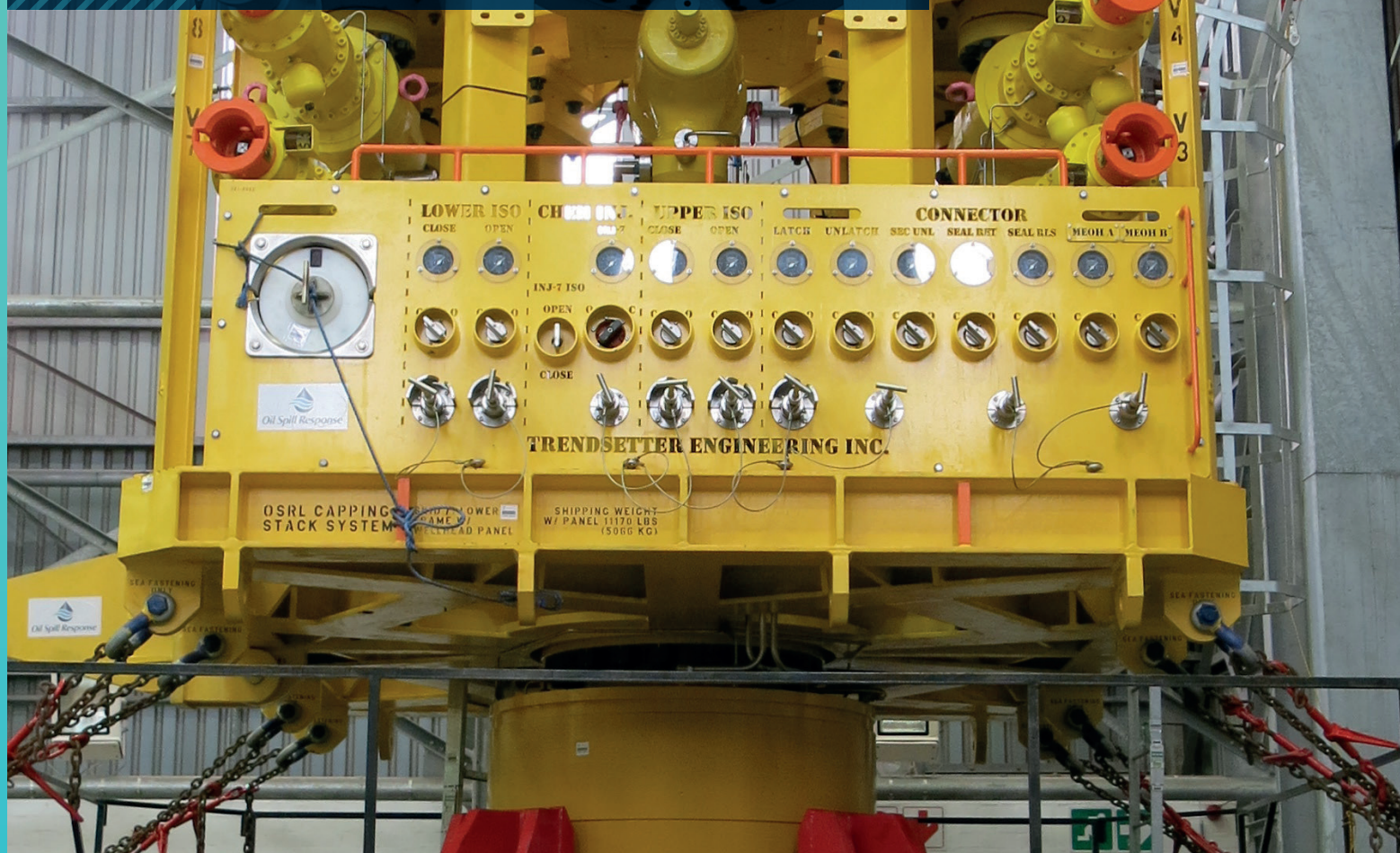


SUBSEA PREPAREDNESS SERVICES

Planning for the complexities of a subsea response





Be ready to respond in the event of an incident.

An effective response requires complex, time-critical logistic planning. In order to mobilise the required assets, equipment supply and mutual aid contracts with specialist organisations must be activated in a timely manner. Deploying equipment, materials, vessels and operations personnel to the well incident site requires extensive pre-planning and regularly held exercises to assure response readiness.

SWIS (Subsea Well Intervention Service) is one of several OSRL supplementary agreements. SWIS membership provides access – internally and through various mutual aid frameworks - to a full suite of equipment, materials, vessels and personnel resources to assist in the development of a comprehensive Source Control Emergency Response Plan (SCERP).

From writing the actual document to initiating contractual mutual aid agreements between the member and experienced third parties of choice, SWIS members have access to the substantial SWIS equipment inventory, the Global Subsea Response Network (GSRN), and various mutual aid and framework agreements with specialised source control organisations and between other SWIS member companies.

With extensive experience in providing oil spill response support for 34+ years, OSRL was selected by the industry as a global partner of choice to provide advanced capping, containment and offset installation equipment to the worldwide energy sector.

All of the OSRL/SWIS equipment – capping, containment and offset installation equipment - is stored and maintained to the highest standards by each of the original manufacturer's engineering and technical personnel. All equipment is stored completely assembled and ready for mobilisation at strategically located bases selected by the industry for vessel availability and quayside access. Capping stack mobilisation via aircraft is available from our Norway and Singapore bases, with the capping stack shipped as a fully-assembled unit, ready to deploy with minor inspection and testing.

All SWIS equipment (excluding flexible reels of the containment system) is air freightable but may require some disassembly.

*Delivery pending in 2019.

HOW PREPARED ARE YOU?



An effective response depends on competent personnel working to a well-developed plan that has been adequately resourced and regularly exercised.

OSRL can help you reach your desired level of response preparedness. Reaching and maintaining that level requires regular verification that your real capability is in line with your perceived risk assessment and current industry best practice principles.

Our subsea preparedness services can ensure that your plans are properly developed, contain all the required elements consistent within your organisation and within any external industry expectations, that you have agreements in place to provide timely access to the necessary equipment, vessels and personnel and finally that your personnel are sufficiently trained and certified against industry accepted best practice emergency response guidelines.

Through open communication with our members, regulators, and other stakeholders, we are in the best position understand the requirements of everyone involved. Our extensive experience and expertise allows us to create customised, targeted, and cost-effective oil spill response solutions that support our member's activities

Global Subsea Response Network (GSRN)

No one response organisation can provide a single end-to-end solution. However, OSRL can help to facilitate one via a network of well-established response organisations that ensures – as far as is practicable – a turnkey solution for our members.

Through the Global Subsea Response Network (GSRN), OSRL's SWIS members are able to leverage the collective expertise of the network's partners. Benefiting from the experience of the world-leading authorities to develop complete SCERPs or any individual element, SWIS membership ensures that plans are aligned with global best practice and all relevant regulatory requirements, regardless of location. Further details are provided on the GSRN information sheet.

“Well Source Control is a generic term for all activities related to the direct intervention of a well that has experienced loss of containment with the intent to halt or control the release of hydrocarbons to the environment”

~IOGP594 report 594 Source Control Emergency Response Planning Guide for Subsea Wells

SUBSEA WELL INTERVENTION SERVICES (SWIS)

MUTUAL AID

In the unlikely event of a subsea well control incident, SWIS membership provides immediate and pre-approved access to a mutual aid framework agreement for additional personnel resources, and assistance from other participating members. Access to additional personnel will be critical, particularly for a sustained response.

GLOBAL LOCATIONS

With equipment designed to satisfy a variety of conditions, and strategically located for swift deployment, SWIS enhances the industry's ability to prepare for, and respond to, the unlikely event of a subsea well control incident, wherever it may occur.



Brazil



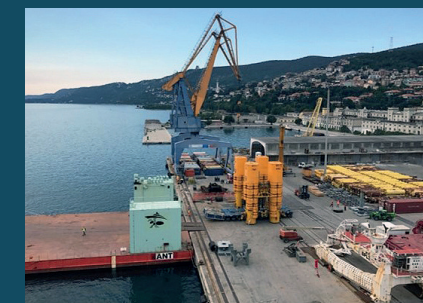
Norway



South Africa



Singapore



Italy

“An effective response is a question of making available the right tools, in the right place, with effective mobilisation plans.”

GLOBAL SUBSEA SOURCE CONTROL SOLUTIONS



SWIS membership provides support to our members to ensure plans are in-place for an efficient and effective response.

As part of our capability, the following equipment is available:

- Two Subsea Incident Response Toolkits (SIRT), which are each an integral part of capping operations. Each SIRT provides equipment that can be used for
 - Survey & Debris Clearance
 - BOP Emergency Intervention
 - Subsea Dispersant Injection kit for application of dispersants directly at the source
- Four fully assembled capping stacks, maintained and strategically located globally
- Three Containment legs to flow hydrocarbons to the surface or divert flow away from the incident well location
- Offset Installation Equipment (OIE) for capping stack installation in shallow water where there is no vertical access to an incident well.

SWIS Capping Stack System (CSS) and Subsea Incident Response Toolkit (SIRT)

SWIS membership provides access to the four capping stack systems, which have been designed by the leading industry experts to provide the means to safely soft shut in the majority of anticipated worst-case flow rates. Members are entitled to mobilise two of the four capping stacks in the event of an incident which ensures redundancy in the service for other members.

OSRL is the custodian of the equipment, storing and maintaining the capping stack systems in four international locations. 15 kpsi capping stacks are located in Brazil and Norway, and 10 kpsi capping stacks are located in Singapore** and South Africa.

The modular designed units can be configured for a variety of subsea interface requirements, and can be transported by land, sea or air. They are designed for use to a maximum depth of 3000 m* and include chemical injection points for direct dispersant injection to mitigate the formation of hydrates. It is suitable for both exploration and production wells, and can safely contain, choke and cap up to 100,000 bpd flow in a controlled manner.



“SWIS membership allows access to advanced equipment for swift global deployment.”

*Currently under review to extend to 3,810 m (12,500 ft).

**The Singapore Capping stack is currently in progress of being upgraded from 10 kpsi to 15 kpsi

SWIS Containment Toolkit

The dedicated containment toolkit is designed to supplement standard industry well test hardware, creating a containment system similar to a temporary subsea production system. It comprises long-lead equipment, not readily available in the industry, and minimises response times by allowing a well operator to draw on existing resources when responding.

This toolkit provides an opportunity to further develop existing subsea well response capabilities and complements members' subscription to the capping stack system. If well shut-in is not possible, the subsea well containment toolkit can be deployed to enable the flow of hydrocarbons from the capping stack to an offloading tanker. The containment toolkit system configurations have been designed to aid rapid deployment of the equipment, with the majority of the equipment packed in intermodal units ready for transport by road, sea or air.

The toolkits are stored in strategic locations around the world to facilitate a timely response. The flexible flowlines and jumpers are stored in three regional sets in Brazil, UK and Singapore. They are consistently maintained and configured ready for transport close to quayside access for mobilisation by sea. All other containment toolkit components are suitable for airfreight and are stored at the original equipment manufacturers' facilities in the United Kingdom, United States and Norway.



Offset Installation Equipment (OIE)

SWISOIE membership allows members access to the Offset Installation Equipment stored in Trieste, Italy at a Saipem shorebase. The OIE was designed for use where vertical access to the incident well is not possible due to a hydrocarbon plume at the surface, usually in shallow water locations (limited to 75-600 m water depth).

The OIE enables responding personnel to remove debris or install capping or related equipment at a safe offset distance from an incident site.

- OIE can be deployed up to 500 m offset from an incident site
- Suitable for use in a working depth range of 75–600 m
- Compatible with OSRL's capping equipment



Oil Spill Prevention and Response Advisory Group (OSPRAG) Capping Stack

Stored and maintained in Aberdeen, this capping service provides members access to the OSPRAG capping stack, along with the proven logistical expertise to mobilise it to the port of departure. The OSPRAG cap is ring fenced to the United Kingdom Continental Shelf (UKCS) only.

The OSPRAG capping device was designed for wells in the UKCS. It features a transition adaptor designed to make the device suitable for the most common BOP and lower marine riser package connector interfaces in the UKCS.

Airfreightable Capping Stacks (AFCS)

Both SWIS capping stacks in Norway and Singapore can be air-freighted on an Antonov AN-124 and transported fully assembled, maintaining pressure integrity and avoiding the risks involved in disassembly and reassembly operations. This configuration significantly reduces the mobilisation time and risks associated with assembly and testing at destination.

Sea transport remains the most likely mobilisation option for the majority of well sites, which is why the four capping stacks are strategically located in key upstream regions, fully assembled at storage bases with direct quayside access. For wells in more remote areas and for members looking to secure drilling licenses in new or remote exploration locations, this is a vital addition to OSRL's subsea capping and containment offering.



With a fleet of 19 AN-124 aircraft available worldwide, this allows members to execute a more reliable and more efficient mobilisation during an incident.

Sea/response Monitoring and Surveillance Technology

OSRL's SWIS members benefit from the provision of Sea/response, a vessel identification software platform which uses its patented technology to identify and monitor vessels of opportunity and equipment.

Sea/response has been tailored to SWIS members' specifications by using the SWRP Capping & Containment Guidelines in depth description of mission planning and vessel of opportunity requirements. This allows the member to identify installation and field support vessels capable of supporting capping and containment, offset installation equipment and relief well drilling - further enhancing operational preparedness envelope globally.



“It’s not just about moving equipment from A to B – it’s about maximising response effectiveness.”

Well Source Control Planning, Exercises and Training

SWIS members can utilise the experience and knowledge of OSRL to help develop complete (or any portion of) Source Control Emergency Response Plans (SCERPs) to ensure that all lines of communication and interfaces between all involved parties are defined. Preparing a SCERP is a major activity, but so is practicing the procedures and protocols outlined in the SCERP. Tabletop exercises, practice drills and full scale mobilisation exercises should be regularly completed to ensure viability of the SCERP and ensure personnel assigned to the tasks are familiar with their required response activities and duties.

SWIS exercises bring together the key personnel likely to be involved in a real incident, helping to develop working relationships, and encouraging effective teamwork. Exercises can be tailored to meet specific requirements, such as to assess for gaps in capabilities or test the scope of supply from the OSRL equipment stockpile with a detailed Response Time Model (RTM). OSRL can also coordinate and combine technical exercises with incident management and command systems.

“Our tailored exercises are specifically designed to test subsea response capabilities and plans.”



PREPAREDNESS THROUGH DEVELOPMENT IN PEOPLE



Bespoke to individual requirements, SWIS training develops an understanding of the SWRP Capping & Containment Guidelines, SWIS documentation and hardware available.

OSRL's client-tailored SWIS training helps to expand key personnel's knowledge, utilising a network of subsea technical specialists. Whether you would like to develop an understanding of the different equipment components and the lines of responsibilities, or gain insight on response planning using the SWRP Capping & Containment Guidelines and the Incident Command System (ICS), OSRL can build a course around your individual needs.

OSRL's bespoke course content can be adapted to meet the individual needs of any member company. It can focus on the strategic aspects of subsea well capping and containment operations, assisting your organisation in creating a global or regional specific capping and containment response plan, or concentrate on more tactical requirements, such as building detailed knowledge of the technical and logistics aspects of the individual SWIS components.



“An effective response depends on competent personnel working to a well-developed plan that has been adequately resourced and regularly exercised.”

SWIS MEMBER BENEFITS

EQUIPMENT

2x Subsea Incident Response Toolkit (SIRT)
4x Capping Stacks (2x10 kpsi and 2x15 kpsi)
1x Containment kit – 3x Containment Kit Legs
1x Offset Installation Equipment

MUTUAL AID

Members can participate in a mutual aid framework benefiting from access to additional personnel, resources and assistance from other participating members.

FLEXIBILITY

Depending on your requirements, you can choose from long-term (five years) or short-term (single well – six months) subscriptions.

FULL COVERAGE

All existing assets are covered under your membership. Various well re-entry activities are also covered without requiring dedicated nomination and associated fees. Where a planned production sidetrack from a qualifying well consists of more than one sidetrack, only one well nomination is required.

NO JOINING FEE

OSRL members are not required to pay joining fees to subscribe to SWIS membership. There are no equipment hire fees post equipment handover, and financial securities are not drawn unless there is an incident and where the capping stack cannot be returned within a prescribed time frame or serviceable condition.

CHOICE OF PROVIDERS

SWIS members have the ability to choose providers through the Global Subsea Response Network with industry partners, providing a comprehensive, end-to-end preparedness solution.

ACCESSIBLE MEMBERSHIP

Joining options are flexible. There are a number of options for providing financial securities.

*Refer to Supplementary Agreements for further details.



CONTACT US

Europe, Middle East & Africa

Southampton

Lower William Street
Southampton
SO14 5QE
United Kingdom
T: +44 (0)23 8033 1551
F: +44 (0)23 8033 1972
E: southampton@oilspillresponse.com

Bahrain

PO Box 54211
Manama
Kingdom of Bahrain
T: +973 1773 0961
F: +973 1773 0058
E: bahrain@oilspillresponse.com

Aberdeen

Suite 3, Second Floor
Ocean Spirit House West
33 Waterloo Quay
Aberdeen
AB11 5BS
United Kingdom
T: +44 (0)1224 72 6859
F: +44 (0)1224 72 6860
E: aberdeen@oilspillresponse.com

Norway

Risavika Havnering 235
Postboks 250
4098 Tananger
Norway
T: +47 95284299
E: norway@oilspillresponse.com

South Africa

Old MossGas Site
1132 Camp Street
Saldanha Bay
SA 7395
South Africa
T: +27 22 714 3211
F: +27 22 714 3626
E: southafrica@oilspillresponse.com

Ghana

OSRL Ghana Ltd
C290/14 Okwei Lane
Dzorwulu
Accra
Ghana
T: +233 30 279 7555
F: +233 30 279 7554
E: osrlghana@oilspillresponse.com

Italy

Saipem S.p.A - Adriaterminal
Porto Franco Vecchio
34143 Trieste
Italy
E: triesteemailList@oilspillresponse.com

Asia Pacific

Singapore

Loyang Offshore Supply Base
25C Loyang Crescent
(Block 503 TOPS Avenue 3)
Singapore 506818
T: +65 6266 1566
F: +65 6266 2312
E: singapore@oilspillresponse.com

Australia

Oil Spill Response PTY LTD
108 St Georges Terrace
#25-09
Perth
WA 6000
Australia
T: +61 8 6557 8552

Americas

Fort Lauderdale

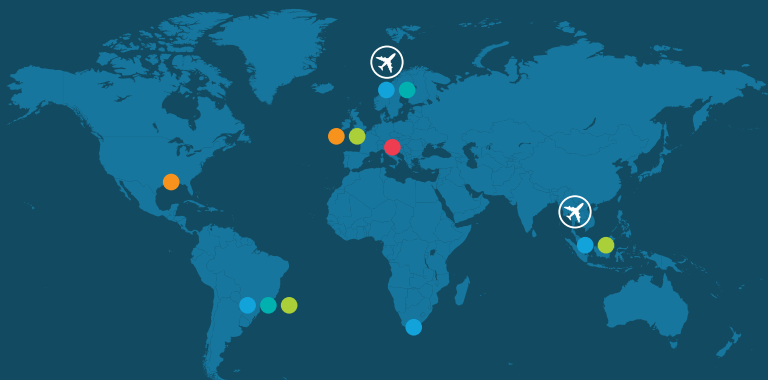
Oil Spill Response (Americas) Limited
2381 Stirling Road
Ft Lauderdale
FL 33312 USA
T: +1 954 983 9880
F: +1 954 987 3001
E: fortlauderdale@oilspillresponse.com

Houston

CityCenter One
800 Town & Country Blvd, Suite 300,
Houston, TX,
77024 USA
T: +1 832 431 3191
F: +1 832 431 3001
E: houston@oilspillresponse.com

Brazil

Porto do Rio de Janeiro - Multi-Rio
Av. Rio de Janeiro, 780, Caju,
Rio de Janeiro City, 20.931-657
CEP 23900-490
T: +55 24 3421 5480
E: brazil@oilspillresponse.com



- Capping Stacks
- ✈ Air Freight – Capping Stack
- Subsea Incident Response Toolkit
- Flexible Flowlines
- Containment – Topsides / Subsea
- Offset Installation Equipment (OIE)

Want to discuss your level of preparedness?

Email us at subseaservices@oilspillresponse.com

www.oilspillresponse.com