

Inspection services

Expert advice for the safe and reliable procurement, manufacture and installation of equipment, materials and components.



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Will it be ready on time, within budget, to the right specification? We can provide that assurance.

Around the world, over 50,000 customers including manufacturers, engineering procurement construction contractors and asset owners, regularly turn to Lloyd's Register to help them operate with confidence.

In an industry where safety is paramount, choosing Lloyd's Register as your technical expert sends a clear message to your stakeholders that your business is committed to meeting its responsibilities.

Our expertise covers the design, construction and installation of high-integrity, capital-intensive equipment, components and assets. Whatever your need, however challenging, we can help you to achieve on-time project delivery and support your team with technical value and efficiency.



We are the world's largest ASME (American Society of Mechanical Engineers) Authorised Inspection Agency outside North America and one of the most reputable notified bodies for PED (Pressure Equipment Directive).

Providing assurance; enhancing reliability

Stakeholders in high-risk industries need to be certain that operations will run reliably and safely. The first task is to assure all equipment, components and assets are designed correctly and built to specification.

The Lloyd's Register Group is one of the world leaders in assessing facilities, equipment and products against regulatory, voluntary or proprietary standards, industry codes, regulations or schemes. Choosing us as your technical expert demonstrates your commitment to getting the critical early stages right, first time.

Five reasons to choose us

Operate with confidence

We are global leaders in providing independent assurance services in the safety and performance of assets, systems, people and processes. We participate in world renowned technical committees such as the American Society of Mechanical Engineers (ASME), and lead CEOC's energy and efficiency committee and participate with CEOC on their inspection committee and pressure equipment committee. We present insight into modern-day safety and performance challenges, lead on discussion forums and papers at industry-wide events such as ICONE, and contribute to the development of international standards in Asia, Europe and Americas.

Benefit from our expertise

Our people are of the highest technical calibre. They understand the business of manufacturing, from how steel is rolled to the way a pressure vessel is put together. Our work includes many high-integrity manufacturing projects, from the development of the first land-based boiler rules through to the world's largest integrated refinery project.

We appreciate the technical and commercial challenges faced by both manufacturers and end users, and that to achieve a sustainable and growing business, stakeholders need to think beyond compliance.

Get support worldwide

Manufacturing is a global business, as is our network of over 8,500 specialists. You will find us in over 186 countries, from the key manufacturing hubs around the world to the harshest and remote parts of the planet. Clients benefit from our in-depth knowledge of local operating conditions and global bank of expertise.

Improve safety while enhancing reliability and competitiveness

We do more than carry out inspections. We help our clients solve problems, working collaboratively towards a common goal: to improve business performance throughout the supply chain. Our consultancy services focus on research and development breakthroughs and commercialising new products, as well as industrial innovation in smart, safe and sustainable manufacturing – extending valuable benefits to your clients.

Count on our third-party impartiality

You can be assured of our complete independence. We are able to make technical decisions free of commercial and political pressure. With no institutional or private shareholders, Lloyd's Register reinvests surplus resources to fulfil its 250 year-old mission: 'to work to protect lives at sea, on land and in the air'. This mission influences everything we do as an organisation.

We routinely resolve complex, real world manufacturing issues with the latest ideas and technologies for:

- pressure vessels and boilers
- pressure components and valves
- electrical systems and instrumentation
- other plant equipment
- rotating equipment
- machinery and mechanical equipment
- procurement management system
- global vendor quality management
- welding and fabrications
- pipelines
- ports and cranes
- lifting equipment and appliances
- cylinders, tubes, drums and containers (new build and in-service)
- containers, road tankers, tanks, IBCs and ISO boxes.






A surveyor climbs into a deaerator to carry out an in-service inspection at a power station.

We're there at every stage

Successful manufacturing rests on the decisions taken early on during component or equipment concept and design. These decisions often have wider business implications and may involve various stakeholders. We can support your project at any – or every – point.

Our teams comprise specialists with an in-depth knowledge and understanding of all the materials, components, equipment, systems, human behaviour and operational complexities involved with manufacturing facilities and large-scale assets.

The table on this page is an illustration of an asset life cycle approach and the types of service we can provide. Our offering is entirely flexible to fit your business or project requirements. We can apply individual services at a particular stage or provide a complete business solution. For further details, just get in contact.

Operate with confidence at every stage	01 Concept and design	02 Procurement and construction	03 Transport and installation	04 Commissioning	05 Operation (in-service)	06 Life extension and re-use	07 Decommissioning, removal and disposal
<p>Our specialist expertise covers all equipment, components and assets.</p>   	<p>Helping you define the project scope and risks during the design stages – minimising overall project costs.</p> <p>This may cover material procurement, fabrication, assembly and legislation. Full life cycle cost analysis is normally carried out. Integrity related issues include material selection, components, facilities, monitoring and inspection requirements.</p> <p>Examples of how we help:</p> <ul style="list-style-type: none"> – concept safety analysis – concept design evaluation – approval in principle – environmental assessments – human factors – appraisal of key FEED deliverables – operational principles for structural, mechanical, electrical and instrumentation plus environment conditions – advice on production and implementation of safety management systems including accident hazard identification – support on procurement and contracting strategies. 	<p>Ongoing monitoring of your project, management of vendor inspection, controlling sub-contractors and ensuring deadlines are achieved with total integrity.</p> <p>Materials selection is confirmed using codes, standards and procedures, fabrication and assembly.</p> <p>Examples of how we help:</p> <ul style="list-style-type: none"> – preparation of specification and scheme plans – independent review and audit of designs, specifications and test results – project risk analysis and risk management – specialist engineering analysis including noise and vibration predictions – type certificate approval – NDE/NDT support. 	<p>Applying expertise in logistics, planning, preparation, vendor organisation, including precision control for loading and unloading equipment, safe handling and storage assessments and on-time delivery. Also human factors' assessments.</p> <p>Examples of how we help:</p> <ul style="list-style-type: none"> – precision planning, routing and permit recommendations – vendor management and logistics execution – effective handling and staging of complex cargo challenges – secure siting facilities – safe delivery (JIT) and installation of sensitive, technical and valuable components – documentation review, survey and audits. 	<p>Creating a framework covering integrity policy, strategy, codes of practice procedures, specifications and guidelines – all of which are required for successful operation.</p> <p>Examples of how we help:</p> <ul style="list-style-type: none"> – implementation and project management – independent validation and verification during testing and commissioning – review of documentation – project characteristic measurement – measurement of rotating equipment (noise, vibration, surge testing, etc) – training – ASME and RCCM code inspection services – certification. 	<p>A range of skills and software to help implement measurement, failure, inspection and investigation strategies to ensure that assets remain safe, productive and fit for purpose.</p> <p>Examples of how we help:</p> <ul style="list-style-type: none"> – in-service inspection (compliance) – asset management assurance services (BSI PAS 55) – risk-based inspection – integrity services and management of integrity inspection activities; structures, pipelines, pressure vessels – management systems audit – NDE support – technical troubleshooting (particularly for vibration, noise and high-speed rotating equipment issues) – fitness for purpose assessments – operational risk assessments – anomaly management – lifting integrity inspection/recertification – corrosion studies – human factors – training. 	<p>Integrate our knowledge and technology to help extend the safe performance of your asset, process or systems.</p> <p>This could include corrosion rate monitoring, process monitoring and inspection, data collection, analysis, reporting and corrective action.</p> <p>Examples of how we help:</p> <ul style="list-style-type: none"> – systematic reliability analysis, including life cycle optimisation – maintenance strategies and audits – fitness for service evaluation – current condition surveys – structural fatigue analyses – assistance when retrofitting emissions control equipment (de-SOx, de-NOx) and carbon capture post combustion technologies. 	<p>Supporting decommissioning and the safe disposal, or re-use of, existing assets.</p> <p>Examples of how we help:</p> <ul style="list-style-type: none"> – concept modelling for asset regeneration and replacement – removal and disposal assessment and management – structural analyses – environmental studies – HAZID/HAZOP support.
<p>Leading experts at:</p>	<p>Helping you meet your requirements and maximising asset value</p>	<p>Helping you deliver your projects on time and budget, to the correct specification</p>	<p>Ensuring ocean and land-based logistics are cost-efficient and effective, and final component installation meets all technical and legal requirements</p>	<p>Reducing set-up problems and improving coordination, quality and cost management</p>	<p>Successfully optimising safety, reliability and productivity</p>	<p>Reducing downtime and optimising safe performance</p>	<p>Mitigating risk to people and the environment</p>

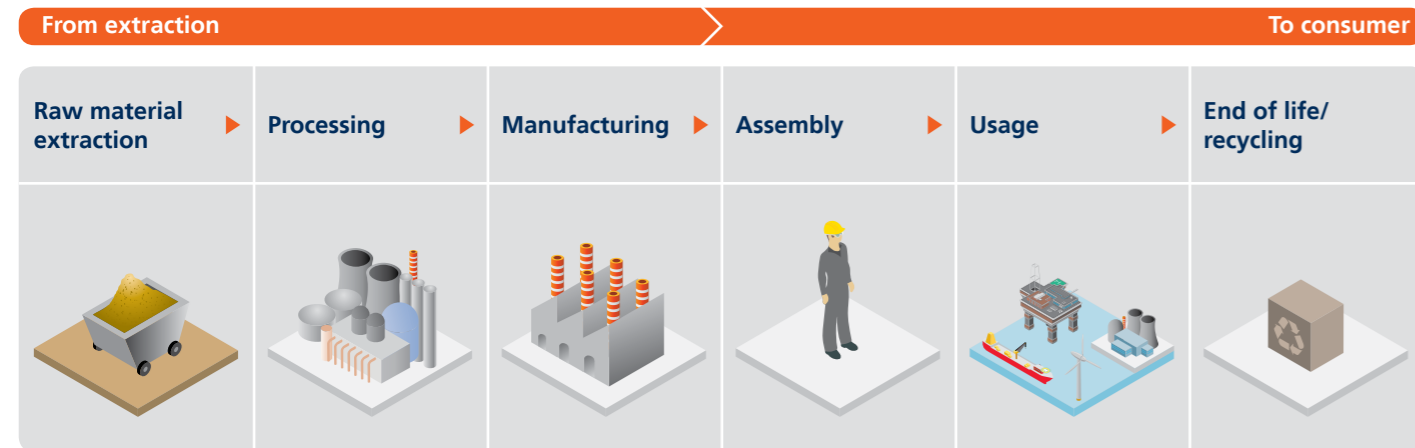
Supporting you across the supply chain

Whether you are manufacturing a single component or a large-scale facility, we have the industry insight and right expertise to help you succeed.

We can support you in mitigating the risks you face at every point, whether that is during the design, manufacture and assembly of product components, the production of prototypes or when seeking type approval or project certification.

We provide this expertise across the manufacturing supply chain. This unique breadth of knowledge and technical insight has resulted in many clients gaining increased returns from improved safety performance and higher production rates.

Our focus is on creating safe and reliable supply chains that are also sustainable in both commercial and environmental terms.



An example illustration of a manufacturing supply chain.



Benefits of our expertise throughout the supply chain:

- reduce operational and logistical costs
- achieve planned and quantifiable service levels
- minimise disruption to the services you provide to your customers
- achieve an excellent safety and performance record
- provide a clearer supply approach with stakeholders to meet customer satisfaction and build good customer relations.

Safeguarding your business and your project



What we do and the services we provide help clients to establish a compliance route map through the various standards that must be met.

Conformance

Ensure and demonstrate your assets, systems, people and processes meet agreed requirements. Our support covers international and national regulations, standards or codes; Lloyd's Register Rules; duty-holder schemes; safety-case regimes; and industry demands.

Our management systems assurance services cover the following areas:

- quality (ISO 9001)
- the environment (ISO 14001 and 14064 plus BS 8555)
- energy management (BS EN 16001)
- occupational health and safety (OHSAS 18001)
- asset management (BSI PAS 55)
- security (ISO 27001)
- product carbon footprint (BSI PAS 2050)
- social responsibility (ISO 26000)
- social accountability (SAI SA8000)
- business continuity management systems (BS 25999).

Our asset verification services cover:

- e.g. ASME and RCCM code inspection services
- certification to IEC TS 61400 – 22; API RP 2A; IEC 61400 – 1/3
- in-service and risk-based inspection services
- independent, third-party inspection assessment
- project quality management assessments
- vendor assessment
- welder and welding procedure qualification services (e.g. EN 15614)
- verification of corporate social responsibility (CSR) and sustainability reports
- directives compliance
- carbon reduction and climate energy programmes
- emissions trading schemes' assessments.

We observe the ethical standards of associations and bodies of which we are a member, and set these standards for the core businesses in which we operate. We inspect pressure equipment to a range of codes, regulations and standards, including:

- European Pressure Equipment Directive (PED)
- European Transportable Pressure Equipment Directive (TPED)
- American Society of Mechanical Engineers (ASME) Code
- National Board Inspection Code (NBIC)
- Indian Boiler Regulation (IBR)
- Department of Safety and Health (DOSH), Malaysia
- Ministry of Manpower (MOM), Singapore

- Ministry of Health, Labour and Welfare (MHLW), Japan
- Technical Standards and Safety Authority (TSSA), Canada
- Occupational Health and Safety Act, South Africa
- Work covering the Occupational Health and Safety Regulations, Australia
- New Zealand Occupational, Safety and Health Service (OSH)
- International container regulations, carriage of dangerous goods
- Bureau of Product Standards (BPS), Philippines
- Office Hazardous Materials Safety (Department of Transport (DoT)), USA
- Boiler and Pressure Vessel Division, Labour Department, Hong Kong.

As our client you have access to the entire resources of the Lloyd's Register Group, and our range of specialist services to meet your manufacturing challenges.

Reliability Based Mechanical Integrity (RBMI) software

Provides a fully integrated risk-based inspection and maintenance programme for pressure vessels, piping, storage tanks, heat exchangers (including bundles), relief devices, pipelines, rotating equipment and instrumentation. RBMI is a third-party solution, certified to API 580, and can be integrated with back-office systems such as SAP, CMMS, document management solutions and data historians.

Pressure relief analysis software

Combined with our expertise on pressure relief analysis, this software is part of our service portfolio offering accurate analysis to help support the identification of potential safety issues associated with pressure relief systems, from consistency of documentation used to support design principles with regulatory requirements, through to the strategic solutions of pressure relief system capacity.

Knowledge Based Management KBAI™ software

Generates knowledge-based asset integrity maintenance and inspection plans that map directly to an organisation's risk tolerance and financial objectives.

Martec

Specialises in developing advanced engineering simulation technology for the design and analysis of complete structures, materials and systems.

Scandpower and RiskSpectrum® software

A leading independent risk management company with 40 years experience of providing consulting services and software to the international energy market. Its RiskSpectrum® software assesses qualitative and quantitative risk and reliability. The software suite includes advanced tools for fault-tree and event-tree analysis, risk monitoring, failure mode effect analysis and documentation.

Lloyd's Register ODS

Offers rotating equipment diagnostics, noise/vibration analysis, finite element analysis, fluid/structural analysis and equipment dynamics tools.

Human Engineering

The world's largest human factors consultancy. Addressing human factors is essential if people, plant and processes are to perform successfully in any complex system. Our Human Engineering team has specific capabilities in CAD design for control rooms and work environments; optimising the usability of technology, especially control systems; and assuring organisational integrity for efficient and sustainable operations.

LRQA

A leading independent provider of business assurance services including certification, validation, verification and training. LRQA is accredited by over 45 accreditation bodies and delivers services to clients in more than 120 countries. Its services help you manage your systems and risks to improve and protect your organisation's current and future performance.

We provide market-leading advice and solutions on OEM specifications, smart inspections, design appraisal, facility certification and risk-based vendor inspection. Our team from Lloyd's Register Inspection Limited provides first and second-party inspection, expediting and recruitment services. Lloyd's Register Verification Ltd, LR Insurance, Inc., and LRQA are notified bodies for a range of directives and compliance assessments which are delivered from offices within the Lloyd's Register Group network. Ask your Lloyd's Register representative for more information.



In a challenging business environment, safety, risk and technical assurance are crucial.

Consultancy

Make informed design, inspection and maintenance decisions to increase asset safety, reliability and performance. Our world-class metallurgists, material engineers and risk specialists can help you at each stage of the manufacturing process.

Our risk management services cover:

- technical safety and licensing
- probabilistic safety assessment and modelling
- deterministic safety assessment
- risk-informed evaluations of technical specifications
- risk-informed in-service inspection and risk based mechanical integrity (RBMI) solutions for asset management and inspection
- reliability centred maintenance
- severe accident analyses
- vulnerability and threat assessment
- human-reliability analysis
- safety culture (HAZOPs/HAZIDs/LOPA) and climate assessments
- the supply of industry-leading risk and reliability software
- training and competence assurance.

Our engineering services cover:

- design and commissioning
- plant-aging assessments
- structural integrity assessments
- thermal-hydraulic analyses
- corrosion engineering analyses
- fire and explosion analyses

- materials and non-destructive examination (NDE) technology
- materials engineering
- failure analysis and investigation
- mechanical integrity
- process plant and machinery engineering assessment
- electrical and control engineering analyses
- noise and vibration analysis
- hydrodynamics and engineering simulation
- integrated human factors solutions
- training and staff development.

Business solutions

Add significant value to your organisation with our tailored business solutions.

Examples of how we help include:

- project quality management and technical assurance
- independent verification and validation (IV&V)
- supply chain assurance
- integrated business management assurance
- Buildoffsite registration scheme
- organisational integrity management.

Did you know?

Our training courses play a central role in providing workforces with the necessary skills to benefit business performance.

Courses are held around the world and can be tailored to meet your specific needs. Topics include:

- corporate responsibility
- environment and climate
- supply and energy conversion chain
- information technology
- knowledge management
- management systems
- ASME
- risk and safety
- human factors
- technical competence.



Who we help

Client: High-integrity equipment manufacturer, China.
Application: Sophisticated textile-dyeing machinery.
Project scope: Independent third-party compliance, certification and conformity assessment services.

One of our clients in China is the leading producer of dyeing machinery for the textile industry, involving the design and fabrication of specialist high and low pressure stainless steel pressure plant at domestic and European sites. The manufacturer places great emphasis on sustainability, with safety, energy saving and environmental protection at the core of its development programmes, especially for castings.

From its first manufacturing days, we have collaborated closely with the company, providing third-party compliance, certification and conformity assessment services that have helped the business to realise its goals. Today, the business is the global market leader, employing 4,000 people worldwide.

Service benefits:

- helping to interpret British manufacturing standards, enabling the client to produce pressure plant for export that meet the British PD 5500 Code
- support in achieving accreditation to the ASME Boiler and Pressure Vessel Code, with LR Insurance, Inc. acting as the Authorised Inspection Agency
- assistance with entering the European market, including compliance with key European directives
- accreditation to ISO 9000 through services provided by our Group, including LRQA.

Client: ISGEC Group, part of Saraswati Industrial Syndicate Ltd, India.
Application: Heavy engineering equipment.
Project scope: Independent third-party compliance, certification and conformity assessment services.

ISGEC Group's manufacturing portfolio includes entire plant, process plant equipment, presses and boilers. It supplies the domestic Indian market and exports to over 74 countries. Key to the Group's world-leading status is its strong commitment to quality.

We have been working with the company for almost half a century, providing third-party inspection services for code-stamp equipment. Highlights include securing the National Board's 'R' and 'NB' certificate of authorisation, and approval to add 'CE' Marking on equipment for the EU.

Currently, the Group's Yamunanagar plant is seeking an ASME 'N' Stamp to fabricate nuclear power plant critical equipment. Acting as the Authorised Inspection Agency, LR Insurance, Inc. will help the client prepare a quality system for the audit.

Service benefits:

- guidance in establishing a quality assurance and quality control management system
- supporting a thriving export business through our domestic and international network of offices, assisting with the swift procurement of materials from overseas steel mills and domestic suppliers
- ensuring quality standards meet global specifications.

Client: Vijay Tanks & Vessels Ltd, India.
Application: Five high-pressure spheres for use in the United Arab Emirates.
Project scope: ASME authorised inspection services.

Vijay Tanks & Vessels Ltd is an international engineering, procurement, fabrication and construction company in the energy sector and one of the world's leading service providers for storage tanks and process equipment. The company contracted LR Insurance, Inc. to act as their preferred ASME Authorised Inspection Agency during the construction of five high-pressure spheres, with the aim of achieving an ASME 'U' stamp.

The manufacturer carried out design, pre-fabrication and petal section forming in their facilities at India, with compliance support from us. Two of the spheres were made of 9% nickel steel (15.4m diameter) and three of carbon steel (22.25m, 22.25m and 15.4m diameter). We also attended the site construction in Abu Dhabi, United Arab Emirates. The client recognised early on during the project that authorised inspectors with local knowledge at the end user's location would be able to add value in executing the project successfully.

Service benefits:

- help in meeting contractual and regulatory requirements
- support at the pre-fabricators in India and during site construction in the United Arab Emirates.



Pedestal assembled with slewing system sent from the workshop by a jacking platform.



Boom loaded to the vessel for departure.

Client: Fujian Huisman Steel Manufacturing Co. Ltd, China.
Application: Heavy lifting equipment.
Project scope: Independent third-party compliance and technical support.

Huisman designs and manufactures heavy construction assets, which it supplies to the world's leading onshore and offshore businesses. Its product range includes equipment for heavy and special lifting, drilling and pipe laying, from stand-alone components to integrated systems.

The company's site in China's Fujian Province has now delivered the primary structures for the world's largest heavy lift mast crane. This is the sixth crane we have surveyed on behalf of Huisman since it expanded its operations to China in 2007. Our surveyors have helped the company to meet the requirements of our Rules and Regulations. We have provided advice and guidance on how best to control material supply, welding and fabrication, as well as making sure that welder and welding qualifications are achieved – helping the company to deliver high-quality equipment and to schedule.

We continue to work closely together, having recently been awarded the surveying contracts for two offshore mast cranes (1,800t and 4,000t). Our client benefits from the direct relationship between our offices in China and Rotterdam, The Netherlands, near the manufacturer's headquarters.

Client: Flow control equipment product and service supplier, United States.
Application: Process valves.
Project scope: Third-party independent certification and EC Directives compliance.

Our client, a global provider of flow control products, systems and services to the oil, gas and process industries, needed independent certification of one of their product lines to meet new requirements from the product's end user. It was business critical that adequate testing and accurate results be delivered expeditiously. Therefore, our client needed to work with a provider that could locally deliver the full range of solutions required.

Within a short time frame, we were able to review the testing plan and procedure, verify the testing setup to ensure it would meet the client's needs, provide HSE compliance review, and deliver the authorised documentation for independent third-party test acceptance. Our involvement and close relationship with the client, enabled them to meet the specific requirements of their end user and without concern. Thanks to our proven reliability and integrity throughout this project, we continue to provide the client with independent third-party verification and EC Directives certification services across the full range of their product offerings.

Service benefits:

- compliance with mandatory domestic and international code requirements
- broad domain expertise allowed a single point of delivery contact
- local personnel achieved business critical service delivery.

Client: Sungjin Geotec Co. Ltd, South Korea.
Application: Heavy industry system components for power and process plant and the offshore industry.
Project scope: Independent third-party compliance, certification and conformity assessment services.

Sungjin Geotec Co. Ltd has particular expertise in the manufacture of process equipment, with rigorous quality assurance systems in place.

Products include reactors, pressure vessels, towers, columns, heat exchangers and regenerators for numerous refinery and petrochemical plant worldwide. The company has also supplied the main equipment items for floating, production, storage and offloading (FPSO) units to major industry players.

For over a decade, we have been providing ASME non-nuclear, and more recently nuclear, certification services at five of the company's factories. Our technical competency supports the manufacturer in meeting key contractual specifications and regulations, including complying with the relevant sections of the ASME Code and Pressure Equipment Directive. We have also helped the business to gain ISO 9001 quality management and ISO 14001 environment management certification accreditation.

Service benefits:

- support in meeting contractual and regulatory requirements, helping the business to grow as an international manufacturer through our technical excellence and global network
- acquiring ASME 'N' certification for nuclear business, a catalyst for growth.



Build and assembly of process modules at Sungjin's Ulsan facility, Korea.

“The fact that working with Lloyd’s Register never permits any shortcuts... is what explains the long-standing degree of confidence and mutual respect shared between our companies.”

AR Raghavan, Managing Director,
Vijay Tanks & Vessels Ltd

< Turn over to see who we help



Lloyd’s Register inspected high-pressure spheres throughout their construction in the United Arab Emirates.

Expert insight



Robin Pickup

Beyond regulation

Robin Pickup, Global Product Manager, Inspection Services

A component stamp is far from an end result. It is ever more important to broaden traditional inspection views to best meet the needs of high-risk, asset-intensive industries. Our Inspection services exist not just to provide approval marks, but to enhance the safety, reliability and sustainability of supply chains.

Read more on Robin’s insight at www.lr.org/beyondregulation

As good as our word

Peter Staton, UK Energy Business Manager

Manufacturing businesses succeed or fail on the quality of the service they provide, as well as the quality of their components and equipment. This is especially true in a tough financial climate. We can help our clients distinguish themselves by providing the best service levels.

Read more on Peter’s insight at www.lr.org/servicelevels

Built around your business

Masahiko Yoshimura, Manufacturing Sector Leader, Asia

Stakeholders in the energy and transportation sectors have one role in common: being responsible for QHSE and risk management during the manufacturing process of high-integrity, high-value assets. They have a key question for us: “How can we make the best use of your resources to satisfy our requirements?”

Read more on Masahiko’s insight at www.lr.org/beingresponsible



Peter Staton



Masahiko Yoshimura

Universal code; common challenges

Dr Dipak Chandiramani, Technical Manager and René Uebel, Deputy Technical Manager, LR Insurance, Inc.

In 2010, for the first time, there were more ASME Code certificate holders outside of North America than within the continent. Broad acceptance of the Code brings with it global manufacturing challenges.

Read more on Dipak and René’s insight at www.lr.org/commonchallenges

Dr Chandiramani is a member of the ASME Committee for Section XII (subgroup: Design and Materials) and René Uebel contributes to the Delegate Programme for the Section VIII Committee (subgroups: General Requirements and Fabrication & Inspection). Dr Chandiramani is also an Authorised Training Instructor for Section VIII, Divisions 1 and 2.

Facilitating co-operation and collaboration

Danny Walker, Compliance Services Manager, Americas

New Department of Interior regulations instruct lessees and operators of federal oil and gas leases on the Outer Continental Shelf to adopt increased safety measures. Part of the requirements call for independent third-party certification covering major subsea equipment before use.

Read more on Danny’s insight at www.lr.org/safetymeasures



Dr Dipak Chandiramani



René Uebel



Danny Walker

Smart inspection: the advantages

K Swaminathan, Business Manager, India

Inspection checks that specifications will be met, but neglects the capabilities of the manufacturer or vendor. This can prove costly, given that equipment and components are at the heart of a plant. Smart inspections mitigate the risks at stage one by assessing suppliers’ strengths and weaknesses.

Read more on Swami’s insight at www.lr.org/smartinspection

Up to the job? Assessing novel designs

Claus Mylnerup, CEO, Lloyd’s Register ODS

Putting an untried design into a complex operation inevitably brings its own set of pressures. The cost of a mistake, directly to a business and its reputation, is enormous. Take the oil and gas industry in frontier areas. What will happen when gas mixes with oil and sand particles in an innovative subsea multiphase compressor system?

Read more on Claus’s insight at www.lr.org/designpressures

Far-reaching benefits: Defining second-party inspection

Paul Greeves, General Manager, Lloyd’s Register Inspection Limited

Second-party inspections are carried out on the purchaser’s behalf. Activities are bespoke and more far-reaching than third-party inspection, addressing the concerns of those owning or operating a capital-intensive, high-risk business safely and profitably for decades.

Read more on Paul’s insight at www.lr.org/bespokeinspections



K Swaminathan



Claus Mylnerup



Paul Greeves

Our wider services

Lloyd's Register's reputation is built on more than 250 years of protecting life and property. We are dedicated to helping industry meet increasingly complex challenges and to making the world a safer place.

Besides the manufacturing industry, our Energy business also serves the upstream, downstream and power industries. Elsewhere, our other businesses – Marine, Transportation and Management Systems (LRQA) – support a wide range of industry sectors globally.



Offices in
247
cities and
towns.

186
countries
covered.

Your nearest contact

If you would like to speak to a member of our Energy team to find out how Lloyd's Register can help your business or project, visit www.lr.org/inspection for details of your local office or contact one of our regional offices:

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