

SHIPPING SAFETY AND MARINE RISK MANAGEMENT

We work to prevent incidents that may result in spills of hazardous substances. To ensure safe and reliable shipping operations, we have a rigorous set of controls and assurance measures in place. We also plan and prepare for incidents, should they occur, to minimise the impact on people and the environment.



MARINE RISK CONTROL IN THE SHIPPING INDUSTRY

Transporting hydrocarbons around the world by ship is a service that carries safety risks. For more than a century, Shell has worked with shipping industry bodies, governments and other stakeholders to develop stringent international standards and regulatory requirements to control and mitigate marine risk.

Shipping crude oil, oil products and gas is vital to maintaining the world's energy security, particularly in regions where local resources cannot keep up with demand for power and mobility. Equally, countries that export oil and gas depend heavily on shipping to honour their contracts with international customers.

There are a broad range of international standards and regulatory requirements on design, safety and operations in the shipping industry. The following international organisations are driving improvements to industry standards for shipping safety and marine risk management.

- International Maritime Organisation (United Nations): develops conventions and protocols that are adopted into the national laws of signatory governments. Examples include:
 - International Safety Management Code – defines requirements for vessel safety managements systems;
 - Standards of Training, Certification and Watch Keeping – defines competence requirements of crew;
 - Safety Of Life At Sea (SOLAS)– defines levels of safety equipment and operations; and
 - MARPOL (the International Convention for the Prevention of Pollution From Ships) – defines requirements for oil pollution prevention through equipment design and operations, including requirements for contingency plans.
- Classification Societies: non-governmental organisations that establish and maintain standards for the construction and classification of ships and offshore structures. They also supervise construction to ensure it is according to standards and carry out regular surveys of ships in service to ensure compliance with standards;
- National Regulations: for example, the United States Coast Guard Regulations and Oil Pollution Act 1990 (OPA90);
- Flag State: regulates the standards of ships under their registry, providing certification for vessels and covers design, management, operations and manning; and
- Industry Best Practice: for example, ISGOTT (International Safety Guide for Oil Tankers and Terminals), International Chamber of Shipping Guides, Oil Companies International Marine Forum Guides, American Petroleum Institute, SIGTTO (Society of International Gas Tanker and Terminal Operators).



MARINE RISK CONTROLS IN SHELL

In addition to following international standards and regulatory requirements, major oil and chemical companies, including Shell, have additional controls in place to reduce marine risk.

At Shell, we have been at the forefront of maritime safety for over a century. Shell shipped its first bulk oil from Asia Pacific to the UK via the Suez Canal in 1892. The cargo was delivered by the newly built *Murex* tanker, a 5,010-ton vessel that boasted leading-edge safety features in its design and construction. Marine insurers Lloyds of London rated the vessel '100.A.1' – a First Class risk.

In the nearly 120 years since the maiden voyage of the *Murex*, Shell has been closely involved in developing industry standards and requirements for the control and mitigation of marine risk.

In addition to following these standards, Shell has controls in place to help ensure safe and reliable operations. They include:

- **Maritime Safety Manual:** this manual from Shell's Control Framework on HSSE & SP (health, safety, security, environment and social performance) provides mandatory maritime safety requirements for all vessels, ports, terminals and berths we use as well as the operational interfaces between them;
- **Ship Quality Assurance Standard:** developed over more than 20 years to provide a process for positive vetting of cargo transport vessels;
- **Risk Management – Hazard Register and Process Safety:** documented controls of the maritime risks relating to the design and operation of maritime assets;
- **HSSE Management Systems:** Shell-operated cargo transport vessels are covered by a Shipboard Management System in compliance with the International Safety Management Code;
- **External accreditation requirements:** ISO 9001, ISO 14001 for Shell operated vessels; and
- **Competence Profiles:** for each maritime role within Shell, HSSE critical competencies are defined and a gap analysis is conducted to ensure our staff have the skills required to manage maritime risks.



PREPARING FOR OIL SPILLS AND MANAGING THE RESPONSE

Any incident involving a ship-related spill connected to a Shell business is managed by Shell International Trading and Shipping Company Ltd (STASCO) which provides 24-hour-a-day cover and full emergency response capability.

STASCO chairs Shell's multi-business oil and chemical spill advisory group (MOSAG). MOSAG is responsible for developing and promoting advice on the mitigation and control of pollution risk. The group provides advice and guidance to Shell companies based on international conventions.

Shell operating units are responsible for organising and executing spill response in line with MOSAG guidelines, including resources and contracts, training and emergency response structures, and contacts for managing oil spill response.

STASCO's emergency response plan describes the responsibilities and procedures for staff and others when responding to oil, gas or chemical shipping emergencies, including spills to water. It also documents the escalation process in a crisis.

STASCO holds regular exercises to test shipping emergency response plans with staff and external agencies. This includes the recent successful SONS (Spill of National Significance) exercise in the USA in March 2010 with the United States Coast Guard, US government agencies and STASCO.

STASCO is also the custodian, on behalf of Shell's businesses, of contracts with Tier 3 response organisations (see explanation of tiers on next page).

Spill of National Significance exercise in Portland, Maine, USA



INDUSTRY

The shipping industry has developed international conventions on Oil Pollution Preparedness, Response and Cooperation (OPRC) 1990, and has also developed the Oil Spill Compensation, Civil Liability Convention (CLC) and the International Oil Pollution Compensation (IOPC) funds.

The IOPC funds are three intergovernmental organisations (the 1971 Fund, the 1992 Fund and the Supplementary Fund), which provide compensation for oil pollution resulting from persistent oil from tankers. When a ship-sourced spill occurs, financial liabilities can be complex and the ship owner is entitled to limit his financial liability. In the USA a similar structure exists under the Oil Pollution Act 1990 (OPA 90), which is also very complex, often incident-specific, and frequently dependent on local State liabilities, which extend the OPA90 requirements. The CLC requires tanker owners to maintain compulsory liability insurance in order to access the funds available under the international conventions.

For spills on water, Shell has adopted the industry tiered response as defined by the International Petroleum Industry Environmental Conservation Association (IPIECA). This classifies the need for response capabilities in terms of the size of the spill and its proximity to a company's operating facility.

- Tier 1 is a small local spill typically managed by an operator's own resources;
- Tier 2 is a medium regional spill typically over a larger area requiring clean-up resources from a variety of sources; and
- Tier 3 are large spills that, due to their scale and likelihood to cause major impacts, call for substantial further resources from a range of national and international resources.





ASSURANCE

Through the maritime business review process, Shell conducts specialist audits of its businesses involved in maritime activity. This process provides assurance that Shell businesses are managing maritime risks to ALARP (as low as reasonably practicable), consistent with the approach of industry.

In line with ISO and Operational certification, STASCO managed ships are also subject to external audits by Flag State, Classification Societies and ISO standard authorities.

Cautionary Note

The companies in which Royal Dutch Shell plc directly and indirectly owns investments are separate entities. In this publication "Shell", "Shell group" and "Royal Dutch Shell" are sometimes used for convenience where references are made to Royal Dutch Shell plc and its subsidiaries in general. Likewise, the words "we", "us" and "our" are also used to refer to subsidiaries in general or to those who work for them. These expressions are also used where no useful purpose is served by identifying the particular company or companies. "Subsidiaries", "Shell subsidiaries" and "Shell companies" as used in this publication refer to companies in which Royal Dutch Shell either directly or indirectly has control, by having either a majority of the voting rights or the right to exercise a controlling influence. The companies in which Shell has significant influence but not control are referred to as "associated companies" or "associates" and companies in which Shell has joint control are referred to as "jointly controlled entities". In this publication, associates and jointly controlled entities are also referred to as "equity-accounted investments". The term "Shell interest" is used for convenience to indicate the direct and/or indirect (for example, through our 34% shareholding in Woodside Petroleum Ltd.) ownership interest held by Shell in a venture, partnership or company, after exclusion of all third-party interest.

This publication contains forward-looking statements concerning the financial condition, results of operations and businesses of Royal Dutch Shell. All statements other than statements of historical fact are, or may be deemed to be, forward-looking statements. Forward-looking statements are statements of future expectations that are based on management's current expectations and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied in these statements. Forward-looking statements include, among other things, statements concerning the potential exposure of Royal Dutch Shell to market risks and statements expressing management's expectations, beliefs, estimates, forecasts, projections and assumptions. These forward-looking statements are identified by their use of terms and phrases such as "anticipate", "believe", "could", "estimate", "expect", "intend", "may", "plan", "objectives", "outlook", "probably", "project", "will", "seek", "target", "risks", "goals", "should" and similar terms and phrases. There are a number of factors that could affect the future operations of Royal Dutch Shell and could cause those results to differ materially from those expressed in the forward-

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