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INDUSTRIES & ENVIRONMENT PROFILE MIDDLE EAST

SAFER GREENER SMARTER SGS



# We are SGS

We are recognized as the global benchmark for quality and integrity. Our 96,000 employees operate a network of 2,600 offices and laboratories, working together to enable a better, safer and more interconnected world. Wherever you are, whatever your industry, our experts worldwide provide specialized solutions to make your business faster, simpler and more efficient.

### **OUR PURPOSE**

Our purpose is to enable a better, safer and more interconnected world How do we do this?

We enable a better world by helping businesses everywhere to work efficiently, to deliver with quality, and to trade with integrity and trust.

We enable a safer world by ensuring that your car is safe to drive, that the environment you work in is secure and clean, and that the food you eat is safe.

We enable a more interconnected world by, for example, helping new technology to reach consumers quickly and affordably, by ensuring the security of IT systems and data, and by using Al and the Internet of Things to help develop smart cities.

### OUR VALUE TO SOCIETY

Through our integrated leadership approach, we strive to become an increasingly sustainable company, maximizing the positive impact we have. We add more than just financial value to society. All our stakeholders (employees and suppliers, investors, customers, governments and industries, consumers, and communities and society) are the ultimate beneficiaries. In order to measure our success, we are developing an innovative impact valuation model to quantify our value to society.

### **OUR HISTORY**

Established in 1878, SGS transformed grain trading in Europe by offering innovative agricultural inspection services.

From those early beginnings, we steadily grew in size and scope as our agricultural inspection services spread around the world.

During the mid-20th century, we began to diversify and started offering inspection, testing and verification services across a variety of sectors, including industrial, minerals, oil, gas, and chemicals.

In 1981, SGS was listed on the Swiss Stock Exchange and forged an unrivaled reputation as the industry leader in finding solutions to the complex challenges faced every day by organizations.

Today, we provide worldwide, independent services that make a difference to people's lives. Our training and consultancy services complement our core business of testing, inspection and certification which are delivered across all industries.

Through our unique global network, we deliver independent results tailored to the precise needs of each industry or sector. Our customers trust in our expertise, experience and resources to support them in achieving outstanding performance in everything they do.

Our continued focus on innovative ways to deliver business benefits enables us to help our customers improve quality, safety, efficiency, productivity and speed to market while reducing risk and building trust in sustainable operations.



# The Benefits We Deliver

### QUALITY

Our customers rely on our independent third-party inspection, testing and auditing solutions to ensure products, services and processes comply with the latest quality standards. Our global network of state-of-the-art facilities provides information to certify and verify quality worldwide.

### **PRODUCTIVITY**

Our training and outsourcing solutions ensure productivity keeps pace with developments in our customers' organizations. In the short term, we offer the knowledge of our world-class productivity experts In the long term, we deliver focused training to develop specialist skills in our customers' workforce.

### **TRUST**

Our global reputation for independence and integrity enables us to build trust wherever needed. We provide transparent and unbiased inspection, testing, verification and certification solutions so our customers can give assurance in their products, processes, systems and services.

### **SAFETY**

We help organizations develop effective health and safety systems to protect employees, generate consumer confidence and enhance trust in business operations. We support our customers in adhering to best practices and complying with local, national and international regulations.

### **EFFICIENCY**

Our tailored business solutions help our customers implement processes and systems that make business operations faster, simpler and more efficient. We deliver unrivaled efficiency results from our local experts, who draw on the global experience of the entire SGS network.

### SUSTAINABILITY

We help our customers take ownership of building a more responsible and sustainable future. We encourage environmental responsibility and reduce the risk of corruption in our customers' projects. Our services assist in developing sustainable facilities and production, as well as better working and social environments.

### **REDUCED RISK**

We provide our customers with independent and impartial services that enable them to identify, manage and reduce risk. Our experts deliver risk management solutions, drawing on our testing and inspection capabilities, to verify that risk prevention measures are in place. We assist with the compliance of international risk management standards across a wide range of industries.

### **SPEED TO MARKET**

Compliance with the requirements of target markets is key to increasing speed to market. Our consultancy, testing and certification services help our customers overcome the complex challenges of understanding and meeting market demands anywhere in the world, whatever the industry or sector.



Our Industries & Environment services provide the world's most comprehensive range of integrated inspection, testing, certification and advisory services, powered by the latest technology and digital tools. Our global network of experts helps clients to navigate a wide range of new standards, regulations and corporate responsibilities.

Our innovative solutions enable organizations to ensure the integrity, safety and reliability of activities, equipment and operations, while helping them take more sustainable approaches to infrastructure, transportation and business operations. This helps our customers to protect workers and the environment, generate customer confidence, enhance brand reputation, manage risk and increase business efficiency.



### **KEY MARKET SECTORS**

Mining, Energy & Power
Manufacturing & Processing
Building & Infrastructure
Rail, Road & Shipping Transport

### **SERVICE OVERVIEW**

- Project Services
- Technical Staffing Services
- Supply chain Services
- Plant Inservice Inspections & Shutdown Services
- NDT Services
- Asset Integrity Management Services
- Pipeline Integrity Management & Cathodic Protection Services
- Electrical Services
- Oil Condition Monitoring Services
- Civil Services
- Construction Material Lab Testing
- Marine Filed Services
- Oil and Gas Upstream Services
- Condition Based Monitoring Services
- Plant and Terminal Operations
- Measurement and Calibration
- Sample Management
- Fuel Integrity Programs
- Oil and Gas Fuel Retail Services
- Cargo Treatment Services
- Industrial Valves Testing, Refurbishment & Certification
- Government Mandates
- Training Services
- Environment Services
- Environmental Audit & Compliance
- Environmental Field & Monitoring
- Health and Safety Services
- Environmental Lab Testing



**PROJECT SERVICES** 



TECHNICAL STAFFING SERVICES



**SUPPLY CHAIN SERVICES** 



SHUTDOWN SERVICES



PRESSURIZED EQUIPMENT INSPECTION



STORGE TANK INSPECTION



PIPING INSPECTION



LIFTING EQUIPMENT & ACCESSORIES INSPECTION



**VEHICLE INSPECTION** 



RACKING SURVEY



NDT SERVICES



ASSET INTEGRITY MANAGEMENT SERVICES



**PIMCP SERVICES** 



ELECTRICAL SERVICES



**CIVIL SERVICES** 



CONSTRUCTION MATERIAL LAB TESTING



MARINE FILED SERVICES



OIL AND GAS UPSTREAM SERVICES



OIL CONDITION MONITORING



PLANT AND TERMINAL OPERATIONS



MEASUREMENT AND CALIBRATION



SAMPLE MANAGEMENT



UEL INTEGRITY PROGRAMS



OIL AND GAS FUEL RETAIL SERVICES



CARGO TREATMENT SERVICES



INDUSTRIAL VALVES TESTING, REFURBISHMENT & CERTIFICATION





TRAINING SERVICES



ENVIRONMENTAL AUDIT & COMPLIANCE



ENVIRONMENTAL FIELD & MONITORING



**HEALTH AND SAFETY SERVICES** 



**ENVIRONMENTAL LAB TESTING** 



### **PROJECT SERVICES**

# Project Management & Construction Support

- · Owner's engineer
- Project and resource management planning
- Cost and schedule supervision
- QHSE management

### Site Acceptance Tests

- Performance tests procedure approval
- Commissioning supervision
- As-built review and reporting
- Reception and certification of construction works

### Operations

- Performance review and verification
- Consultancy on operation and maintenance planning

### Statutory Services And Special Projects

- SGS offers both statutory and voluntary inspections to help you meet all quality and performance requirements – whether they are statutory, voluntary or customer based.
- SGS offer these projects to ensure quality and integrity of installations, equipment or materials must meet a number of legal and voluntary requirements.

### Special Projects services includes

- Post FEED support
- Support during Construction
- Assessment of applicable legal / statutory requirements on E&P companies
- Technical audits for gaps assessment of:
  - Project Completion support
  - · Assets' acquisition Support
  - Consultant Service

### **TECHNICAL STAFFING SERVICES**

TSS provides a full range of customer focused recruitment solutions, covering the full range of project life cycles including:

- Permanent placement (full time employees)
- Contractors (local and expatriate)
- Payroll and tax compliant services
- Work permits and visas
- Complete in-country logistics support

SGS's global network of TSS offices provides access to over 250,000 multinational candidates

## ADVANCED, TAILORED SOFTWARE AND SYSTEMS

### Industry focus:

 Energy: oil, gas, petrochemical and power

- Marine/shipbuilding
- Construction

### Disciplines include:

 Exploration geology, inspection, project management, laboratory technology, design, construction and commissioning engineering, HSE and project controls

### **SUPPLY CHAIN SERVICES**

Our solutions ensure end to end protected Supply Chain to meet your specific needs and are executed by our trusted, global network of experts, with decades of experience. Supply Chain Services will protect interest of buyers and sellers especially when buying and selling overseas and help to mitigate risks and increase reliability.

# Stage Inspection Services (During Manufacturing)

- Material Physical Inspection
- MTC/Document Review
- Inspection as per ITP
- Final Hydrotesting Witness
- Final Inspection

### Vendor Assessment

- Consultancy for identifying suitable vendor
- Comparison among vendors
- · Comparison among standards provided
- Technical Audit of Vendor
- Financial Audit of Vendor

### Pre/Post Shipment Inspection

- Final Inspection
- Document Review
- FAT Witness
- Packing/Marking Check
- Post-delivery inspection

### **Expediting Services**

- Reviewing Project Progress
- Identifying bottlenecks that may cause hinderance in project
- Stage wise Inspections as per ITP
- Final Inspection of the product
- Loading Supervision

### Loading/Unloading Supervision

- Quantity Verification as per packing list
- Packing and Marking Check
- · Witness of container loading
- Sealing of Container
- Unloading supervision at port/ customer warehouse

# Technical Due Diligence for Used Equipment

- Initial Survey
- Visual Inspection
- Review of Maintenance Data and Records
- Remaining Life Assessment

### Product Testing and Certification

- Pressure Equipment Certifications (ASME, PED, TPED)
- CE Certification
- Lift and Machinery Directive
- Mechanical, Electrical and Civil Product Certification
- Type Testing Witness

### Claim Case/Technical Dispute Survey

- Preparation of Checklist
- Visual Inspection
- Claim Verification

### Solar Equipment Inspections

- Complete inspections along with lab testing and type testing of solar related items.
- Inspection as per SRO 604 for customs clearance

# PLANT IN-SERVICE INSPECTIONS AND SHUTDOWN SERVICES

### Storage Tank Inspection Services

- Above Ground Storage Tank
- Inspection Services
- External Inspection
- Internal Inspection
- On Stream Inspection
- Tank Bottom MFL Testing
- Other NDT Method
- Under Ground Storage Tank
- Storage tank cleaning services

### Pressure Vessels Inspection

- Pressure Vessel Boilers Heat Exchangers - Column – Reactors
- External Inspection
- Internal Inspection
- On Stream Inspection
- Other NDT Method
- Pressurized Road Tanker Inspection
- LPG, Oxygen & Hazardous Chemical Road Tanker Inspection as per the requirement of DOT, ADR and local regulatory requirement

# Lifting Equipment Inspections - SGS capabilities

- Member of Lifting Equipment Engineer Association UK (LEEA)
- Certified and Authorized Lifting Equipment inspectors from LEEA UK (Lifting Equipment Engineer Association)
- NDE Inspectors Level-II (ASNT-TC-1A)
- Wire Rope Tester which has the capability to detect internal broken wires of wire rope and slings.
- Up to 80 tons capacity load cell for the accurate load test exercise (Quantity 02), in which one is wireless interface with digital portable display.

# Lifting Equipment And Accessories Inspection

Services covered under Lifting & Storage Equipment

- Lifting Equipment
- Lifting Tackles
- · Elevators Inspection
- Pallet Racks Inspection
- Drilling Inspection Services
- Drill Pipe Inspection
- Bottom Hole Assembly Inspection
- Used Production Tubing Inspection

### Shutdown Services

- Storage tanks inspection
- Piping inspection
- Pressure vessels inspection
- Boiler inspections
- HRSG (Heat Recovery Steam Generator) inspection
- Turnaround management
- Equipment and accessories inspection
- Conventional and advance Non-Destructive testing services

### **NON-DESTRUCTIVE TESTING SERVICES**

### Conventional NDT Services

- Radiography
- UT A Scanning
- UT Thickness Gauging
- UT Shear wave examination of welds
- MPI / DPT of weld joints
- Wet fluorescent MPI
- Surface Eddy Current testing of weld
- Crack Depth Measurement
- Portable Hardness Testing
- Dry Film Thickness Gauging of Coating
- Low voltage pin hole detection of coating
- High Voltage holiday testing of coating
- Vacuum Box testing of weld joint

### Advance NDT Services

- 'Guided Wave' Long Range Ultrasonic Testing [LRUT] pipe examination
- Manual & Automated Corrosion Mapping
- Magnetic Flux Leakage testing of tank bottom [MFL]
- Videoscopy up to 9.6 meter coverage with sizing capability
- Thermography
- Tubing Inspection
- Eddy Current [EC]
- Internal Rotating Inspection System [IRIS]
- Remote Field Testing [RFT]
- Magnetic Flux Leakage Testing [MFL]
- Time of Flight Diffraction [TOFD]
- Phased Array weld Inspection
- Automated UT weld scanning
- CHIME, rapid noninvasive Scanning of pressure vessels

- Automated UT Crawler for tank shell UT monitoring
- Flange Face Phased Array scanning
- HTHA Inspection
- Field Metallography
- PMI (Positive Material identification)
- Pulsed Eddy Current Testing for CUI
- Smart Pigging solution for Pipeline Assessment

### Metallurgical Testing Services

- On site Metallography
- Replica Metallography
- Lab Testing Services

# ASSET INTEGRITY MANAGEMENT SERVICES

### Asset Integrity Management Services

- Risk Based Inspection Management
- Aging Facilities, Life Assessment and Extension Services
- Specialized Studies and Examinations;
  - Creep damage Assessment
  - High temperature Hydrogen Attack
  - Hydrogen induced cracking assessment
- Mechanical integrity
   & Data Management
- · Fitness for Service assessment;
  - Level -I Assessment
  - Level-II Assessment
  - Level -III Assessment
- Root cause failure analysis
- Corrosion Control Document
- Integrity Operating Windows

### PIMCP - PIPELINE INTEGRITY MANAGEMENT & CATHODIC PROTECTION SERVICES

Pipeline operator's objective is to continue providing safe and reliable delivery of oil & gas products to their customers without adverse effect on employees, the public and environment. When pipeline integrity is compromised, the probability of pipeline leakage becomes high.

SGS provides Pipeline Integrity
Management Services - PIMS which
embodies an error-free, leak-free,
spill-free and incident-free continuous
operation of a pipeline system whether
it is onshore and/or offshore, with no ill
effect on health, safety, environment and
the economy.

SGS Provides following services:

### Pipeline Integrity Management Program

- Managing System Integrity of Gas Pipelines As Per ASME B31.8S
- Managing System Integrity for Hazardous Liquid Pipelines Aa Per API RP-1160 Integrity management plan
- Performance plan
- Communications plan

- Management of change plan
- Quality control plan

### Pipeline Integrity Management Plan

- Data Management & Threat Evaluation
- Risk Assessment
- Integrity Verification / Assessment
  - DIRECT ASSESSMENT
    - External Corrosion Direct Assessment (ECDA)
    - Internal Corrosion Direct Assessment (ICDA)
    - Stress Corrosion Cracking Direct Assessment (SCCDA)
    - Cathodic Protection System Solutions – EPCC, Maintenance, Troubleshooting, Audits
  - IN-LINE INSPECTION (ILI) (Report Review-Finding's Evaluation)
  - HYDROSTATIC TESTING / PRESSURE TESTING (Witnessing)
- Response to ECDA, ICDA, SCCDA, ILI, Pressure Test
- Remaining Strength Evaluation of Corroded Pipelines:
- Remaining Strength Evaluation of Dented Pipelines:

### Smart Pigging – SGS Solution

### Solutions For:

- Un-piggable lines (high amounts of sediments, difficult geometries, large consequences of stuck pigs, subsea lines
- Fast corroding pipelines, flow lines from well head to processing units,
- Generally for upstream assets

# Cathodic Protection System Solution - EPCC

SGS is contributing profoundly in corrosion protection solutions to all our valuable clients by providing complete solution of Cathodic Protection System's Design / Engineering, Procurement, Construction & Commissioning services for Pipelines & Tanks either onshore & offshore structures.

We are proving one window solution for both type of cathodic protection systems as:

- ICCP Impressed Current Cathodic Protection System
- SACP Sacrificial Anode Cathodic Protection Systems
- Cathodic Protection Systems EPCC,
  - Design / Engineering,
  - Procurement,
  - Construction,
  - Commissioning
- Maintenance Rehabilitation Consultancy
- Structure / Asset Covered in Cathodic Protection Systems Solution:
  - Pipelines



- (Onshore & Offshore)
- Well's Casings
- Tanks
  - (Aboveground Storage Tanks, Buried / Semi buried Tanks, Vessels & Bullets)
- Offshore Asset
  - Jetty Piles, Structure Columns, Jackets, Pipelines, Sheet Piles/ Berth, Docks,
  - Vessels SACP Sacrificial Anode Cathodic Protection Systems
- Anti Fouling CP System ICAF (Impressed Current Anti Fouling CP System)

# Cathodic Protection System Solution – Audits Consultancy

- Cathodic Protection Systems Audits, Trouble Shooting
- Consultancy
- Remaining Life Assessment, Efficiency Evaluations
- Repair Management & Mitigation
- New Installation Maintenance Rehabilitation - Consultancy

### Pipeline Aboveground Surveys

- Direct Current Voltage Gradient (DCVG) Survey
- Alternating Current Voltage Gradient (ACVG) Survey
- Current Attenuation Survey by Pipeline Current Mapper (PCM)
- Close Interval Potential Survey (CIPS)
- Pipeline Elevation Profile Survey
- Pipeline Coating Holiday/Pinhole Detection
- Cathodic Protection Systems Efficiency Audits (CP SURVEYS)
- Pipe to Soil Potential Survey (PSP)
- Underground Pipeline Locating & Mapping Service
- Underground Cable Locating & Mapping Service
- Soil Resistivity Survey
- pH Evaluation (in the ditch examination)
- High Voltage AC Transmission Line Interference Testing
- Stray Current Mapping
- CP System Consultancy

### **ELECTRICAL SERVICES**

### **Electrical Installations Inspections**

Human and Equipment Safety must be included in Electrical Power Systems in order to obtain a safer working environment.

SGS Provide the following services in Electrical Area:

- Electrical Installation Gap Analysis
- Detailed Inspection of Electrical Installations for identification of

- potential electric safety hazards.
- Review of Installations for compliance to international code and standards.

# Services for potentially explosive atmospheres.

- Hazard Area Classification Study
- Visual, close & detailed inspection by IECEx certified persons
- Inspection, Repair & Maintenance of Ex Rated assets
- Repair / Overhaul supervision of Ex equipment.

### Power System Studies

- Short Circuit Analysis
- Load Flow Analysis
- Arc Flash Analysis
- Protection device coordination
- Single Line Development & upgradation

### Power Quality Analysis

- Measurement of Total Harmonic Distortion
- Voltage Profiling
- Load profiling
- Transient Measurement

Electrical Equipment Health Assessment through Advance Diagnostic Testing Techniques

# Power & Distribution Transformer Testing

- Turn Ratio
- Winding Resistance
- Insulation Resistance
- Capacitance & Dissipation Factor
- Sweep Frequency Response Analysis
- Dielectric Response analysis
- Partial Discharge through Drain Valve Sensor

### Rotary Equipment Testing

- Winding Resistance
- Insulation Resistance
- Tan Delta
- Tan Delta Tip Up
- Partial Discharge
- Polarization Depolarization Current Analysis
- Motor Current Signature Analysis
- Motor Circuit Analysis
- Recurrent Surge Oscillography (RSO)
- Electromagnetic Core Imperfection Detection (ELCID)
- Dielectric Response Analysis

### Cable Testing

- Insulation Resistance
- DC High Potential Test
- VLF High Potential Test
- Partial Discharge Measurement
- Partial Discharge Localization

### Switchgear Testing

- Instrument Transformer Testing
- · Circuit Breaker Testing
- Protection Relay Testing
- Battery Bank Testing.
- Online Partial Discharge Testing
- SF6 Gas Analysis

### **SUSTAINABILITY SERVICES**

We offer the following services

- Energy Audits ( Walk through & Comprehensive )
- Energy Analytics
- Green Building Certification ( LEED / EDGE)
- Renewable Energy Consultancy
- Energy Management Consultancy
- PV Solar Performance Testing / Audits / Consultancy

### **OIL CONDITION MONITORING SERVICES**

SGS OCM services provide laboratory analysis of unused and in-service lubricants. Used as part of your asset reliability program, predictive maintenance helps you to improve plant reliability, ensure optimum asset uptime and reduce failures. We detect lubricant degradation, incorrect lubricants in use, early signs of wear, and contamination in machinery allowing for planned action and downtime.

SGS Lube Oil Analysis includes following as per ASTM standard:

Kinematic viscosity at 40 C, Kinematic viscosity at 100 C, Viscosity index, Total acid number, Total base number, Flash point Pensky-Martens Closed Cup Test, Sulfur by XRF, Water by Karl Fischer Reagent, FTIR (oxidation), FTIR (nitration), FTIR (sulphation), Analysis of metal, Wear metal analysis iron, chrome, tin, aluminum, nickel, copper, lead, manganese, Contamination silicon, potassium, sodium, titanium, vanadium, cadmium and Additive Metals calcium, zinc, phosphorous, barium, molybdenum, magnesium, boron as per ASTM

### Transformer Oil Analysis

SGS Transformer Oil Testing provides an accurate picture of the condition of your transformer and the insulating fluid early detection of chemical changes or contamination within the insulation fluid provides advanced warning of potential problems, avoiding unwanted downtime and costly unscheduled maintenance. Typical transformer oil analysis includes, but is not limited to:

- Dissolve Gas Analysis
- Moisture Content
- Dielectric Strength
- Acidity
- Dissipation Factor

- Furanic Compound
- Oxidation Inhibitor content DBPC
- · Corrosive Sulphur
- Interfacial Tension
- Oil Quality Index Number
- Density
- Pour Point
- Flash Point
- Oxidation Stability
- Kinematic Viscosity
- Sediment and Sludge

### **CIVIL SERVICES**

### Civil & Infrastructure Inspections

- Reliability of building / structure from Project inception, Design till Operations & Maintenance
- Geo-Technical Soil Investigations & Reporting
- Topographic and Alignment Surveys
- Technical Audits
- Project Management and Construction Quality Management services
- Building Information Modeling
- Integrity Assessment of Existing Building Structures (RCC & Steel Structures)
- Visual Inspection of Structures as per ACI, AISC & ISO standards guidelines
- Destructive & Non-Destructive Testing with Advanced Testing Technology
- As-Built Surveys and Drawings Development
- Geological & Hydrological Surveys
- Repair procedures and methodology for retrofitting of existing structures

### Construction Material Lab Testing

SGS operates a network of laboratories strategically located on all continents, offering mechanical, physical and chemical testing services. Tests are performed in accordance with locally and internationally recognized standards. All laboratories are ISO/IEC 17025 accredited materials laboratories and providing testing services in following areas:

- Metal products: steel plates, rebar, fasteners, welding materials etc.
- Construction materials: fitness and soundless cement, concrete and masonry mortar, asphalt, concrete, soil, brick etc.
- Geotechnical laboratory services include:
  - Soil testing
  - Aggregate testing
  - Field density testing
- Non Destructive Material Testing services including:
  - Schmidt Hammer Test
  - Ultrasonic Pulse Velocity
  - Ferroscanning

- Corrosion Analysis
- Destructive Testing including:
  - Core extraction, sampling and compression load test
  - Chemical testing of chloride content & carbonation

### **MARINE FILED SERVICES**

Provision of certification, commissioning, measurements (sampling and testing), calibration, monitoring and consulting/ forensic services for the marine environment including:

- Natural environment (coasts, lagoon, sea, navigable lakes/rivers and sediments)
- Anthropic environment (ships, platforms, terminals, piers and ports)
- Land including tests or monitoring of marine equipment (engines, treatment system, purification or fire prevention systems from an environmental point of view)

### **OIL AND GAS UPSTREAM SERVICES**

Upstream activities are those that take place from the point at which oil & gas reservoirs are explored, appraised, developed and produced until the point at which the crude oil, gas or condensate is processed to commercial quality and ready for transportation. Activities related to the exploration and production of crude oil, natural gas, condensate, produced water, sand etc., as well as drilling and production related materials & chemicals fall under the Upstream segment

- In the new organization, these services will fall firmly in the Mining, Energy, and Power sector focused largely on National and International Oil Companies as target customers
- Upstream Consultancy
- Drilling Rig Equipment Inspection / DROPS Survey
- Sampling & Analysis
- Cased Hole Services
- Early Production Facilities

# CONDITION BASED MONITORING SERVICES

We provide CBM services to reduce vibrations, precision alignment, and field balancing that helps to minimize machinery downtime and increase the efficiency of systems.

Main condition monitoring techniques applied in the industrial sectors are;

- Vibration Analysis and diagnostics
- Balancing & Alignment
- Oil / Lubricant analysis
- Ultrasound Testing (Airborne Ultrasound),
- Infrared Thermography
- Motor Condition Monitoring and Motor current signature analysis (MCSA)

### **PLANT AND TERMINAL OPERATIONS**

SGS offers below services for Plant & Terminal Operations:

- Barge loading and unloading
- Terminal Operations
- Rail and truck loading and unloading
- Rail switching operations
- Marine dock operations
- Warehouse operations
- Tank farm, pipeline and underground storage operations

### **MEASUREMENT AND CALIBRATION**

SGS measurement and calibration services offers outright solution for calibration and inspection of wide range of standards and equipments.

- Thermal validation of freezers, BOD, Furnaces, ovens, Incubators etcln addition to that temperature related equipments like temperature sensors, transmitters, data loggers, baths, and other related equipment
- Verification and certification of pressure safety valves (PSV) (Online and offline), transmitters, pressure recorder, gauges, deadweight testers etc.
- Force and Torque instruments
- Inspection/certification of masses, weighing balances, weighbridge and weigh belts.
- Calibration of all types of dimensions equipments that includes gauge,
   Vernier calipers, micrometers, blocks, dip tape, dip rod, angle measurement devices etc.
- Electrical calibrations
- Instrumentation calibration
- Environmental monitoring instrument such as lux meter, tachometerSound level meter, gas monitor.
- Storage Tank (Horizontal, Vertical, Day, Underground) Calibration with PWD certificates
- Tank lorries calibration for Oil Marketing Companies
- Validation and meter test runs of flow meters
- Flow meters calibration
- Inspection of metering skid (flow metering skid)
- Inspection and certification of Orifice Plate



### **SAMPLE MANAGEMENT**

We offer expert supply chain services to ensure safe and compliant handling and transportation of goods that need special care or attention:

- Target groups include:
  - Sales departments shipping commercial samples
  - R&D facilities shipping research samples
  - Industries shipping small volumes of commercial products
  - Laboratory proficiency schemes
  - We focus on products that are under special regulatory requirements such as:
  - Dangerous Goods
  - Food and Pharma grade products (GDP, Cool Chain)
  - Environmental requirements
  - Biomedical products and samples
  - Medical shipments

Sample Management Services Includes:

### Services adapted

### Full service

 With SGS's full service option, you can benefit from our expertise from end to end. We will collect your bulk products, prepare your samples in different volumes, store them, pack and ship them to your customers' locations all over the world.

### Pick and ship

 With SGS's pick and ship option, we pick up your already prepared samples and store for you until your customer has requested a sample. Then we package and ship your sample.

### On-Site

 SGS can place qualified and experienced personnel at your own facility to package and ship your samples.

### Shipping samples

Shipping samples has never been easier, our services includes:

### **Bulk collection**

 Our teams collect your products directly from your location.

### Preparing your samples / storage

- Compliance with international regulations
- Customizable compliant packaging
- Hazardous products expertise

### Storage

We provide personalized services to manage your samples:

- Inventory management
- Compliance with safety standards

### Shipping your samples

- Urgency of requests taken into consideration
- Optimization of the best transport mode available (best speed of delivery/ cost ratio)

### **FUEL INTEGRITY PROGRAMS**

Fuel Integrity Programs (FIP) is a complete package of integrated services, delivered as a turnkey solution fully operated by SGS.

- FIP is designed to fight all aspects of fuel fraud such as dilution, adulteration, theft and grade swapping.
- FIP help to prevent:
  - Loss of tax revenues and subsidy abuse for governments
  - Brand abuse for oil marketing companies
  - Sale of poor-quality fuels (protection of consumers and environment)

FIP consists of assuring the integrity and quality of fuel products as they move through the supply chain using a fuel marking technology combined with risk analysis and prediction systems.

SGS provides the infrastructure and mobilizes teams of experts to implement the logistics and field services consisting of fuel marking operations, field-testing activities, audits and reporting.

### **OIL AND GAS FUEL RETAIL SERVICES**

- SGS provides a wide range of services for fuel retailers, from fuel quality and quantity monitoring programs by a sampling of fuel from every part of the supply chain and testing in mobile and stationary laboratories to compliance audits and assets condition assessments.
- By defining the fuel retailers' needs, SGS delivers a combination of services during a single visit to a gas station. By doing so, SGS can bring cost down significantly by utilizing less staff for the same or more services. The concept of providing a range of services on site in a single visit is called Mobile Team Concept

### **CARGO TREATMENT SERVICES**

Cargo treatment services is now a days highly competitive trading environment demands: It is a flexible approach to meet the contractual and physical limitations of oil and agriculture commodities. These services offer manufacturers and traders more agile and cost-effective approach for shipping and storage of liquid products

### Cargo treatment services include:

- Treatment of crude oil and petroleum products through supply chain
- Performance additives for retail fuels

# INDUSTRIAL VALVES TESTING REFURBISHMENT & CERTIFICATION

Valve Services ensure traceable refurbishment and overhaul of valves, giving a cost effective and reliable services to our customers. All work undertaken is traceable to national standards utilising our fully skilled engineering workforce as per the requirement of API RP 598 and API RP 621

- Marking and identification upon receiving
- Document review
- Initial inspection
- Cleaning & Dismantling
- Post Dismantling inspection for determination of refurbishment scope
- Refurbishment

### **GOVERNMENT MANDATES**

Public sector organizations require solutions designed to work in harmony with the processes and policies they already have in place. Our unrivaled border control services for scanner installation, transit monitoring and risk profiling support the public sector in reducing risk worldwide. Our e-government solutions enhance international trade and revenue processing. We improve visibility, efficiency and accountability in the aid and development sector. Our customers trust our knowledge of quality, health, safety and environmental issues to comply with complex regulations. We improve quality and maximize productivity across the public sector.

The Government Mandates services includes the Vehicle Compliance services that we need to maintain and develop as well as digital services for governmental authorities such as:

- Vehicle Compliance
- Vehicle Assessment and Retail Network Services
- Citizen Services
- Electronic Cargo Tracking Services
- E-Government Solutions
- Non-Intrusive Inspection
- Single Window
- Track & Trace Solutions
- NGOs Benchmarking and
- Tax Services
- Consulting, Aid Efficiency, Non-Profit Sector Solutions

### **TRAINING SERVICES**

SGS offers a variety of options to ensure that customer requirements are met. Our training programs cover a wide range of topics covering market need in public and in-house training sessions. Technical areas include, but are not limited to:

- Mechanical
- Electrical & Instrumentation
- Civil
- Environment
- Health & Safety
- Quality & Testing
- · Other Industry Specific

### **ENVIRONMENTAL SERVICES**

SGS has state-of-the-art chemical and microbiology laboratories. Following are the main services we offer for the environment, health and safety sectors.

### **ENVIRONMENTAL AUDIT & COMPLIANCE**

- Environmental Impact Assessments (EIA)
- Initial Environmental Examinations (IEE)
- Environmental Management Plans
- Environmental Site Assessments (ESA)
- EHS Legal Gap assessment/Audit
- EHS Legal Register preparation/ upgradation
- Hazardous Substance Management Plan (HSMP)
- Risk assessments
- Asbestos audits
- Environmental compliance audits
- Environmental management strategies
- Hazardous waste audits
- Contaminated land remediation studies
- Alliance for Water Stewardship (AWS)
- Waste management

### **ENVIRONMENTAL LAB TESTING**

### Water quality testing

- All types of water/wastewater
- ZDHC/detox testing
- ETP base line studies

### Solids

- Sludge from wastewater
- Treatment
- Waste from process
- Ash from incinerator
- Soil analysis

### **Chemical Analysis**

- Dioxins/furans
- Asbestos sampling & testing
- VOCs/pesticides
- Heavy metals

### **ENVIRONMENTAL FIELD & MONITORING**

- Ambient air quality monitoring
- Stack emission monitoring
- Continuous Emission Monitoring (CEMS)
- Noise level monitoring
- Indoor air quality monitoring
- Light intensity monitoring: LUX
- Vehicular emission monitoring
- Personnel dust exposure
- Personnel noise exposure
- Soil contamination studies
- Air dispersion modeling
- Post project monitoring
- Baseline data generation
- Health Exposure assessments
- Fugitive emissions studies
- Community noise impact studies and contouring
- Carbon foot printing

### Microbiological Testing

- Air bioburden
- Surgical product testing and clean room monitoring/validation
- Legionella testing

### **HEALTH AND SAFETY SERVICES**

### Technical Safety Services Man

- Training, Competencies
   & Certifications
- · Risk assessment engagement
- Contractor's Supervision
- HSE Monitoring
- Occupational IH Monitoring
- Fire team organizations
- H&S Organization along with Roles & responsibilities

### Methods / Processes

- HSE MS framework development, deployment and monitoring
- HSE Performance measurement and monitoring (KPIs)
- HIRARC, JSAs / TRAs and control measures
- IOGP Lifesaving Rules
- Fire Protection Procedure
- Equipment Integrity
- Hazardous Substance Life cycle Management
- Emergency Preparedness & Response
- Construction Safety Management and deployment
- Fire Safety
- Contractor Management
- PTW, WAH, CSE & Hot Works
- Behavior Based Safety (BBS) programme
- PPEs Management programme

### Materials

- Flammable substance storage and transportation
- Compressed gas storage (LPG, Acetylene etc.)
- Toxic chemicals/material life cycle management

### Machine

- Industrial Equipment inspection & certifications
- Powered tools certification
- Fire suppression system design,
- Inspections & verifications
- Fire alarm system and Management
- Fire suppression system adequacy

### **Process Safety Services**

- Process Safety Management System development/deployment and validation
- PSMS Trainings
- Process Hazard Analysis
- Hazard Identification (HAZID)
- Hazard Operability (HAZOP)
- Safety Integrity Level (SIL) Layer of Protection Analysis (LOPA)
- Quantitative Risk Assessment (QRA)
- Emergency response planning
- Fire risk Assessment (FRA)

### Fire Safety Services

- Fire Safety Assessment
- Fire Safety Risk Assessment
- Fire team organization development
- Trainings
- Risk Assessment and control measures
- Fire Protection Procedure
- Equipment Integrity
- Hazardous substance storage & transportation
- Emergency Response
- Fire suppression system
- Fire hydrant System design verification
- Fire extinguishers
- Fire alarm system and Management
- Sprinkler system design verification
- Fire Emergency Mitigation,
   Preparedness, Response & Recovery
- Active Fire Protection
- Passive Fire Protection
- IT Server rooms / Electrical Panels / MCC Room Integrity Testing (RIT)

### **WWW.SGS.COM**

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