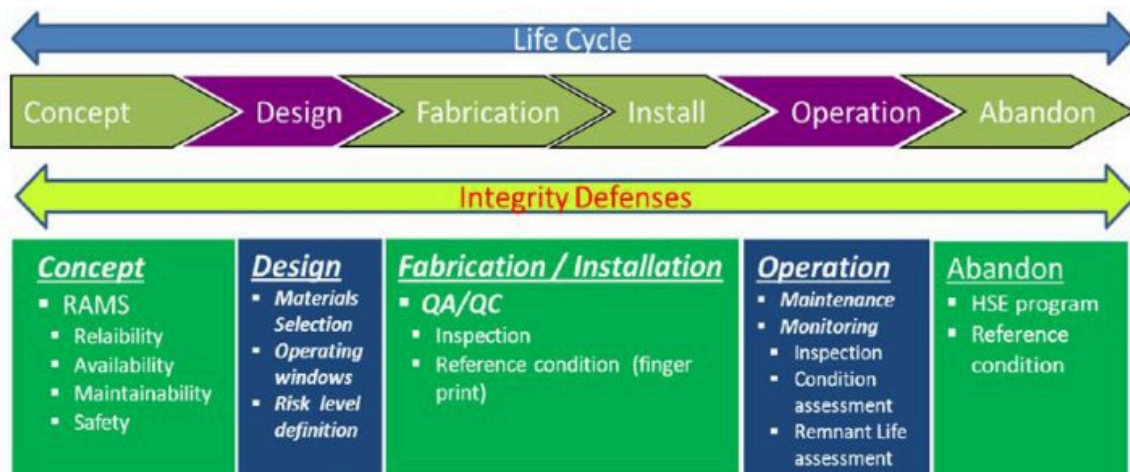
Assets form the very foundation of modern societies and their economies. They represent national investments that secure public welfare, industrial productivity, and long-term prosperity.

AIMS What and Why?

Integrity Is the ability of a process equipment to continue in service safely and efficiently performing the purpose it has been designed for throughout its surface life

AIMS is an Essential Tool to Avoid/Eliminate catastrophic failures that can lead to significant Impact on People, the Environment, or the Economy.

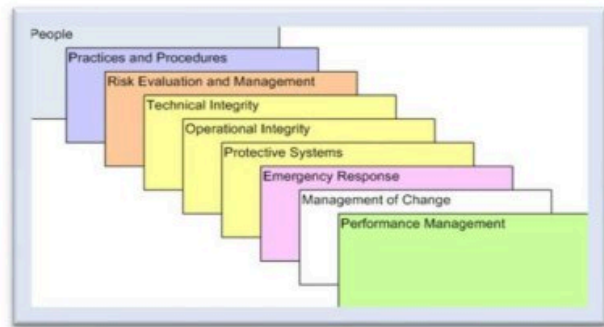
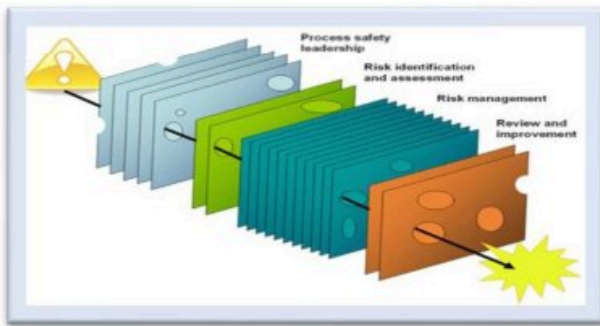
Integrity program is a process that combines quality related activities, implemented throughout the life cycle of an asset or group of assets, to ensure optimal performance and safe operations



A.I.M.S. encompasses several "BARRIERS" put between the production process and asset failure, to avoid any catastrophic and /or uncontrolled failure which should taking into consideration During Design Stage.

Examples of AIMS Elements are:

1. People
2. Practices & Procedures
3. Risk Evaluation and Management
4. Technical Integrity
5. Operation Integrity
6. Critical Safety Systems CSS
7. Management of Change MOC
8. Critical Safety Systems CSS
9. Performance Management
10. Audits and Anomaly Tracking



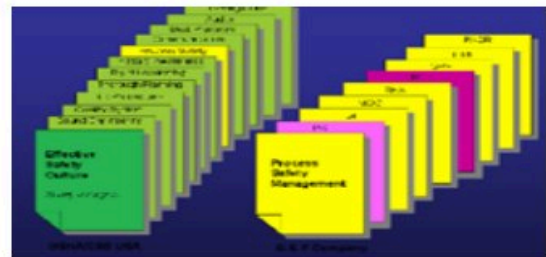
PEOPLE

Integrity cannot be achieved unless the right people are involved, with the right competencies, and clearly defined roles and responsibilities, communications and cooperation.



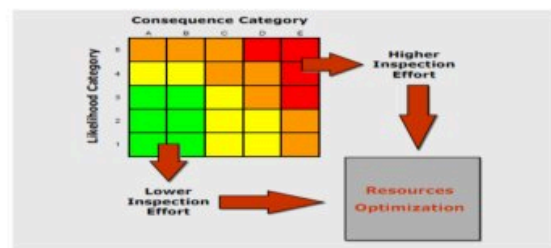
PROCEDURES

The use of processes and procedures is intended to reduce the potential for breaches of integrity, by demanding the use of safe, systematic and consistent ways of working.



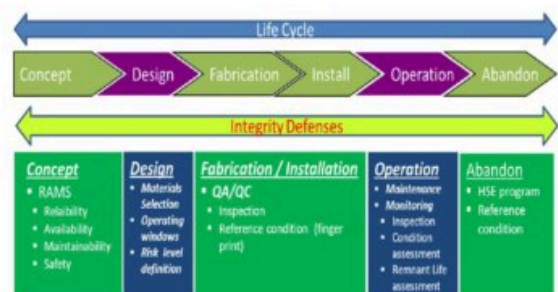
RISK IDENTIFICATION

The evaluation of risk lies at the heart of the AIMS. It is initially necessary to carry out a rigorous hazard evaluation through and detailed analysis.



TECHNICAL INTEGRITY

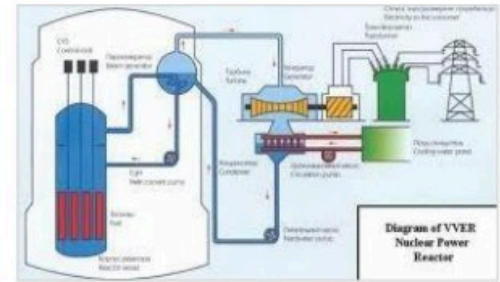
Integrity issues must be fully integrated in the facilities at the design and procurement stage such that all HSE&CSS are suitable for their required function and are capable of being maintained in a condition such that they will continue to perform their required function.





OPERATIONAL INTEGRITY

The asset must still be operated within the Operation Envelop in such a way that integrity is maintained. A key element is to carry out routine monitoring in order to identify any temporary or permanent changes to plant operating Conditions



CRITICAL SAFETY SYSTEMS (CSS)

Protective Systems are those safety systems, devices and controls which are designed to prevent, detect, control or mitigate a major incident, or to facilitate the escape and survival of people.



EMERGENCY RESPONSE

The Emergency Response Plan (ERP) is vital such that recovery from high-risk scenarios is managed by well-studied and well documented plans.



MANAGEMENT OF CHANGE MOC

Any deviation from the original facility design standards or the approved operating standards must be subject to the management of change process. Historically it has been found that the introduction of unauthorized modifications to an existing asset have been a primary contributor to the occurrence of major accidents.



PERFORMANCE MANAGEMENT

Measurement of the AIMS performance is achieved through a series of Integrity Key Performance Indicators (KPIs) and a routine program of internal and external audits. The KPIs have been developed to deliver a simplified and quantified evaluation of achievement and to set proactive targets.





Integrity Is the ability of a process equipment to continue in service safely and efficiently performing the purpose it has been designed for throughout its surface life



HUMAN HEALTH CARE

STAGES OF LIFE

1. PRE-BIRTH
2. BIRTH
3. INFANT
4. CHILD
5. YOUNG ADULT
6. ADULT
7. AGED CARE

FAILURE PREVENTION

VACCINES
CHECK UPS
MEDICATION
OPERATION



ASSET HEALTH CARE

STAGES OF LIFE:

1. DESIGN
2. PRODUCTION
3. FABRICATION
4. CONSTRUCTION
5. START UP
6. OPERATIONS
7. DECOMMISSIONING

FAILURE PREVENTION

STANDARDS, SPECS & PM
QUALITY ASSURANCE & CONTROL
MAINTENANCE PROGRAMS
OVERHAULING & TURNAROUND

- Each industrial asset reflects a nation's investment in safety, sustainability, and future growth.
- Protecting asset integrity is synonymous with protecting people, the environment, and economic stability.
- A robust Asset Integrity Management System (AIMS) is therefore not optional it is an essential strategic tool for eliminating catastrophic failures and safeguarding industrial resilience.



INSPECTA'S ROLE IN ADVANCING AIMS

With decades of field experience, **Inspecta** has been at the forefront of implementing and sustaining AIMS programs across the **oil and gas, petrochemical, and energy sectors**. Our approach integrates **international best practices, advanced inspection technologies, and data-driven integrity analytics** — ensuring that each client's assets operate safely, efficiently, and profitably throughout their lifecycle.

INSPECTA'S PROVEN CONTRIBUTIONS INCLUDE:

- Successful deployment of AIMS frameworks across upstream, midstream, and downstream facilities.
- Integration of **Risk-Based Inspection (RBI)**, **Fitness for Service (FFS)**, and **Remaining Life Assessment (RLA)** programs.
- Leadership in the use of **advanced non-destructive testing (ANDT)** and **digital asset integrity platforms**.
- Development of sustainable inspection strategies that optimize CAPEX/OPEX and ensure long-term reliability.

Through this unmatched experience, Inspecta transforms AIMS from a compliance requirement into a **strategic enabler for operational excellence**.

AIMS: A HOLISTIC HEALTH CARE MODEL FOR INDUSTRIAL ASSETS

AIMS can be envisioned as a **comprehensive healthcare system** for industrial assets.

Just as human health is monitored from birth to maturity, **AIMS ensures continuous integrity care** from design to decommissioning.

From **concept and material selection**, through **fabrication, construction, commissioning, and operation**, every stage is tracked, assessed, and optimized in real-time.

The aim is not merely to detect deterioration but to **prevent it**, ensuring reliability, safety, and sustained performance.

Inspecta's implementation of AIMS guarantees:

- Adoption of best design and engineering practices
- Rigid QA/QC controls throughout fabrication and construction
- Continuous condition monitoring during operation
- Early detection and timely correction of material degradation
- Lifecycle cost optimization and extended service life



AIMS – THE LIFECYCLE APPROACH

- **PRE-OPERATIONAL PHASE**

- **Design Integrity Review**
 - Verification of material suitability, inspect ability, and maintainability
 - Alignment with national regulations and international standards
- **Material Fabrication and QA/QC**
 - Application of advanced QA/QC methodologies, NDT/ANDT, PMI protocols
 - Full traceability and compliance with project specifications
- **Construction and Commissioning**
 - Integrity verification through documentation, testing, and start-up validation

- **OPERATIONAL PHASE**

- **Digital Handover and Asset Dossier**
 - Compilation of design, testing, and commissioning data for full asset traceability
- **AIMS Core Modules**
 - **RBI – Risk-Based Inspection:**
Establishes inspection priorities based on risk and criticality.
 - **ANDT/CNDT – Advanced Field Inspection Technologies:**
Deploying over 20 modern technologies for full asset visibility and zero guesswork.
 - **FFS & RLA – Fitness for Service and Remaining Life Assessment:**
Determines safe operating limits and predicts asset longevity with engineering precision.

This methodology ensures a **closed-loop digital integrity ecosystem**, where each phase feeds into the next — promoting continual improvement and data-driven decision-making.

AIMS IN THE RAILWAY AND TRANSPORTATION SECTORS

Inspecta also extends AIMS applications to the **railway and heavy transportation sectors**, adapting the framework to address sector-specific degradation mechanisms such as:

- Fatigue cracks at flange-web connections, wheel axles, and braking systems
- Track displacement and structural misalignment
- Predictive maintenance through mobile inspection vehicles equipped with **UT, MFL, MPI, and laser alignment systems**

This ensures transportation safety, reliability, and compliance with modern maintenance standards.

Strategic Impact of AIMS Implementation

By embedding AIMS into the national industrial ecosystem, Inspecta enables clients to achieve:

2. **Risk-informed maintenance and resource optimization**
3. **Extended asset service life and improved reliability**
4. **Reduced CAPEX and OPEX through predictive maintenance**
5. **Enhanced environmental protection and sustainability**
6. **Increased national resilience and industrial safety**

In Summary

- Assets are the backbone of every nation's prosperity and safety.
- Investing in asset integrity is an investment in people, the environment, and the economy.
- Through its **proven expertise**, Inspecta transforms AIMS into a **powerful tool for reliability, sustainability, and operational excellence** across the oil and gas industry and beyond.



INSPECTA GROUP LTD

Asset Integrity Management & Well Services

RBI - RISK-BASED INSPECTION

1. INTRODUCTION – THE VALUE OF RISK-BASED INSPECTION

INSPECTA is a regional leader in Asset Integrity Management and Risk-Based Inspection (RBI) solutions. Through the implementation of internationally recognized methodologies such as API RP 580 and API RP 581, INSPECTA helps industrial facilities achieve a smarter and more efficient planning process, ensuring equipment reliability, operational safety, and cost optimization.



In today's industrial environment, facilities face continuous challenges related to equipment aging, limited inspection budgets, and the need for optimized maintenance strategies. Traditional time-based inspection methods often result in either over-inspection or unexpected failures. Risk-Based Inspection (RBI) addresses these challenges by prioritizing inspection efforts based on the probability and consequence of failure. By understanding where the highest risks lie, inspection resources can be allocated more effectively, focusing attention where it truly matters most.



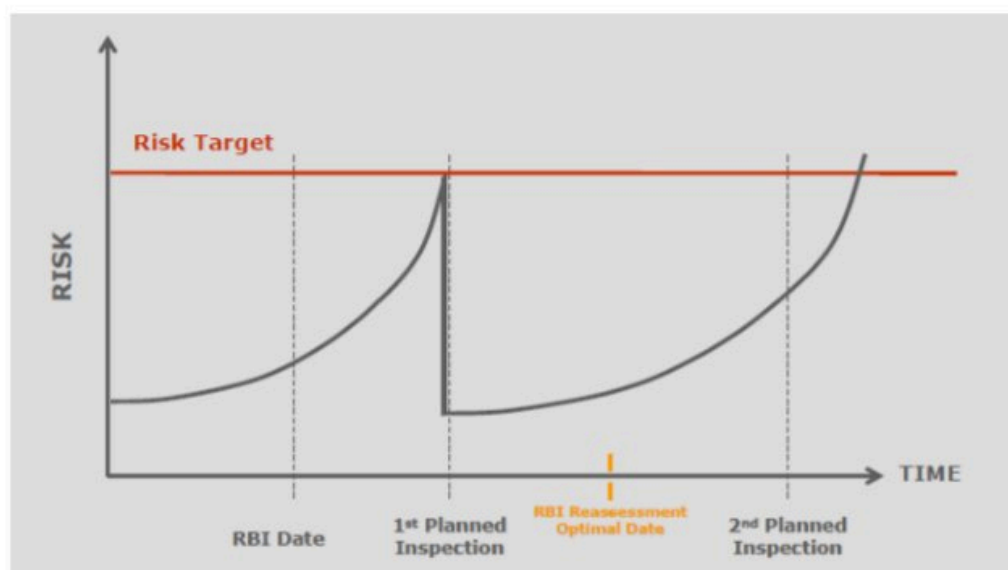
2. INSPECTA'S APPROACH TO RBI

INSPECTA's RBI framework is aligned with API RP 580 and API RP 581, ensuring compliance with recognized international best practices. The approach integrates engineering analysis, data-driven risk assessment, and field experience to provide a credible and traceable risk management process.

The RBI process follows a structured and systematic workflow:

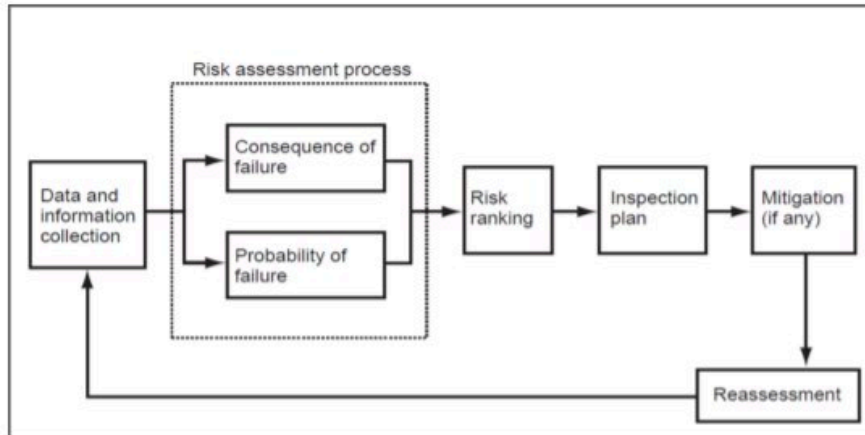
- Data Collection and Verification – Gathering all relevant equipment design, operation, and inspection history data.
- Identification of Damage Mechanisms – Determining how each equipment component can deteriorate based on its service conditions.
- Probability of Failure (PoF) Evaluation – Assessing the likelihood of failure through quantitative or qualitative methods.
- Consequence of Failure (CoF) Evaluation – Estimating the impact of potential failures on safety, environment, and production.
- Risk Ranking and Inspection Planning – Developing a prioritized inspection plan to focus on high-risk items.
- Implementation and Continuous Improvement – Updating the RBI model based on new inspection results, ensuring a living, dynamic system.

Inspection Planning





INSPECTA's RBI assessments are performed using specialized tools integrated with AIMS (Asset Integrity Management System) platforms, enabling efficient data management, traceability, and seamless link with other integrity programs such as FFS (Fitness-For-Service) and Corrosion Monitoring.



3. CORE PRINCIPLES OF RBI

RBI is founded on the concept that risk is a function of two key variables:

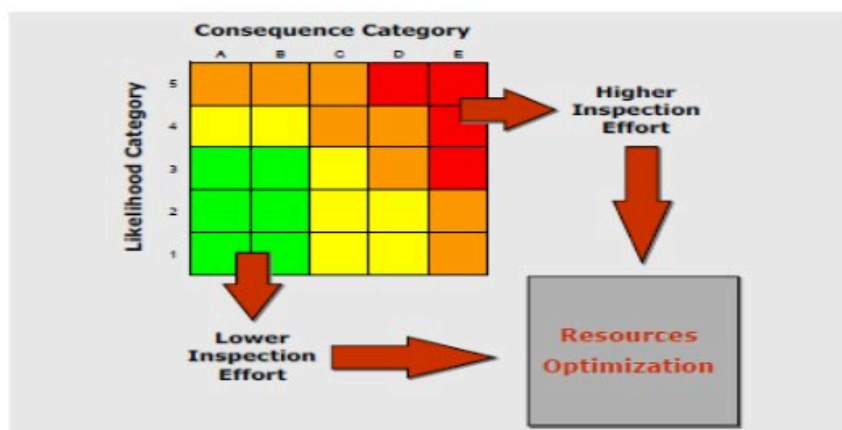
$$\text{Risk} = \text{Probability of Failure} \times \text{Consequence of Failure}$$

The methodology systematically evaluates both aspects to determine where inspection and maintenance efforts should be concentrated.

Probability of Failure (PoF) represents the likelihood that a component will fail due to degradation, corrosion, fatigue, or other damage mechanisms.

Consequence of Failure (CoF) represents the potential impact of a failure in terms of safety, environmental release, and financial loss.

By combining these two parameters, INSPECTA's RBI model generates a risk matrix that visually identifies the most critical equipment. This allows decision-makers to allocate resources effectively and plan inspection intervals that are both risk-informed and cost-efficient.





4. RELATIONSHIP WITH INTERNATIONAL INSPECTION CODES

INSPECTA's RBI program is fully compliant with the requirements of the API inspection codes:

API 510: Pressure Vessel Inspection Code

API 570: Piping Inspection Code

API 653: Tank Inspection, Repair, Alteration, and Reconstruction

These codes recognize RBI as an acceptable method for determining inspection intervals, provided the assessments follow the API RP 580 framework. INSPECTA's RBI methodology satisfies these requirements, ensuring that inspection planning is both technically justified and regulatorily sound.

5. APPLICABILITY OF RBI

INSPECTA applies RBI across a wide range of static equipment and pressure systems, including:

- Pressure vessels and associated components
- Process piping systems
- Storage tanks (atmospheric and pressurized)
- Boilers and heaters
- Heat exchangers and pressure-relief devices

This approach enables our clients to minimize the risk of loss of containment, optimize inspection intervals, and maintain full compliance with safety and reliability standards.

POF Category			Risk				
5	<1 years		MH	MH	MH	H	H
4	1 – 5 years		4	M	MH	MH	H
3	5 – 10 years		1	L	M	4	H
2	10 - 20 years		L	1	M	M	M H
1	>20 years		9	24	3	M	MH
Economy			Moderate Disturbance in operation (<100 K USD)	Serious Damage in operation (100 – 250 K USD)	Major Damage in operation (250 – 1000 K USD)	Catastrophic Damage in operation (1000 – 5000 K USD)	Disastrous Damage in operation (>5000 K USD)
Safety			Moderate	Serious	Major	Catastrophic	Disastrous
Environment			Moderate Effect (<100L)	Serious Effect (100L – 1000L)	Major Effect (1000L – 10000L)	Catastrophic Effect (10000L – 16000L)	Disastrous Effect (>16000L)
COF			A	B	C	D	E



6. BENEFITS FOR CLIENTS

Implementing RBI through INSPECTA offers measurable benefits that extend beyond compliance. Optimized inspection frequency – Reduce unnecessary inspections and focus on high-risk assets. Improved reliability and uptime – Prevent failures and unplanned shutdowns. Enhanced safety and environmental protection – Identify and mitigate high-consequence risks. Data-driven decision making – Use credible and traceable risk data for integrity management. Cost efficiency – Achieve better utilization of inspection budgets and maintenance resources. INSPECTA's multidisciplinary team ensures that RBI implementation delivers real, tangible improvements in operational performance.

7. INSPECTA EXPERTISE AND ADDED VALUE

INSPECTA's strength lies in its team of experienced engineers and specialists covering Integrity Management, NDT/ANDT, RBI, and FFS disciplines. The company combines deep technical knowledge with advanced software and data analytics tools to provide customized RBI solutions adapted to each client's operating environment. By integrating RBI with AIMS and Fitness-For-Service assessments, INSPECTA delivers a comprehensive integrity management framework—one that not only prevents failures but also maximizes the service life of assets.

CONCLUSION

Risk-Based Inspection (RBI) is a cornerstone of modern asset integrity management. INSPECTA's application of the RBI methodology demonstrates its commitment to safety, reliability, and operational excellence. By adopting a risk-based approach, INSPECTA helps clients transform inspection data into actionable insights—achieving the ultimate goal of safer operations, optimized costs, and sustained asset performance.



PIPELINE INTEGRITY

For decades now, pipelines have represented the backbone of the oil and gas industry and ever since, numerous pipeline failures have been documented whereby very heavy or even drastic economical, safety and environmental impact have been encountered. As a result, pipelines operators are now paying due consideration to the proper establishment and continuous implementation of pipeline integrity management programs. A key element of such programs is to identify the threats, which compromise HSE or functionality of the pipeline system.



Key Aspects of Pipeline Integrity:

- **Safety & Reliability:** Guarantees pipelines function effectively, protecting people, communities, and the environment from spills or explosions.
- **Systematic Management:** A comprehensive approach using data, technology, and defined processes to manage risks.
- **Threat Management:** Addresses potential issues like internal/external corrosion, cracks, third-party damage (excavation), and geohazards.
- **Inspection Technologies:** Utilizes In-Line Inspection (ILI) tools (smart pigs) and Non-Destructive Examination (NDE) to find anomalies without shutdown.



INTELLIGENT PIGS – IN LINE INSPECTION (ILI)

Capable to achieve end to end / 360° coverage, intelligent pigging is a typical example of Thorough Inspection. ILI Pigs are used to provide detailed information relating to wall loss, corrosion, erosion, geometry...etc. Magnetic Flux Leakage (MFL) and Ultrasonic (UT) Intelligent Pigs are the most commonly used. Inspecta through their ILI partners provide a wide range of ILI services for pipelines covering 8" to 48" line sizes.



IN LINE INSPECTION (ILI) DATA ASSESSMENT

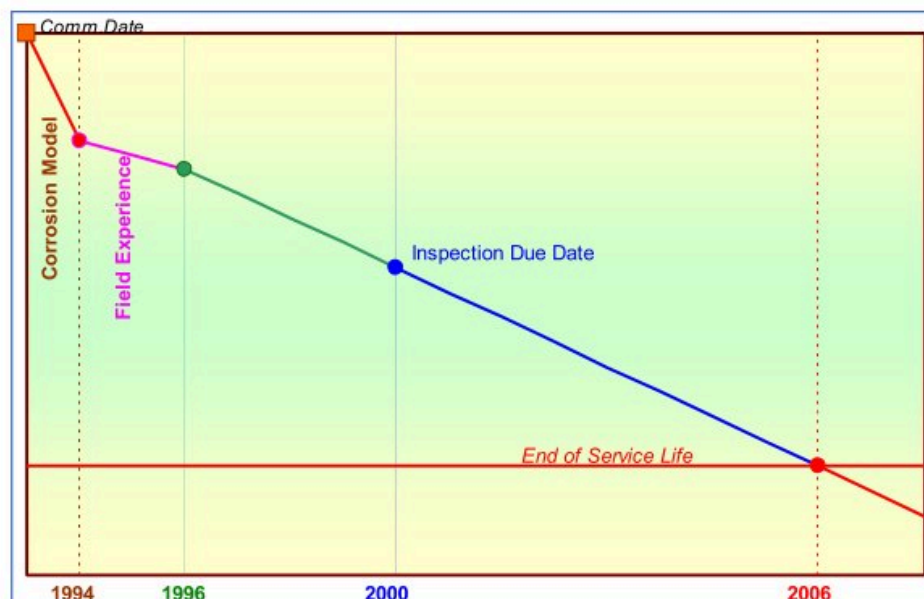
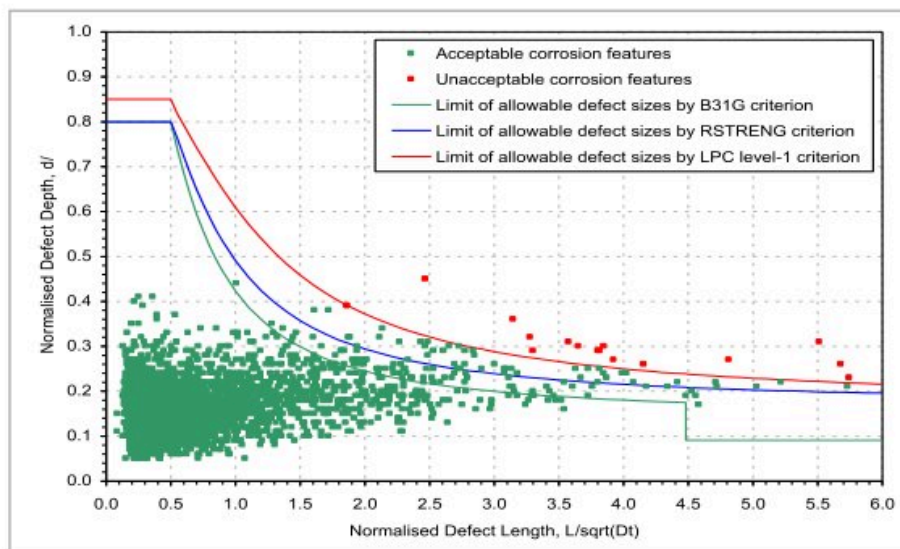
Based on line size (diameter and length), the actual line condition, ILI data is often huge. Inspecta Integrity Specialists utilizes ILI data to provide our clients with a comprehensive pipeline integrity studies that offer pipeline integrity visualization, this includes custom made anomaly histograms interpreting anomalies that exceed retirement thickness or having max allowable pressures less than the line design and the operating pressures thus enable the pipeline operator, to visualize the overall pipeline integrity as well as highlight sections with particular integrity concerns.





PIPELINE DEFECT AND REMENANT LIFE ASSESSMENT

The pipeline inspection program does not end at defining the anomalies, which threaten the pipeline's integrity. The assessment of the detected defects against internationally recognized codes such as B31.G, Shell92, RSTRING is just as important in order to set the required remedial actions. Inspecta through a group of experts can provide in depth assessment of all pipeline ILI anomalies using the above-mentioned codes, as well as calculation of the remnant pipeline life and the risk based next due inspection.

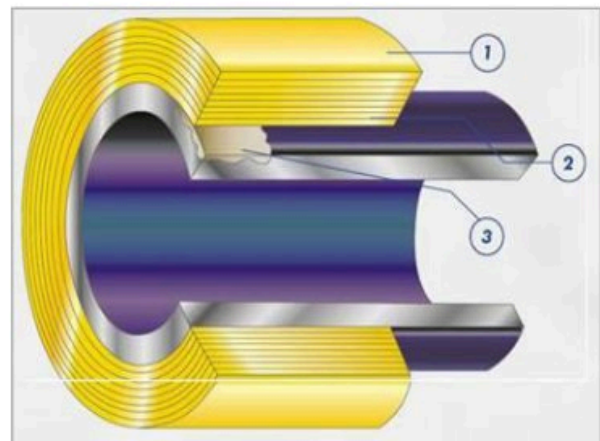




PIPELINE REPAIRS

In addition to PL ILI and results assessment, Inspecta through its expert team can also provide comprehensive studies for PL integrity restoration through a set of repair techniques that can be implemented during PL operation without the need of PL be taken out of service such repair techniques are comprising:

- Mechanical clamps
- Welded sleeves
- Composite repair using Clock Spring
- Composite repair using continuous wrapping





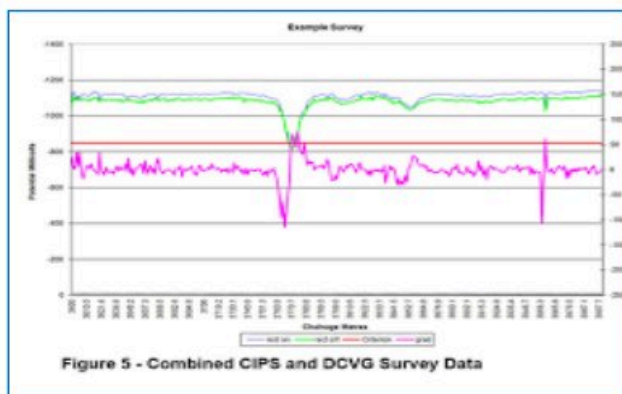
DIRECT CURRENT VOLTAGE GRADIENT

DCVG uses voltage gradients of buried, cathodically protected pipelines to assess coating condition, identifying and sizing any defects using the existing CP rectifiers or an external source. Daily productivity can be as much as 5km per day with good access to right of way.



CLOSE INTERVAL POTENTIAL SURVEY

CIPS is carried out to assess the effectiveness of a cathodic protection system of a buried pipeline. Unlike using CP test posts which only measure potentials locally, CIPS uses a trailing wire attached to the pipeline to allow the entire length of pipe to be one-meter intervals surveyed, ensuring sufficient protection to prevent corrosion. CIPS and DCVG are often carried out simultaneously to monitor both coating and the CP system effectiveness.





PIPING INTEGRITY

Bounded with a number of technical limitations and practical difficulties, the establishment of a successful piping integrity program is undeniably a challenging exercise. The on-plot piping is by nature numerous installations that are unready accessible besides, it involves a diversity of degradation mechanism, some of which are difficult to locate others, are tricky to be detected, that's why piping integrity in the absence of effective programs is being considered a Huge Unknown.

Presently, the run to fail concept is no longer an acceptable thought to operating company's management, and that's why the industry is continuously developing techniques, methodologies and solutions for confronting the interconnecting piping challenging integrity issue.

PIPING INTEGRITY SURVEY (THE SOLUTION)

The main objective of the piping integrity survey is to establish piping data base and inspection history, classification of the piping system into corrosion loops and corrosion circuits based on existing P&ID and line lists, creation of piping AUTOCAD drawings, establishment of piping Thickness Measurement Locations (TML), conducting screening and follow up inspection program the purpose of which is to reveal the extent of internal and external corrosion or any other detrimental internal or external damages, in addition to assessment of the inspection findings, migration of the inspection results and drawings into the computerized data management and results assessment program in order to set and manage the future inspection plan.





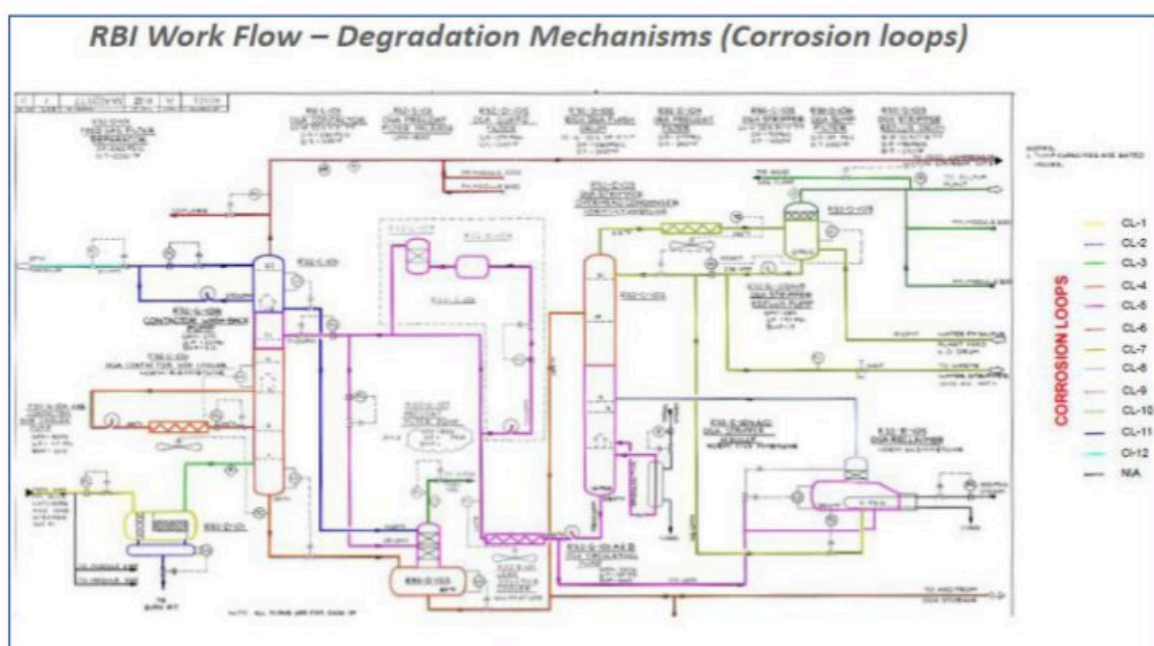
CORROSION LOOP CLASSIFICATION

It is not anticipated that all piping systems will be subject to frequent inspection of the same interval and extent of measuring locations, as this would be both unnecessary and uneconomical. Instead, classification of the piping system into corrosion circuits is one of the outmost aspects within the scope of the piping integrity survey project; the loop selection will characterize the possible degradation mechanism, the potential of damage prone locations as well as the methodology and the extent of the selected screening and follow-up NDT technique and finally the inspection grade and defining the inspection frequency and interval.

PIPING CIRCUIT RISK RANKING

The aim of the criticality assessment is to produce a pipe work inspection strategy based on a technical and critical review of each line and or corrosion circuit. The following three elements connected to pipe work criticality ranking are taken as examples into consideration during the assessment:

- Hazard Potential
- Operational impact (total, partial shutdown or no effect as a result of line leak or failure)
- Corrosion/erosion





DEFINING THICKNESS MEASUREMENT LOCATIONS (TML)

The TML numbers, locations as well as the NDT type and extension at each location shall be based on the factors affecting the density of TML at each corrosion loop e.g.:

- Criticality level of the corrosion loop resulted from the criticality assessment.
- Number of locations susceptible to corrosion/erosion.
- The calculated corrosion rate either from the corrosion rate calculation software or as calculated according to previous inspection results.
- Potential for accelerated or localized corrosion such as dead legs.
- Piping close to vessels and other process equipment

The TML selection and the NDT extent will be progressively modified and fine-tuned according to the inspection results

10.3.3B Criticality Ranking Matrix

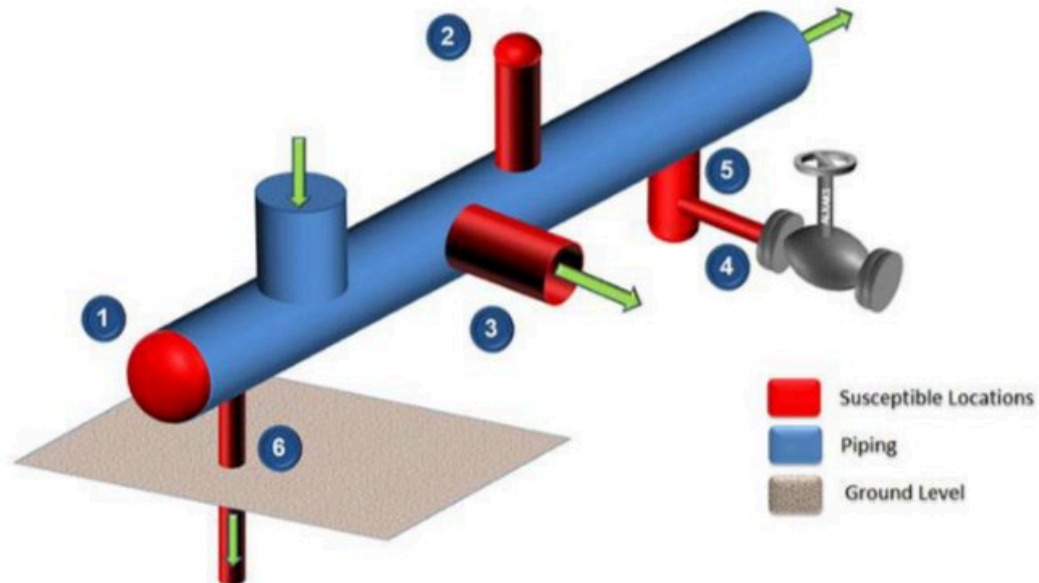
Probability of Failure		2	3	4	5	6	7	8
Consequence of Failure	4	8	12	16	20	24	28	32
	8	16	24	32	40	48	56	64
	12	24	36	48	60	72	84	96
	16	32	48	64	80	96	112	128
	20	40	60	80	100	120	140	160
	24	48	72	96	120	144	168	192
	28	56	84	112	140	168	196	224

	<u>Low</u>	>8, <=56
	<u>Med</u>	>56, <=100
	<u>High</u>	>100, <=140
	<u>V High</u>	>140

PIPING CORROSION CIRCUITING FRAMEWORK

The piping corrosion circuit and the TML establishment framework shall comprise the following activities and steps:

- Document review
- Establishment of the piping systems
- Defining the possible degradation mechanisms
- Assigning corrosion loop based on the degradation mechanisms & the likelihood of failure
- Calculation of the failure progression (corrosion rate)
- Setting the consequence of failures and the risk ranking
- Set the strategies for TML selection and establishment



(1) Stub End	(2) Vertical-Up Deadleg	(3) Horizontal Deadleg	(4) Small bore connections	(5) Vertical downDeadleg	(6) Soil to Air Interface
Water Accumulation	Condensation	Condensation	Water Accumulation	Water Accumulation	Accelerated External corrosion
Fluid Impingement	Flow turbulence	Wave flow	Flow Turbulence	Fluid Impingement	
Bottom Deposits	Gas Accumulation	Bottom Deposits	Bottom Deposits	Bottom Deposits	
		Flow Impingement	Wrong Metallurgy		

DEAD LEG CORROSION MANAGEMENT GUIDELINES

INTRODUCTION

Dead leg corrosion particularly in upstream oil and gas facilities is a major operational threat which needs to be understood and mitigated appropriately. Stagnant conditions give rise to the possibility of multiple corrosion mechanisms at work and such the degradation found, can be aggressive and swift.

The large number of dead legs in the majority of operating asset's means a pragmatic and risk-based approach should be followed to manage this threat effectively and minimize inspection, maintenance and repair costs.

DEFINITION

A dead leg is a section of pipe work or vessel which contains hydrocarbon fluids and / or water under stagnant conditions (either permanently or intermittently), or, where there is no measurable flow. More precisely, a dead leg is any segment of piping extending below the horizontal plane of the pipe which can become a trap for water, sediment or other corrosive materials. Furthermore, a broad definition of a dead leg includes dead ends, which refer to piping that does not extend below the horizontal plane of the pipe yet contains stagnant fluids. Dead legs can be divided into three main categories



HEAT EXCHANGERS AND BOILERS TUBING

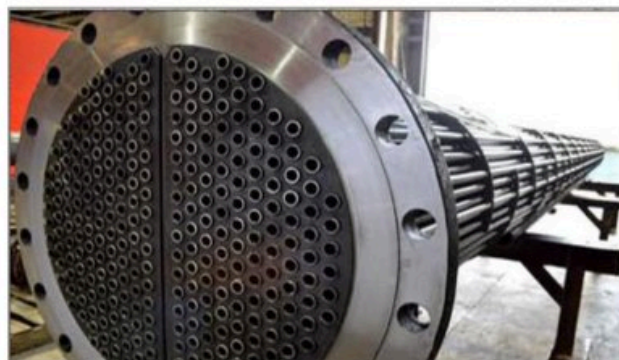
Heat exchangers (HE) and boilers play a primary role in chemical, oil and gas processing plants. In addition to production loss, tube bundle failures normally have an adverse impact on plant and process safety. Tube bundle integrity assessment is not an easy task, at the fore of these limitations is the money and time-consuming inspection cost. Accessibility, cleaning and the associated production down time are other examples of HE integrity assessment limitations.



Inspecta deploys the Olympus Ms5800, a field portable inspection system comprising multiple NDT techniques including Eddy Current Testing (ECT), Magnetic Flux Leakage (MFL), Remote Field Eddy Current Testing (RFT), and Ultrasonic Internal Rotary Inspection System (IRIS) that run on one hardware platform.



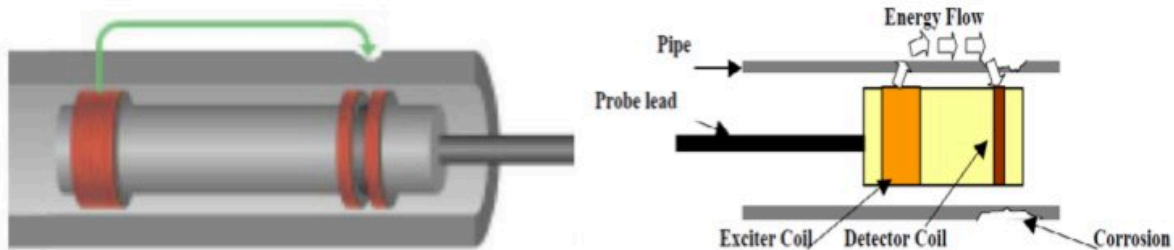
This system will allow for achieving a cost-effective tube bundle inspection through a combination of fast screening techniques (MFL, EC) and a thorough follow up inspection (IRIS) for tubes showing significant Indications.





REMOTE FIELD EDDY CURRENT

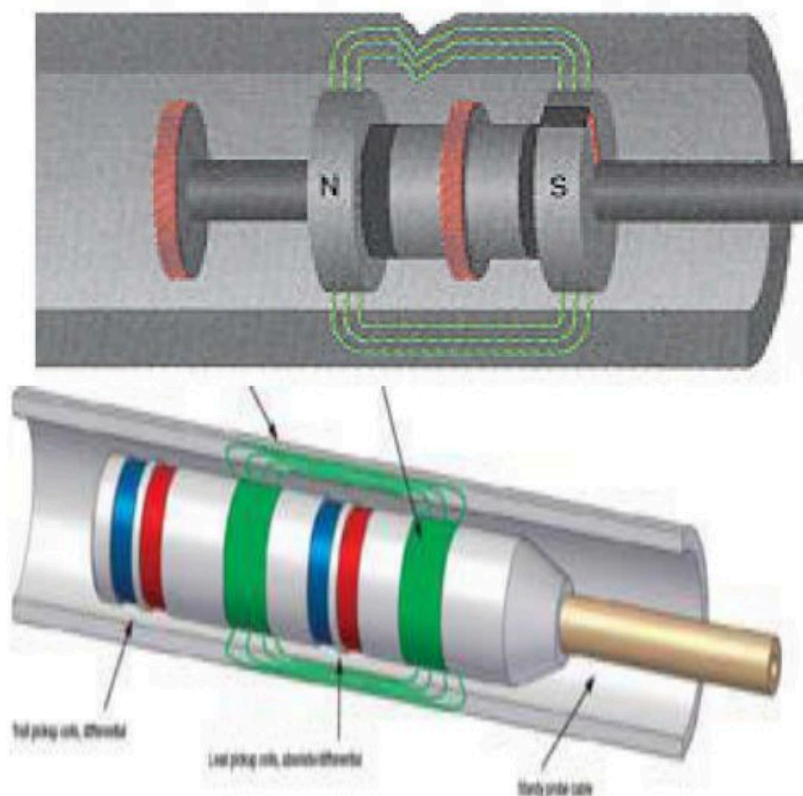
Remote Field Eddy Current (RFT) Inspection is an electromagnetic technique adapted to the inspection of small-bore ferromagnetic tubes such as carbon steel.



The field emitted by the exciter coil passes through the tube wall, propagates axially, and then transits back through the wall to arrive at the detector coil. Where the tube grows thin, there is effectively less shielding. Hence the field arrives with less time delay (greater phase) and less attenuation (greater amplitude).

MAGNETIC FLUX LEAKAGE

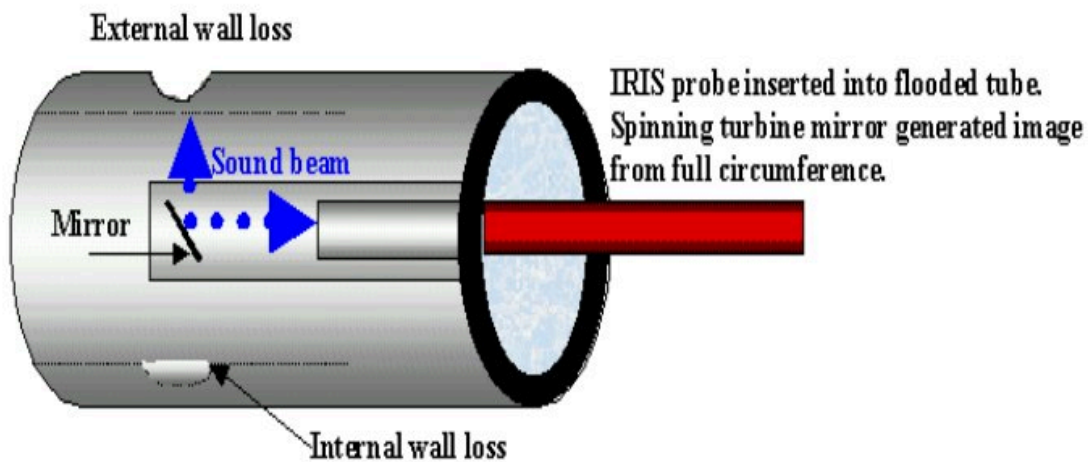
The Magnetic Flux Leakage (MFL) technique is a magnetic technique adapted to the inspection of small-bore ferromagnetic heat exchanger tubes such as carbon steel. The coil type sensor picks up the rate of change of flux while the Hall type picks up absolute flux. The coil detects small defects that cause perturbations in the flux (see Fig 5). The rate of change of flux induces an output voltage (Faraday's Law) that is read by the MFL instrument. The Hall element sensor is used to detect gradual wall loss.



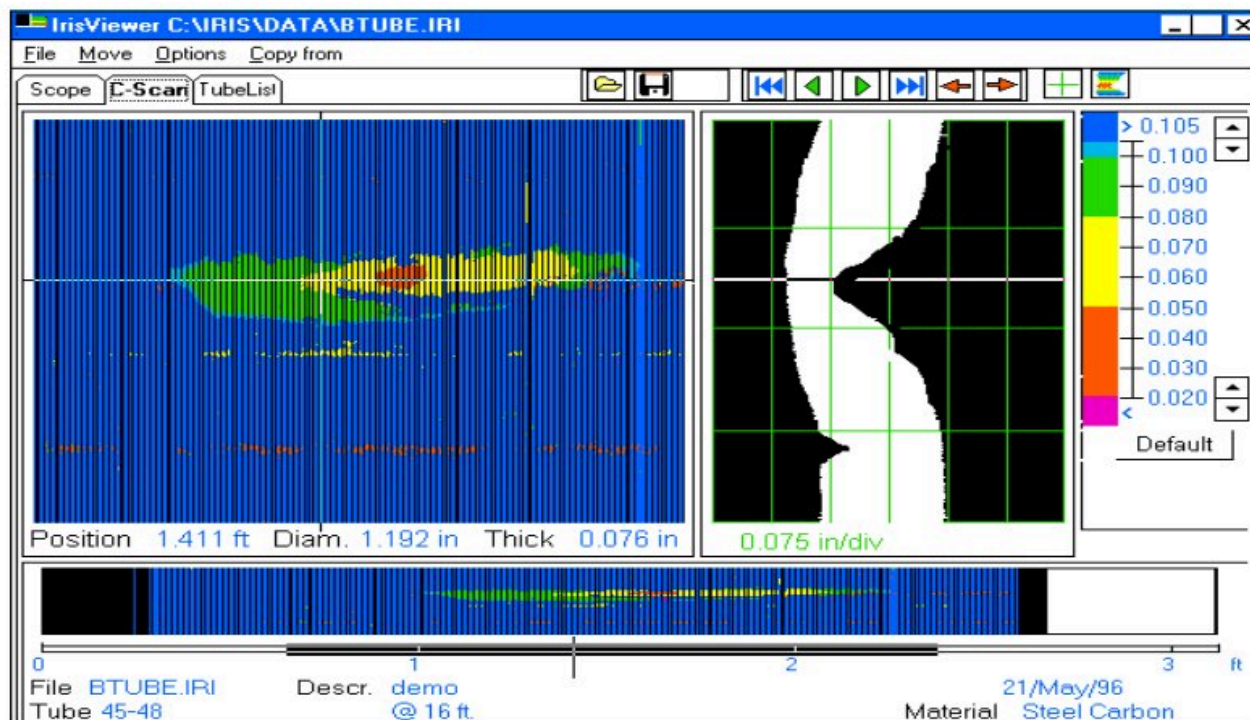


INTERNAL ROTARY INSPECTION SYSTEM

Ultrasonic Internal Rotary Inspection System (IRIS) is based on the principle of measuring thickness using time of flight of ultrasonic waves. The IRIS probe consists of an ultrasonic transducer incident on a rotating mirror.



The method is very accurate for thickness measurement as well as detecting ID and OD pits. IRIS will, however, miss cracks. The IRIS display includes the cross-section of the tube and a C-scan of the tube.





STORAGE TANKS INTEGRITY

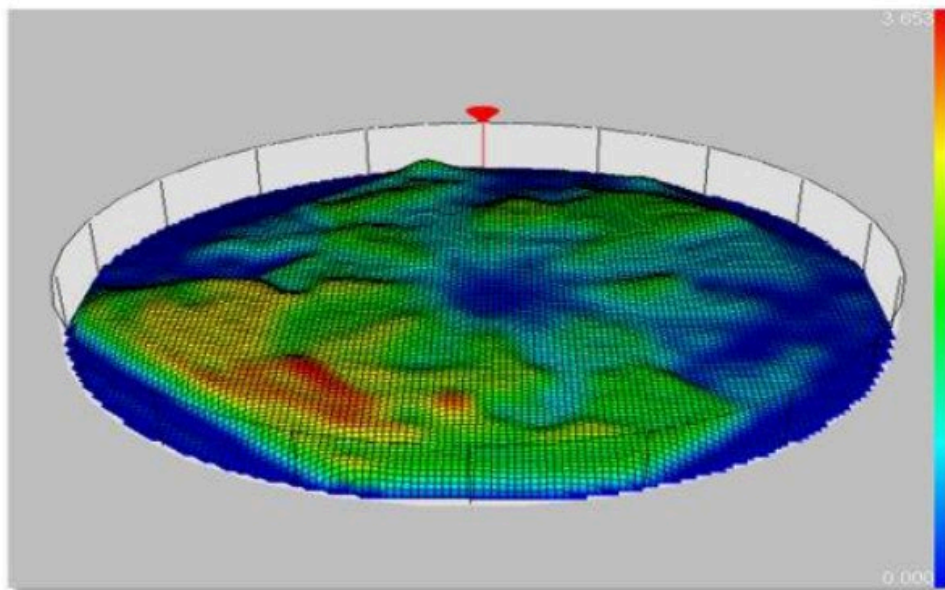
Storage Tanks normally defies as large structures, despite their simple design, their operations involve very high potential risks on operation, personnel as well as the on the environment thus, their safe operation entail carefully planned integrity programs that ensure detrimental defects early detection, timely corrective actions as well as cost effectiveness.





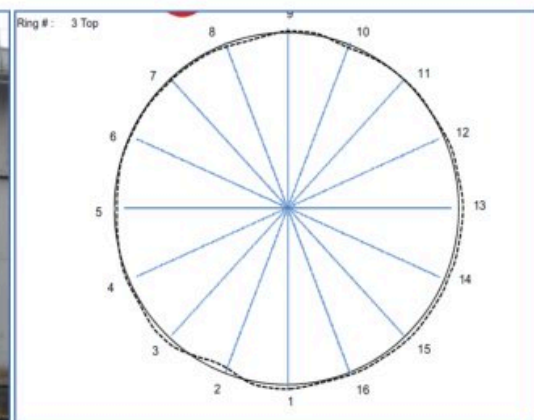
TANK SLUDGE MEASUREMENTS

Acoustic Sludge Profiler accurately measures sludge and sediment volume in Above Ground Storage Tanks. This information is essential for operators to be aware of their reduced capacity and for planning a cleaning or inspection. In addition, the technique generates 2D and 3D sludge maps with the ability to measure sludge height using a cross-section view.



TANK DIMENSIONAL SURVEY

Tank shell dimensional survey is very important to define Geometry Discontinuity, review it against reference STD tolerance in order to ensure they are not adversely affecting tank structure stability.



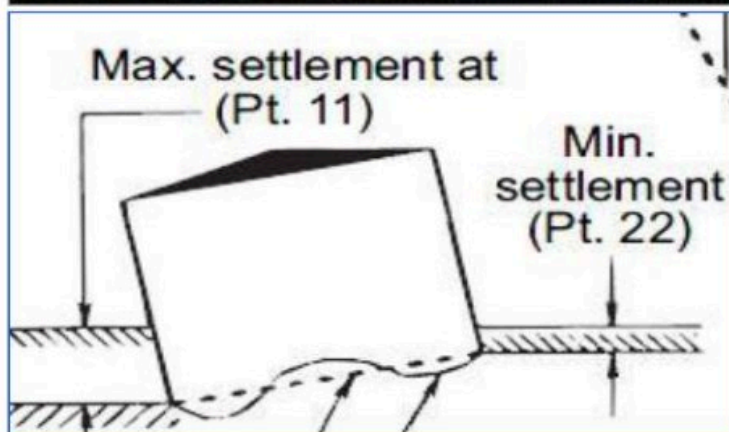


TANK SETTLEMENT

Tank settlement is the most insidious integrity threats for storage tanks that can affect tank integrity very adversely resulting in tank failure.



In addition to conventional optical levels, LASER scanning can accurately reveal tank settlement and thus allow comparison of settlement thresholds tolerated by the specialized standards e.g. API 510



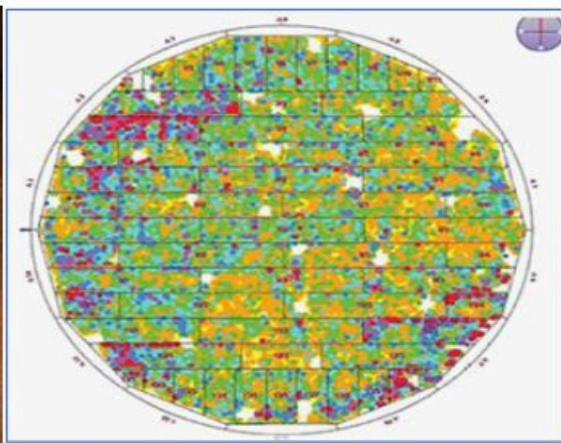


TANK FLOOR MAPPING (MFL)

Tank floor mapping is outmost part of storage tanks off-stream inspection, more than 90% OF the tank floor plates can be scanned using Magnetic Flux Leakage MFL scanner that locates the corrosion and sizes it is using the flux leakage signals.



Floor areas not covered by the auto scanner will be covered with a manual scanner. Unique to the Floor map system is the capability of automatically producing a CAD drawing of the tank floor layout including color code and C scan presentation.





TANK FLOOR MAPPING (EC)

Storage Tanks normally safe guarded against top side corrosion by the means of lining, some of these are up to 6 mm in thickness, MFL testing is no longer a solution and tank floor mapping can be conducted using Electro Magnetic Techniques that can go beyond MFL does.

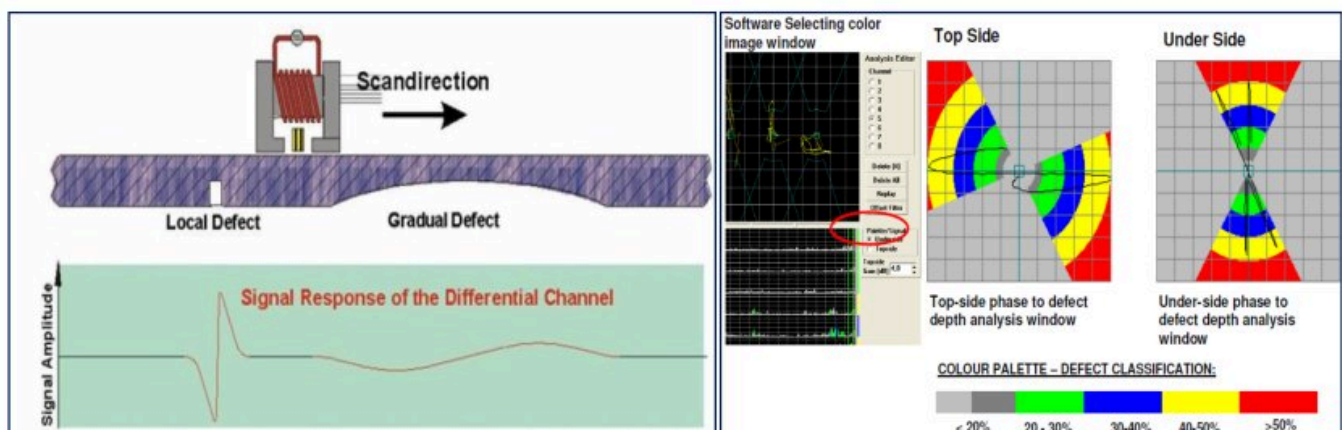


BENEFITS

Non-Destructive: The method evaluates the tank floor without affecting the structure or requiring the tank to be emptied (though access inside the tank is needed).

Speed and Efficiency: MFL scanners can cover large areas of the tank floor quickly, which is vital for meeting maintenance schedules in industries like petrochemicals.

Comprehensive Data: The resulting maps provide clear, actionable data for developing reliable maintenance plans.





ROPE ACCESS INSPECTION

Inspecta International's rope access inspection and support services are becoming increasingly called for, as clients take advantage of the time and cost savings associated with this approach as compared to traditional scaffolding. The majority of the techniques detailed in this booklet can be carried out using a qualified IRATA rope access crew. Benefits include:

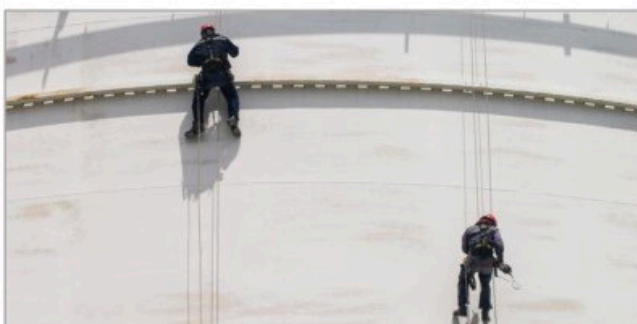
- Fast and simple set up, offering flexibility and immediate access where required.
- Single point of contact for both inspection and access arrangements.
- Adaptable to both onshore and offshore facilities.
- No need for advanced scheduling of scaffold resources.
- Inspection not effected by scaffolding delays.



Core Inspection Methods

Technicians utilize various **Non-Destructive Testing (NDT)** techniques to evaluate assets without causing any damage:

- **Visual Inspection (VT):** Detailed close-up checks for cracks, corrosion, or deformation.
- **Ultrasonic Testing (UT):** Measuring material thickness and detecting internal flaws.
- **Magnetic Particle (MT) & Liquid Penetrant (PT):** Identifying surface and near-surface defects.
- **Eddy Current (ET) & ACFM:** Specialized electrical testing for detecting cracks through coatings or in conductive materials.
- **Remote Inspection:** Using drones /cameras to capture HD quality data from inaccessible spots.



We are a UK and UAE-based Asset Integrity business group with a strong international footprint across more than ten countries. Our global network brings together industry-leading professionals and specialized expertise, allowing us to deliver high-quality, integrated services worldwide. Through seamless collaboration between our regional offices and global experts, we ensure efficiency, consistency, and excellence in every project. Committed to operational integrity and technical excellence, we are a trusted partner in Asset Integrity Management.

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