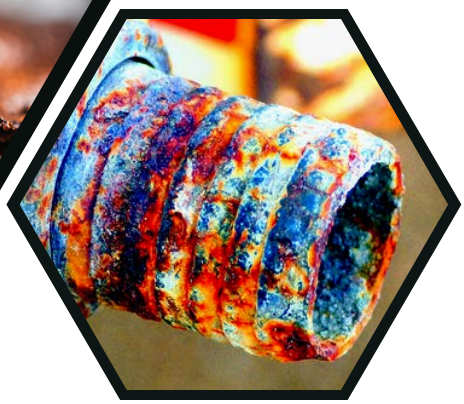
SUSTAINABLE COATINGS
CONFERENCE & EXHIBITION

A Special Edition by ENERGO Steel Journal Pakistan



Event Co-Organized By

SKEN Business Management Services

AMPP CHAPTER PAKISTAN

Powered By

Castolin Eutectic
Eutectic Castolin

Branding Partners

Sika

CHEMSERVE

Sustainable Coatings

milwa TRADING COMPANY (PVT.) LTD.

Castolin Eutectic
Eutectic Castolin

Castolin Eutectic offers a range of sustainable coatings, welding technologies, equipment and consumables aimed at increasing efficiencies, reducing cost, enhancing longevity of industrial components and minimizing environmental impact.

Thermal Spray: High Velocity Oxy Fuel, High Velocity Thermal Spray, flame spray, and laser cladding for industrial components to protect from extreme wear in corrosive and erosive environments. These coating can withstand up to 1000 C temperature.

MeCaGuard: A range of high temperature polymer coating with temperature tolerance -196 C to 650 C offers insulation coatings, anti-corrosions coatings and solutions for corrosion under insulation (CUI).

MeCaTec: Environment friendly, free of VOCs (volatile organic compounds), free of halogen ceramic surfacing polymer coatings designed for wear and corrosion protection at elevated temperature.

Welding Technologies: Comprehensive range of welding technologies to address industrial needs including equipment and consumables of MMA, MIG/MAG, TIG, and PTA.

Brazing & Hardfacing: Complete range of equipment and consumables to protect surfaces from extremely harsh environments occurred due to wear, corrosion, erosion, and abrasion.

Pioneering Industrial Sustainability

www.castolin.com

The Event

The Sustainable Coatings 2024 – Conference & Exhibition, co-organized by AMPP Pakistan Chapter and SKEN Business Management Services, and proudly powered by our valued sponsor, Castolin Eutectic, is designed to elevate awareness around corrosion management, coating technologies, and anti-corrosive solutions. The event will feature thought-provoking presentations from experienced industry experts and offer participants the opportunity to engage in exclusive networking, corporate matchmaking, and valuable knowledge sharing.
Key takeaways for participants include:

- Certificate of Participation by AMPP Pakistan Chapter
- Cutting-edge insights into advanced coating and corrosion prevention technologies
- Opportunities for business collaborations with top industry players
- Access to industry leaders and technical experts in corrosion management
- Practical strategies for improving asset longevity and sustainability

We are grateful to the supporting organizations, sponsors, and participants for their valuable contributions to this event.

Event Committee

Mr Liaquat Raza
Member At Large
AMPP Pakistan

Mr Masood Asghar
Patron In Chief
SKEN BMS

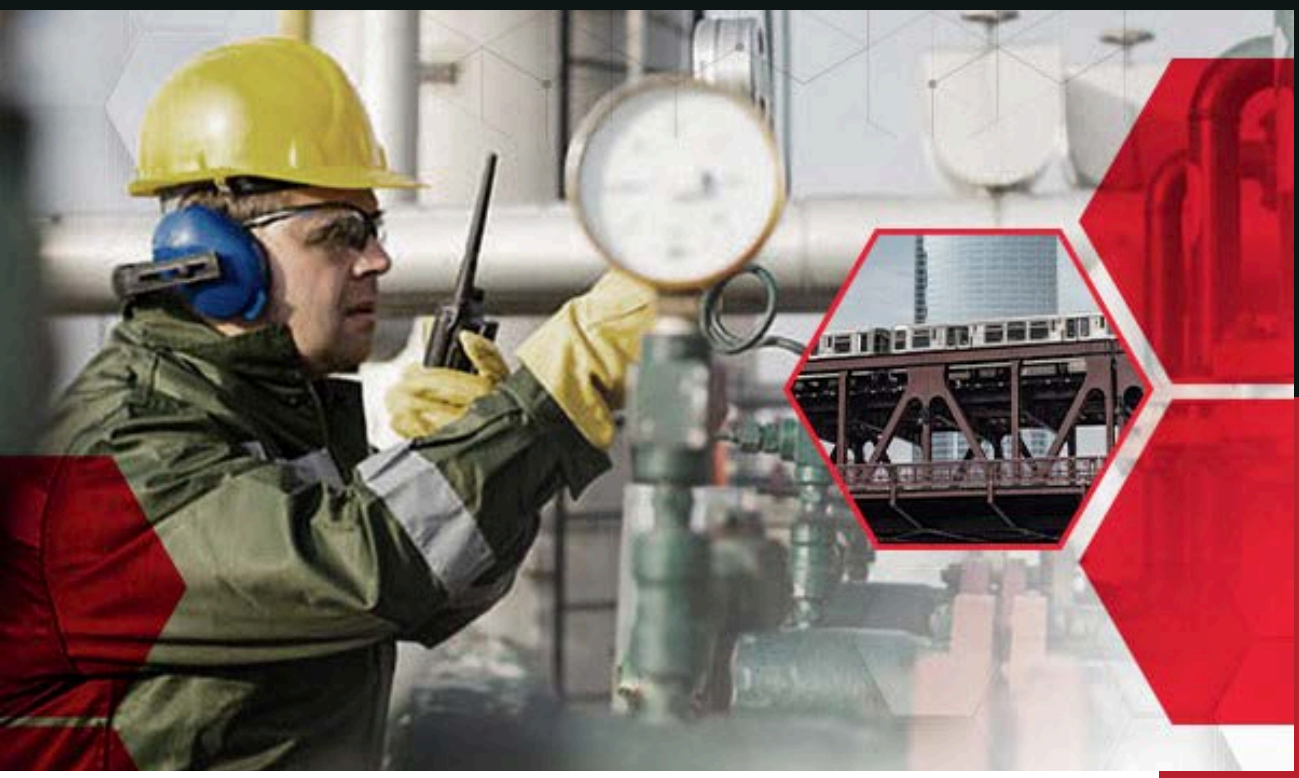
Engr Shafqat Ali
Delegate
AMPP Pakistan

Mr Ahmad Jawad
Chairman
AMPP Pakistan

Mr Saeed Ansari
Chief Executive
SKEN BMS

Dr Ameeq Farooq
Vice Chair
AMPP Pakistan

Mrs Amina Ahmed
Director Projects
SKEN BMS



About
AMPP Pakistan Chapter

The Associations for Materials Protection and Performance (AMPP) Pakistan is a chapter of AMPP International USA (formally NACE International). AMPP USA has over 40,000 members internationally. AMPP USA has local chapters in various countries like USA. Canada. China. India. Malaysia. Africa and many other countries including Pakistan spread over the globe. AMPP Pakistan Chapter is a part of AMPP West Asia and Africa Area and is locally governed by a Governing Board of Local Officers. The global annual cost of Corrosion is estimated USD 2.5 trillion.

The aim of AMPP /NACE is to equip individuals with skills and knowledge to enable them to protect people. assets and the environment from the adverse effects of corrosion. In addition, they offer various courses to upgrade technical skills, gain awareness in technical advancement, acquire competency certification which are internationally recognized and assists them to secure suitable position in various organizations locally and internationally.

The AMPP /NACE Islamabad Pakistan Section was established by a group of corrosion engineers in 2004 with the basic aim to promote awareness of corrosion by holding technical seminars and sessions conducted by local as well as corrosion engineers/ expert visiting Pakistan. In addition, arrange technical and practical sessions for the undergraduate engineers from different universities and young corrosion engineers who have keen interest, arrange visits to corrosion control centres. During the visit the students are shown various equipment. instrumentation and briefed about their application.

During the COVID AMPP Pakistan Chapter arranged webinars addressed by leading engineers and practicing professionals from international organizations like Accurate Corrosion Control. Inc USA. Aramco Technical Service Department. Italy, University of Wollongong, Australia, Saudi Aramco, UAE, Suncor, Canada, Black Powder Solutions, Canada, China Petroleum Pipeline Engineering, Abu Dhabi, China National Offshore Oil Corp. Lonestar Technical Industrial Services. Abu Dhabi, Cortec, Middle East, Integrity Products & Supplies Inc., Canada, Cosasco- UAE, Seal for Life Industries - Belgium and Bureau Veritas- UAE. These webinars were well attended/ viewed by local corrosion community as well as international participants from Italy, Malaysia, India, UAE, Saudi Arabia, Indonesia etc. From June 2020 to June 2021 more than 20 webinars were conducted. Corrosion experts from all over the world showed keen interest to participate in these webinars as speaker.

AMPP Pakistan organized International Corrosion Conference CorPak' and the main sponsor was M/s Inspectest (Descon Group) at PC Hotel, Karachi in 2018, 2019 and 2022. All the three conferences were attended by over 150 person representing various government, semi-government, oil and gas companies, power plants, fertilizer plants etc. In 2018, Mr. Jeff Didas the President of NACE International personally attended the conference in person.

This is part of our continuous effort to bring the professionals together and share the knowledge in the field of Corrosion Control, Materials and Assets Integrity. This shall provide excellent platform for networking and bring the individuals of vast experience together.

About SKEN Business Management Services

Founded 14 years ago, SKEN Business Management Services a family owned business has established itself as a leading player in the corporate events industry. With a steadfast commitment to excellence, we specialize in organizing a wide array of events, including conferences, exhibitions, seminars, training sessions, congresses, workshops, resource management and corporate matchmaking sessions. Our services are designed to cater to the unique needs of various sectors, with a particular emphasis on engineering, energy, and industrial sectors.

Our Mission:

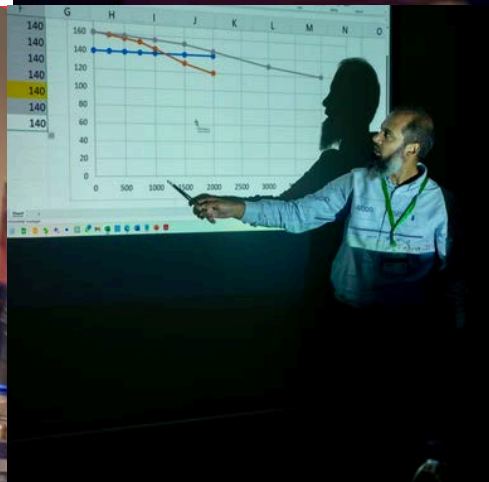
At SKEN Business Management Services, our mission is to provide platforms that drive technological awareness and upgradation for engineers and professionals. We are committed to creating opportunities for cross-functional knowledge sharing, ensuring that our clients are well-equipped to navigate the complexities of their industries.

Our Objective:

Our objective is to empower professionals and organizations by providing them with the tools, knowledge, and connections they need to succeed in an ever-evolving landscape. Through our events and training programs, we aim to promote continuous learning, foster innovation, and drive technological progress across industries.

Our Services:

- Corporate Events Planning, Marketing, Designing & Execution
- Tailored and customized training / learning sessions
- Training Assessment & Resource Management
- Corporate Matchmaking



Why to Choose SKEN BMS

EXPERTISE

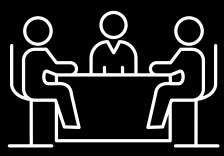
With 14 years of experience in the corporate events industry, we have the expertise and insights needed to deliver successful events that meet the specific needs of our clients.

VALUE YOUR INVESTMENTS

We are dedicated to delivering high-quality events and training programs that exceed expectations and provide real value to our clients.

TAILORED SOLUTIONS

We understand that every client is unique, which is why we offer customized solutions that are designed to achieve your specific objectives.



CONNECT YOU WITH RIGHT PEOPLE

We prioritize creating networking opportunities that enable professionals and organizations to build lasting relationships and explore new business opportunities.

SKEN Business Management Services is your trusted partner in corporate events management and professional development. We are passionate about helping our clients succeed by providing them with the platforms and opportunities they need to thrive in their respective industries. Whether you are looking to organize a large-scale conference, develop a customized training program, or connect with industry leaders, SKEN is here to support you every step of the way.

ASTM Standards

Category	ASTM Standard	Title
Rusting	ASTM D610	Standard Practice for Evaluating Degree of Rusting on Painted or Coated Steel
	ASTM D6132	Standard Test Method for Nondestructive Measurement of Dry Film Thickness Using Ultrasonic Gauges
Blistering	ASTM D714	Standard Test Method for Evaluating Degree of Blistering of Paints
Surface Roughness	ASTM D4417	Standard Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel
	ASTM D7127	Standard Test Method for Surface Roughness Measurements of Coated Steel
Coating thickness Wet/Dry	ASTM D1186	Standard Test Methods for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings on Magnetic Metals
	ASTM D4138	Standard Practice for Measurement of Dry Film Thickness of Protective Coating Systems by Destructive Means
	ASTM D4414	Standard Practice for Measurement of Wet Film Thickness by Notch Gages
Cathodic Disbondment	ASTM G8	Standard Test Methods for Cathodic Disbonding of Pipeline Coatings
	ASTM G95	Standard Test Method for Cathodic Disbondment of Pipeline Coatings
Cathodic Adhesion	ASTM G6	Standard Test Method for Cathodic Protection of Buried or Submerged Steel Structures
Hardness & Gloss	ASTM D523	Standard Test Method for Specular Gloss
	ASTM D3363	Standard Test Method for Film Hardness by Pencil Test
Abrasion Resistance	ASTM D4060	Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser
Impact Resistance	ASTM D2794	Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
Adhesion	ASTM D4541	Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers

Over 12,000 ASTM standards operate globally. Defined and set by ASTM International. These standards improve the lives of millions every day. Combined with the innovative business services, they enhance performance and help everyone have confidence in the things they buy and use.

Coating Defects

Blistering

Film defect detachment

Adhesion Failure

Cathodic Disboundment

Sagging

Wrinkling

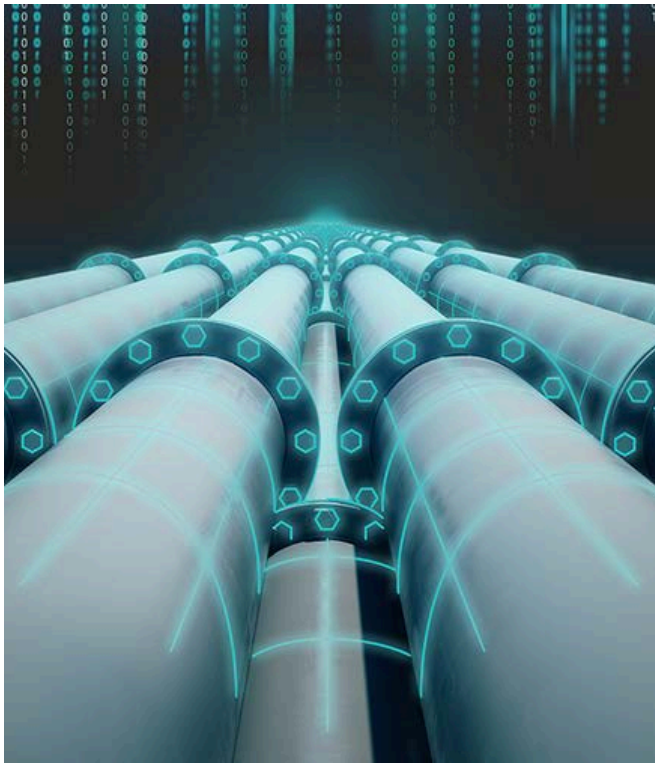
Peeling

Bleeding

APPLICATION OF BIG DATA ANALYTICS TO ENERGY PIPELINE INTEGRITY MANAGEMENT

Muhammad Hussain
University of Wollongong, Australia

Motlaq S. Al-Motairy
Integrity Master Sdn Bhd Malaysia



The transportation of energy and other raw materials from one place to another is being carried through pipelines, which requires huge investment in terms of infrastructure. The processes are being carried to ensure their integrity reliable operations and free from the risk of degradation or deterioration, which could cause expensive downtime, environmental hazards and potential threats to life. To ensure the integrity of pipeline to continue to operate and maintain the required performance criteria, appropriate statutory, predictive, preventative, reactive, and condition monitoring maintenance activities are essential.

An integrity management program consists of three major stages, for instance, defect exposure and identification, growth assessment, and risk management. Such strategies also include capital management, a register of risk issues, long range maintenance strategy, big data management and budget management. This relationship between the competitive strategy and asset-related activities such as maintenance has not been explicitly developed and is usually not known in many organizations.

Although maintenance is a very important component, but Asset Management Plan is more than maintenance strategies. It is noted that in asset management plan, it covers pipeline operational requirements, risk management, technology plan, capital plan, maintenance plan, pipeline analysis and performance analysis.

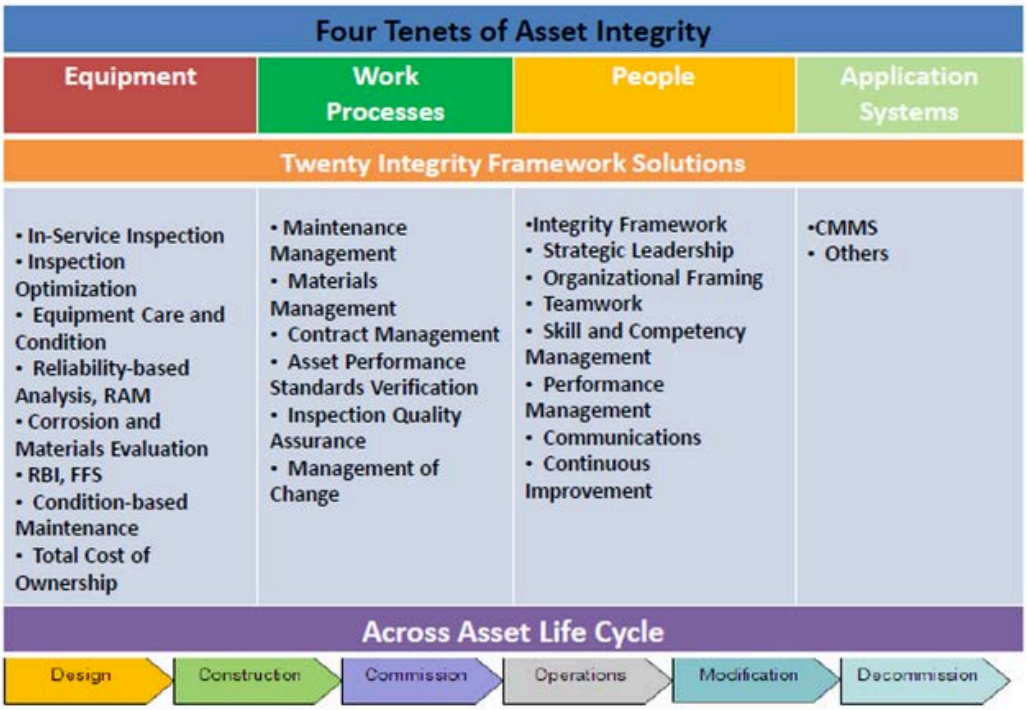


Figure 1

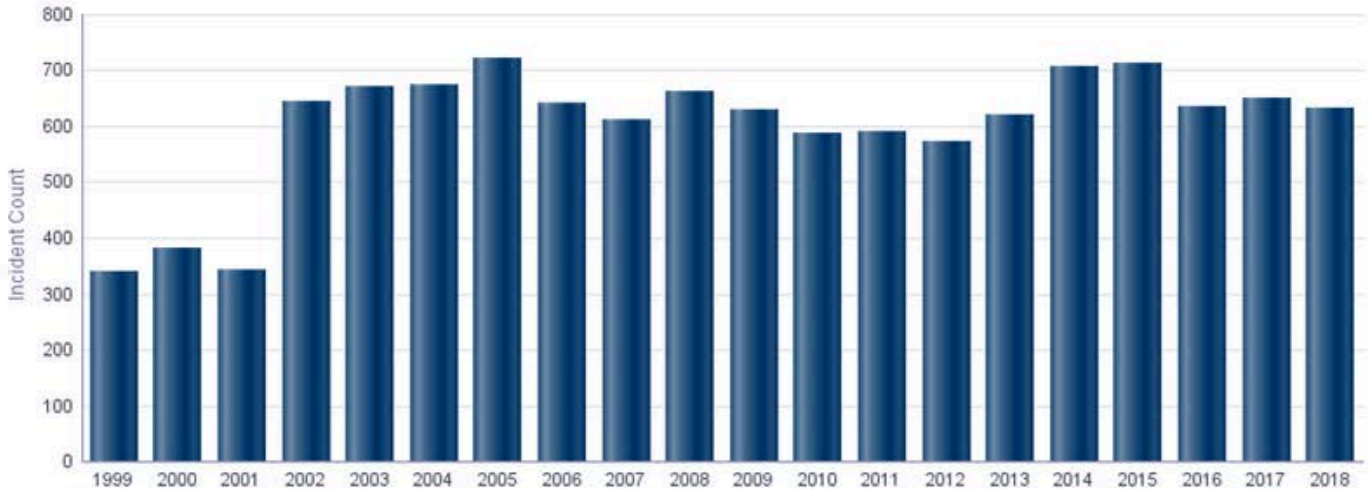
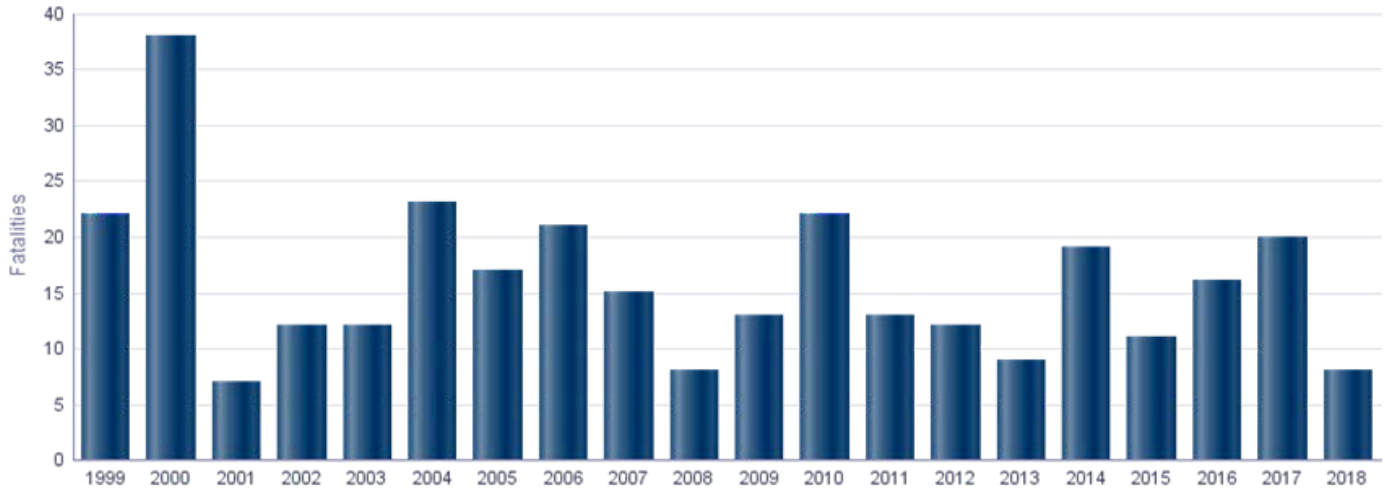


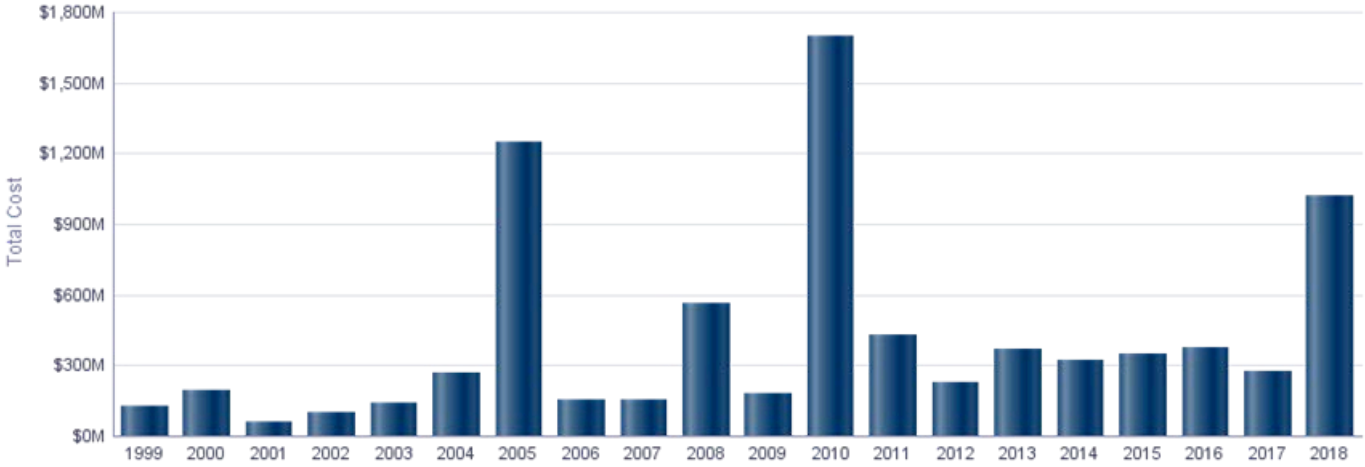
Figure 2 in below shows the history of pipeline of 20 years

Pipelines failures in industry can lead to various consequences, for instance, few of them can pose a significant threat of damage to people, properties, animals and environment in the immediate vicinity of the failure area. Figure 3 shows the fatalities due to pipeline failure.



Few programs and standards like risk management were developed across the world, in account of incidents, where many people were killed due to pipeline accidents. Such accidents also down the company reputation and loss in production, which as asset owner will not accept. It is seen that such accidents happened due to rupture, explosion and leakage of pipeline. The most common energy pipeline threats are corrosion/erosion threats, third party threats, structural threats, natural hazards threats, and incorrect operation threats. To deal with such issues, a thorough research is required to handle such failures, reduce the risk, enhance the integrity of pipelines, manage the asset to increase the life and there should be additional protection to these high consequence areas. The intention of using integrity management activities, such as inspection, monitoring, intervention and repair, are selected and scheduled based on their ability to explicitly measure and manage threats to the pipeline system and ensure that associated risks are managed to be within acceptable limits. Risk based pipeline integrity management considers identification of threats and failure modes, estimation of probabilities of failure, estimation of consequences of failure, estimation of risk level.

From literature, it is noted that a small improvement in asset management and integrity management can bring significant benefit by possibly reducing the original expenses by adopting well-managed planning and targeted design along with reducing life cycle costs via better designing for overall cost and better managing the inspection, maintenance and refurbishment of available infrastructure to extend its economic life. Figure 4 shows the cost incurred due to pipeline failures.



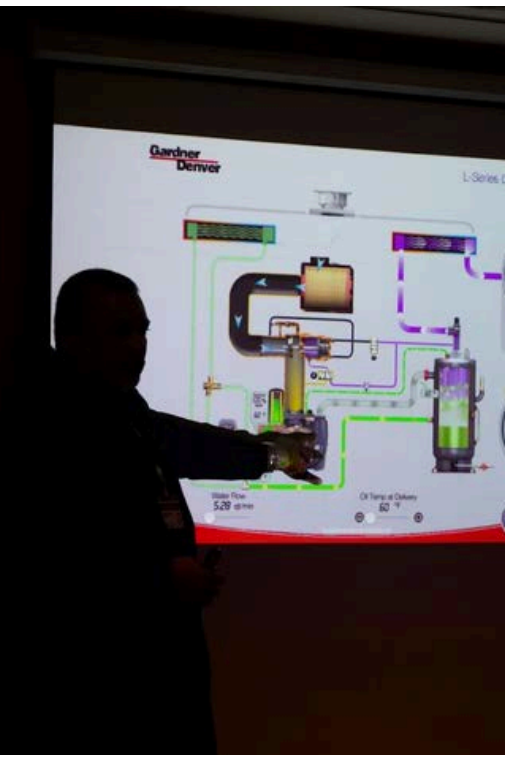
Asset management involves all the activities in asset life cycle but measurement, monitoring, analysis, and evaluation activities during the utilization phase are crucial for decision making. In many organizations, numerous records that hold some information about the remaining life of their assets are available.

Design data, maintenance history, and ongoing inspection records are some of the most relevant information. Having said on pipelines, sophisticated in-line inspection tools promise to greatly improve the available information to the asset owner. Early detection of system failures may ensure the consistency and safety of systems and reduce the risk of forced shutdown. The use of advanced or big data analytics can help uncover patterns not revealed by conventional analytics and so assist in making more effective predictions on asset life. Big Data analytics with the increasing use of numerous types of sensors, mobile devices, tether-free, web-based applications, and other Information and Communication Technologies, industries have procured and stored reams of data for exploiting their underlying knowledge.

The concept of big data defined as increasing volume, variety and velocity of data is quite familiar to all industries. The processes and decisions related to pipeline integrity, risk assessment and management, development and production of new technology generate large amounts of data. The data volume grows daily especially for ageing plants that operates since many years. With new data acquisition, processing and storage solutions and the development of new devices to track a wider array of, machinery and personnel performance, cost reduction, faster, accurate, better decision making and new products and services. To date, 3D data has been the industry's most impactful scientific breakthrough. This data vastly improves the picture of the pipeline subsurface and removes the need to drill a multi-million-dollar destructive process, with very little data, to "look at" what is in the pipelines. Therefore, big data analytics has received the most research attention trying to better tune data acquisition and processing, in an effort to get a clearer outcome.

These forms of analytics are the future of pipeline condition assessment and monitoring and will provide stakeholders with a better overview of operations, and more control and flexibility for managing their assets. Detecting anomalies and accurately predicting future behavior during operations will enable more effective decision making that can help best focus operational spend on risk reduction.
By combination of Big Data and advanced analytics in Exploration and Development activities, managers and experts can perform strategic and operational decision-making.

There are many Nondestructive testing methods being widely used for evaluating the integrity of pipelines. By the hybridization of many techniques we can increase the efficiency and advantages and reduce uncertainties of a system. Magnetic flux leakage and the Long-range ultrasonic testing (LRUT), both are extensively used NDT approaches in pipeline inspection. Combination of these two analytics tools with Supervisory control and data acquisition (SCADA) can produce robust results. The proposed research aims to develop a combined effect of Magnetic flux leakage and the Long-range ultrasonic testing (LRUT) tool with Supervisory control and data acquisition (SCADA).



AMPP CHAPTER PAKISTAN

SKEN
Business Management Services

To Contact Us

0330 2319539
03349706923

pakistan@amppchapter.org
info@skenbms.com