



ISCO NEWSLETTER

The Newsletter of the International Spill Response Community
Issue 324, 5 March 2012

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News

WINNER OF THE 1ST ITOPF R&D AWARD IS ANNOUNCED

March 1 - The recipient of the 1st ITOPF R&D Award is to be a consortium of four research institutes led by the Laboratoire des Sciences de L'Environnement Marin (LEMAR) in France, partnered with the University of British Columbia (UBC), Canada; Centre de documentation, de recherche et d'expérimentations sur les pollutions accidentelles des eaux (CEDRE), France; and Consiglio Nazionale delle Ricerche (CNR-IAMC), Italy.

The Award will be used to fund a PhD student who will work with the consortium to study the health and behaviour of fish in the presence of dispersed oil and to provide operational recommendations for using dispersants in coastal waters.

The ITOPF R&D Award Committee met to assess the applications for the Award last week and, while the ranking of the applications was very close indeed, the Committee awarded a higher ranking to this research study, stating that it was innovative, had clear objectives and was very relevant (especially given the renewed focus on the consequences of dispersed oil following the DEEPWATER HORIZON incident).

ITOPF's Managing Director, Dr Karen Purnell, said that 'our shipowners supported the R&D initiative wholeheartedly and would be pleased to hear that the Committee had chosen to provide this opportunity for a student to develop expertise in such an important topic.' <http://www.itopf.com/news-and-events/>

BP REACHES \$7.8BN DEAL OVER DEEPWATER HORIZON OIL SPILL

March 3 - BP says it has reached a \$7.8bn (£4.9bn) deal with the largest group of plaintiffs suing the company over the 2010 Deepwater Horizon oil rig spill.

It will benefit some 100,000 fishermen, local residents and clean-up workers whose livelihoods or health suffered.

The company has not admitted liability and still faces claims from the US and state governments, and drilling firms. *BBC News* [Read more](#)

ITALY: COSTA CONCORDIA UPDATE

March 2 - This afternoon the salvage team completed the discharge of Heavy Fuel Oil, Diesel Oil and Sludge from the Double Bottom Tanks. Weather permitting the crane barge Meloria will now be moved forward in her moorings in between the stabilizer and the large damaged area.

An access hole will be created in the hull to allow the divers to enter the engine room spaces where the settling and service tanks are located.

Once the connections have been installed, the contents will be transferred to the offloading tanker. Thereafter the contents of the sewage tanks will also be pumped out of the ship. *Update from Smit Salvage* [Read more](#)

NEW ZEALAND: RENA UPDATE

March 2 - The heavy weather event forecast to hit the North Island overnight and tomorrow is expected to bring heavy seas to the Bay of Plenty. The forecast is for winds gusting up to 50 knots, and sea swells of over 5m on Saturday. The weather is forecast to ease on Sunday. As a precaution, Svitzer has brought *Smit Borneo* and other support vessels to port. Salvage operations will resume when the conditions improve.

To date, a total of 566 containers have now been removed from *Rena* by Svitzer, and a further 72 recovered from the shore or water by Braemar Howells container recovery teams, bringing the total number of containers now processed ashore to 638.

The Braemar recovery team has put contingency plans in place for the 'weather bomb' forecast to hit this weekend. Operations Manager Claudene Sharp says the storm could agitate containers on the seabed and release more debris which could wash ashore.

The total of oil and oily waste collected by oil spill response teams to date is 1041 tonnes. *Update from Maritime New Zealand* [Read more](#)

USA: OIL SPILL RESPONSE GROUP UNVEILS EXPANDED SYSTEM

March 1 - The [Marine Spill Response Corp.](#), a nonprofit set up to help major oil companies respond to offshore spills, announced that it has completed a major expansion in the Gulf of Mexico. As the massive federal trial over the April 2010 BP oil spill is about to begin, the company used by BP and other oil giants said it had finished its "Deep Blue" program to give Gulf operators more resources to quickly respond to any future spills.

Marine Spill Response Corp. is touting its Deep Blue program as a major improvement. It adds more dedicated spill response and recovery platforms, contracts with vessel operators like Louisiana-based [Edison Chouest Offshore](#) and [Hornbeck Offshore Services](#) to have their ships at the ready, and enhancements like infrared scanners and other technology to help find spilled oil more quickly.

Also, the group announced that it has expanded its capabilities for deploying chemical dispersants to break up spilled oil and developed better oil-burning operations. Its Deep Blue Responder vessel has now been moved to Port Fourchon, La., to be able to get to a deepwater spill more quickly, too.

There are now seven dedicated response vessels positioned within 60 hours of any deepwater Gulf oil lease, and Marine Spill Response Corp. also purchased more than 21,000 feet of boom, the largest such inventory of a private response firm, the firm said. *Nola.com* [Read more](#)

USA: NEW REPORT REVEALS VAST STORES OF ALASKA SHALE OIL AND GAS

February 24 - Calling the North Slope an "unexplored frontier" for shale oil and gas -- the controversial resource that's sparked an energy boom in parts of the Lower 48 -- a first-ever federal assessment says a massive bounty of natural gas and oil can be unlocked from the region's underground rocks.

Using new technology, up to 80 trillion cubic feet of natural gas could be produced from North Slope shale, according to [a fact sheet](#) of the [U.S. Geological Survey report](#), which has not yet been released.

That's enough to supply the natural-gas needs of the entire U.S. for three years at [2010 consumption rates](#). It's also more than double the conventional natural gas reserves said to exist on the North Slope, the largest such resource in the U.S.

Also, the USGS now estimates the slope holds up to 2 billion barrels of shale oil. That would fill the trans-Alaska-pipeline for about a decade at current flow-rates of about 600,000 barrels a day. *Alaska Dispatch* [Read more](#)

USA: SHELL FILES PRE-EMPTIVE CHALLENGE OF ALASKA SPILL PLAN

March 1 - In a move to avoid a last-minute challenge to its Alaska drilling permit, Shell Oil Co. has taken the unusual step of asking the Alaska Federal Court to review its oil spill response plan and give a verdict, pre-empting any legal challenges by NGOs opposed to the project.

The move aims to provide Shell legal cover and get on the offensive against green groups who have delayed many energy projects in North America on grounds of environmental concerns.

On Feb. 17, the U.S. Department of Interior's Bureau of Safety and Environmental Enforcement approved Shell's Oil Spill Response Plan for the Chukchi Sea, where the offshore permits are located.

Given the narrow window of operation that starts in July and ends in October, Shell has taken the legal route to hasten any action from environmental groups, as it goes through the process of securing final permits needed to begin drilling in July .

"This action is taken to avoid a last minute challenge to the plan's approval, by those who have repeatedly challenged prior authorizations," a Shell spokesman said in a statement. *FP Energy* [Read more](#)

USA: OPINION: PREPARING FOR CONFRONTATIONS WITH ENVIRONMENTAL PROTESTORS IN ARCTIC WATERS



Article written by: Craig H. Allen Sr., U.S. Coast Guard Academy

Craig H. Allen Sr. is the Judson Falknor Professor of Law at the University of Washington. For the 2011-2012 academic year he is serving as the Distinguished Visiting Professor of Maritime Studies at the U.S. Coast Guard Academy. The views expressed are the author's alone and do not necessarily reflect the views of the Coast Guard or any other government agency.

On Thursday, February 23rd, Admiral Bob Papp delivered his annual State of the Coast Guard address to a large audience assembled on the Coast Guard Island pier in Alameda, California. Against the backdrop provided by the service's new 418 ft. National Security Cutters, the Commandant highlighted some of the maritime challenges the nation will face in the coming years and how the Coast Guard will respond to them. Those challenges include an increasingly accessible Arctic that beckons to modern-day commercial navigators seeking a shorter Northwest Passage route over North America, cruise ship operators and offshore oil and gas interests.

One challenge the admiral did not mention is the potential threat to maritime safety and the marine environment posed by protestors who might be bringing their "direct action" campaign to the Arctic. While Admiral Papp was delivering his address, Greenpeace protestors led by Lucy Lawless—one time star of the Xena Warrior Princess series—were preparing to board the drill ship Noble Discoverer in New Zealand, in an attempt to stop the ship from sailing for the Alaskan Arctic. At the same time, the Seventeenth Coast Guard District office was publishing proposed regulations that will impose 500 meter safety zones around the Noble Discoverer and the mobile offshore drilling unit (MODU) Kulluk once the vessels arrive in the Chukchi and Beaufort Seas to begin exploratory drilling for Shell. The safety zones serve as a reminder of Greenpeace's 1997 protest activities against the drill rig Glomar Beaufort Sea I. In that earlier incident, Greenpeace members from the Arctic Sunrise attempted to thwart attempts to tow the MODU rig to an ARCO exploratory drilling site in the Beaufort Sea's Camden Bay.

Admiral Papp briefly described his plans to meet the Coast Guard's prevention and response missions in the Arctic this summer by seasonally deploying cutters—including the new national security cutters—together with aircraft and crews, while continuing to define the Coast Guard's need for permanent arctic infrastructure. It remains to be seen whether protestors will in fact carry their direct action campaign to the Beaufort and Chukchi Seas this summer and, if so, whether they will respect the safety zones established by the Coast Guard. Should the protests materialize and threaten the drilling vessels' safety by entering the safety zones, the Coast Guard will likely be called upon to divert its resources from other critical arctic prevention and response missions to enforce the safety regulations. From *The Maritime Executive* [Read the complete article](#)

JAPAN: SCIENTISTS: FAR MORE CESIUM RELEASED THAN PREVIOUSLY BELIEVED

February 29 - A mind-boggling 40,000 trillion becquerels of radioactive cesium, or twice the amount previously thought, may have spewed from the crippled Fukushima No. 1 nuclear power plant after the March 11 disaster, scientists say.

Michio Aoyama, a senior researcher at the Meteorological Research Institute, released the finding at a scientific symposium in Tsukuba, Ibaraki Prefecture, on Feb. 28.

The figure, which represents about 20 percent of the discharge during the 1986 Chernobyl nuclear disaster, is twice as large as previous estimates by research institutions both in Japan and overseas.



Photo: Workers begin pouring cement onto the seabed at the Fukushima No. 1 nuclear power plant on Feb. 28. (Eiji Hori)

It was calculated on the basis of radioactive content of seawater sampled at 79 locations in the north Pacific and is thought to more accurately reflect reality than previous simulation results.

Scientists believe that around 30 percent of the radioactive substances discharged during the crisis ended up on land, while the rest fell on the sea.

This makes it especially difficult to accurately evaluate the total amount of radioactive materials released. Thus, seaborne data is essential to the process.

The scientists measured cesium concentrations in seawater as of April and May last year. They then used a model of diffusion in the atmosphere and the oceans to evaluate the total amount of cesium released. The calculation produced estimates of 30-40 quadrillion becquerels. The researchers also estimated that 24-30 quadrillion becquerels of that cesium reached the sea. *The Asahi Shimbun* [Read more](#)

NIGERIA: MINISTER DECRIES ENVIRONMENTAL POLLUTION

February 27 - The Minister of Environment, Hajija Hadiza Ibrahim Mailafia, has lamented over the environmental pollution caused by wastes from the Kaduna Refinery and Petrochemical Company (KRPC).

Speaking during her visit to the sludge pit at KRPC, the minister noted that the pit had been an unintended reservoir of hazardous liquid waste from the refinery "over the past 30 years thus causing adverse environmental consequences on the soil, surface and underground water, vegetation as well as lives of the surrounding communities."

During her visit, the minister officially handed the project site over to the contractor, Messrs Osprey Investment Group Ltd and the consultant, Technology Acquisition and Development Company Ltd (TADCO). The project duration, she said, was three weeks. *All Africa* [Read more](#)

USA & CANADA: MORE ON THE KEYSTONE XL PIPELINE

Ranchers' land becomes Ground Zero in energy fight

February 25 - Part one of a two part series on the Keystone XL Pipeline - Gas prices are spiking once again; the cost of a gallon of regular unleaded is about 12 percent higher than it was a year ago. But winter typically isn't the time for a rise in gas prices. Demand for gasoline is at a 14-year low and domestic oil production is at an eight-year high.

Some analysts link the increase in gas prices to the tensions in Iran and speculators on Wall Street. Others point to policy decisions limiting drilling in environmentally sensitive areas, as well as President Obama's decision to deny a permit for a massive oil pipeline called Keystone XL.

The proposed pipeline would travel 1,800 miles from Alberta, Canada, all the way down to the Gulf Coast. The controversy over its impact — environmentally, politically and economically — makes it prime election issue.

TransCanada, the company behind the proposal, already operates a massive pipeline that has been pumping crude oil from Canadian tar sands. The pipeline ends in the small town of Cushing, Okla., where the oil is stored in massive tanks scattered across the town. *NPR News* [Read more](#)

What Happens If The Keystone XL Pipeline Isn't Built?

February 26 - Part two of a two-part series on the Keystone XL pipeline - Gas isn't like a rare bottle of wine that fetches a high price just because it's rare. But at the same time, no one can agree what drives gas prices. Demand for gasoline in the U.S. is at its lowest point in more than a decade; domestic oil production is at an eight-year high.

There's no simple explanation for why most people are spending \$3.60 for a gallon of regular, unleaded gas. But many critics of

News (continued)

President Obama's energy policy point to one possible reason: The U.S. isn't fully tapping into the potential supply from Canada and, specifically, a place called the Athabasca Tar Sands in Alberta.

There are consequences if the Keystone XL isn't built, but there are also issues if it never becomes a reality.

"If Canada can't produce this oil, we'll have higher oil prices than we otherwise would," says Michael Levi, senior fellow for energy at the Council on Foreign Relations. *NPR News* [Read more](#)

TransCanada to push ahead with part of Keystone pipeline

February 27 - The Canadian firm hoping to build a massive oil pipeline from Canada to the U.S. gulf coast announced Monday that it will push ahead with plans to construct the segment running from Cushing, Okla., to Port Arthur, Texas, and will apply for a federal permit for the cross-border section of the pipeline.

The move by [TransCanada](#) would alleviate the glut of oil at Cushing, a major terminal, and address one of the main reasons for building the controversial [Keystone XL pipeline](#). The \$2.3 billion pipeline will transport 700,000 barrels per day starting in mid- to late-2013. Plans for the segment of pipeline crossing the U.S.-Canada border would come "in the near future" the company said.

The Washington Post [Read more](#) [Related article in The Guardian](#)

USA: FRACKING RULES TO INCLUDE SAFETY CERTIFICATION, INTERIOR SECRETARY KEN SALAZAR SAYS



Picture: Ken Salazar: The Interior secretary tells a hearing that the new rules are meant to lower the risk of water supplies being tainted.

March 3 - The Obama administration will require energy companies to certify that they are not endangering local water supplies when using hydraulic fracturing to extract natural gas and oil, the Interior Department says.

Interior Secretary Ken Salazar told a congressional hearing Wednesday that his agency is working on additional regulations that will lower the risk of water supplies being tainted during hydraulic fracturing, or fracking.

The drilling technique involves injecting millions of gallons of water, chemicals and sand into subterranean rock formations to free energy resources.

The industry certificates will strengthen the oversight of the Bureau of Land Management, which is sending inspectors to drilling sites to ensure proper well design and waste-water management, David Hayes, Salazar's deputy, told a subcommittee of the Senate Appropriations panel in Washington, D.C.

"We are prioritizing inspections to deal with potential high-risk issues," Hayes said. "That includes ensuring that the well construction is done with the appropriate integrity." The proposed rule "will require an additional certification by the operators to ensure that they are using the appropriate cementing," he said.

As natural gas production in states including Texas, Ohio, Pennsylvania and Wyoming gets closer to homes and farms, residents are calling for more stringent regulation to protect their air and water. *Tulsa World* [Read more](#)

FINAL RESTORATION PLAN COMPLETED FOR COSCO BUSAN OIL SPILL

State and federal trustee agencies have released the Cosco Busan Oil Spill Final Damage Assessment and Restoration Plan.

The document summarizes the injuries to wildlife, habitat, and recreational uses from the oil spill that occurred on Nov. 7, 2007. It also describes a number of restoration projects that will be implemented to compensate for injuries from the spill.

In accordance with the Oil Pollution Act, the public commented on a draft version of the Restoration Plan in fall 2011. Since that time, the federal and state government trustee agencies have considered the comments, revised the plan, and finalized it, paving the way to begin implementation of the projects.

While a legal settlement was announced in September, 2011, the case formally closed on Jan. 27, 2012, when Federal District Court Judge Samuel Conti entered the consent decree regarding the settlement.

Changes between the draft and final Restoration Plans were minor, primarily serving to include more restoration project options and to allow greater flexibility in the use of the funds. *The Maritime Executive* [Read more](#)



In this issue of the ISCO Newsletter we are printing No. 66 in a series of articles contributed by Dr Douglas Cormack.

Dr Douglas Cormack is an Honorary Member of ISCO. As the former Chief Scientist at the British Government's Marine Pollution Control Unit and head of the UK's first government agency, the Warren Spring Laboratory, Douglas is a well known and highly respected figure in the spill response community. He is the Chairman and a founder member of the [International Spill Accreditation Association](#)

CHAPTER 66: KNOWLEDGE OF REMOTE SENSING AND IDENTIFICATION SAMPLING

In the meantime, WSL arranged to measure slick thicknesses of trial slicks of Kuwait crude oil and a 40% water content Ekofisk emulsion for comparison with images obtained by an IR line scanner (IRLS) in the 800-1400nm spectral band and a 50kw Q and Horizontally polarised 8.5mm side-looking radar (SLAR) operated from an aircraft of the Royal Signals and Radar Establishment (RSRE). Layer thickness was measured by the WSL method of absorbing the pollutant onto a 200 x 200 x 8 mm pad attached to a backing plate and handle by lightly contacting the pad with surface layer for subsequent extraction with chloroform and spectrometric analysis, while water contents were determined by the Dean and Stark method. The quantity of oil on the slick area of 200 x 200mm corrected for water content gave the actual thickness of the oil and water-in-oil emulsion for that particular area while a Decca navigator on the sampling boat located each individual sampling point within the slick which was similarly located. The efficiency of pad absorption as measured in the laboratory was found to vary with thickness and on this basis correction factors were applied which gave an accuracy of $\pm 50\%$.

The above approach gave the following summarised results after a two day programme flying at different altitudes and at different time intervals after the oil and emulsion discharges:

- both the Q and H polarised SLAR and the UV/IRLS detected oil and emulsion;
- the SLAR provided uniform low contrast imagery out to the lowest threshold thickness of the three, the UVLS provided uniform low contrast with a higher threshold thickness within the uniform SLAR image, while the IRLS provided thickness contrast within the UV image;
- the IRLS showed regions brighter (warmer) and darker (cooler) than the surrounding water;
- the Decca positioning showed these regions to be respectively thicker and thinner;
- the Decca positioning showed the threshold thickness for the darker (cooler) IRLS image to be of the order of 10 μ m (probably 25-50 μ m) that of the brighter (warmer) IRLS image to be inclusive of Phase II thicknesses of the order of 0.1mm, that for UVLS to be of the order of 0.1 μ m (naked-eye, 0.02-0.05 μ m), and that of the SLAR to be of the order of 100nm;
- adoption of 1000 μ m (1mm) for the thickness of the warmer regions and of 100 μ m (0.1mm) for the cooler and multiplying by their respective areas gave agreement with the total amount known to present to within an order of magnitude;
- the actual amount present divided by the area as measured by the SLAR gives an overall mean thickness of 15-20 μ m (c.f. Table in article 62).

Thus, it can be concluded that while the SLAR technique can detect pollutant slicks and determine their overall area out to Phase III edge thicknesses down to the order of magnitude of 100nm, it cannot differentiate thicknesses within it; that while the UVLS has a thickness threshold of detection of the order of 0.1 μ m and while the IRLS technique can identify the warmer/thicker regions of 50-100 μ m, say 0.1mm for optimisation of dispersant and mechanical recovery response to shipping casualty and oil production releases and to dismiss from such response the thinner/cooler regions which further diminish to the even thinner though still detectable regions of the SLAR image, none of these techniques either separately or in combination can quantify the amounts of oil present in operational discharges from ships to better than one to two orders of magnitude; and that with the cooler and warmer thresholds of the IRLS images being subject to varying thermal conditions in general; and with the UVLS image providing even less thickness data than the naked-eye, remote sensing alone is unlikely to secure convictions for operational discharging beyond legal limits unless the limit is zero, while in areas permitting discharges above zero, remote sensing by the above means is only capable of detecting ships for the monitoring of general discharge practice.

As to oil characterisation by remote sensing, laboratory investigation showed that active fluorescence techniques could produce spectral differences for light and heavy fuel oils and for crude oil, though crude oils could not be usefully differentiated. However, when an unknown oil is caused to fluoresce by reception of a short pulse of ultraviolet radiation from a nitrogen source operating in the spectral band 380-680nm, and the fluorescence is passed to a 16 channel spectrometer of channel width 20nm, the resulting spectrum can be compared with a previously prepared library of known oil spectra to effect an identification to this limited extent. Using this approach airborne instrumentation has differentiated rhodamine dye, Murban and La Rosa crude oil, and a ship, while comparison of the emitted and the returned signal intensities has differentiated slick thicknesses in a lower range than those accessible by the infrared technique. Thus, incorporation of a correlation algorithm would enable differentiation of the above limited type in real time aboard the aircraft.

By 1993 the German Ministry of Transport had incorporated a laser fluorosensor with the then standard UV/IRLS and SLAR together with a microwave radiometer in a Dornier DO228-212, this particular radiometer having been the first

of its kind to meet specified operational requirements, was a conical scanner providing a swath width of 150m at an altitude of 300m. Microwave radiometry has the potential to provide more quantified data on layer thickness than is available from IRLS

1 *The Rational Trinity: Imagination, Belief and Knowledge*, D.Cormack, Bright Pen 2010 available at www.authorsonline.co.uk

2 *Response to Oil and Chemical Marine Pollution*, D. Cormack, Applied Science Publishers, 1983.

3 *Response to Marine Oil Pollution - Review and Assessment*, Douglas Cormack, Kluwer Academic Publishers, 1999.

Special series

OIL SPILL REMOTE SENSING: CHAPTER 8



Continuing a short series of articles on Oil Spill Remote Sensing contributed by Dr Merv Fingas of Spill Science, Edmonton, Alberta, Canada T6W 1J6 fingasmerv@shaw.ca

Merv Fingas MSc PhD worked for more than 35 years in the field of oil spill technology at Environment Canada's Environmental Technology Center in Ottawa, Ontario. As head of the Emergencies Science Division at the Centre, he conducted and managed research and development projects. He is currently working independently in Alberta. Dr Fingas is the Member of ISCO Council for Canada.

This is the 7th of a series of articles which will go into the remote sensing of oil spills. This series will cover oil spill remote sensing step by step and will present the latest in knowledge on the topic.

Microwave sensors

Microwave Radiometers

Microwave radiometers detect the presence of an oil film on water by measuring the reflective interference pattern excited by the radiation from free space. The apparent emissivity factor of water is 0.4 compared to 0.8 for oil.¹⁹ A passive microwave radiometer can detect this difference in emissivity and could therefore be used to detect oil. In addition, as the signal changes with thickness, in theory, the device could be used to measure thickness. This detection method has not been very successful in the field, however, as several environmental and oil-specific parameters must be known. In addition, the signal return is dependent on oil thickness but in a cyclical fashion. A given signal strength can imply any one of several film thicknesses within a given slick. Microwave energy emission is greatest when the effective thickness of the oil equals an odd multiple of one quarter of the wavelength of the observed energy. Biogenic materials also interfere and the signal-to-noise ratio is low. In addition, it is difficult to achieve high spatial resolution (might need resolution in metres rather than the typical tens of metres for a radiometer).

The Swedish Space Corporation has carried out work with different systems, including a dual band, 22.4- and 31-GHz device, and a single band 37-GHz device.³ Skou, Sorensen and Poulson describe a 2-channel device operating at 37.5 and 10.7 GHz.²⁰ Mussetto and co-workers at TRW described the tests of 44-94-GHz and 94-154-GHz, 2-channel devices over oil slicks.³ TRW showed that correlation with slick thickness is poor and suggest that factors other than thickness also change surface brightness. They suggest that a single-channel device might be useful as an all-weather, relative-thickness instrument. Tests of single-channel devices over oil slicks have also been described in the literature, specifically a 36-GHz and a 90-GHz device.³ A recent method of microwave radiometry has been developed in which the polarization contrasts at two orthogonal polarizations are measured in an attempt to measure oil slick thickness.³ A series of frequency-scanning radiometers have been built and appear to have overcome the difficulties with the cyclical behaviour.²¹ Currently, there is a five-channel system on the market.

In summary, passive microwave radiometers may have potential as all-weather oil sensors. Their potential as a reliable device for measuring slick thickness, however, is a topic of discussion and certainly would be limited to well-calibrated devices having multiple frequencies.

Microwave Scatterometers

A microwave scatterometer is a device that measures the scattering of radar energy by a target. One radar scatterometer was flown over several oil slicks and used a low-power transmitter operating in the Ku band (13.3 GHz).³ The scatterometer detected the oil, but discrimination was poor. The 'Heliscat', a device with five frequencies has been used to investigate capillary wave damping.²² The advantage of a microwave scatterometer is that it has an aerial coverage similar to optical sensors and it can look at several incident angles. The main disadvantages include the lack of discrimination for oil and the lack of imaging capability.

Surface wave radars

It is possible to send radio waves along the sea using high frequency. The conductivity of the sea acts as a wave guide. These radars can be used to detect ships as far out as 500 km.³ Since these are surface wave phenomena only targets above the surface are detected, thus slicks may not be detected by this technique. Modeling of the technique does not show whether there is potential for oil detection by this method or not.³ There are several types of these, one type is used to measure ocean surface currents.²³

Special series (continued)

Interferometric radar

Radars can be used to measure height, currents and other surface elevation phenomena using interferometric techniques. Some radar systems on aircraft are fitted for this application such as the Government of Canada Convair 580. This can also be carried out in space using two satellites traveling in tandem. One research group employed the tandem satellite pairs of ERS-2 and ENVISAT to carry out such work but there are no reports on interferometric use on oil spills.³

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People in the news

NEW DIRECTORS JOIN BOARD OF UK SPILL ASSOCIATION

Three new Directors joined the UKSpill Association Board at the Annual Members Meeting in London on the 10th January - Jon Burton, Technical Director of the RAW Group, Richard Proctor, Managing Director of Darcy Spillcare, and Andrew Nash, Business Development Manager at Desmi Ro Clean Ltd.

MAERSK'S GRANDSON TAKES OVER AS CEO OF SVITZER



March 2 - Danish industrial conglomerate A.P. Moller-Maersk A/S (MAERSK-B.KO) said Wednesday it has appointed Robert Maersk Ugglå as the new head of its tugboat subsidiary Svitzer.

The 33-year-old Ugglå, who is the grandson of the family-controlled group's unrivalled patriarch, Maersk Mc-Kinney Moller, is currently chief executive of the group's Swedish tanker company Brostroem.

The move is a step up for Ugglå, who has long been considered the likely successor of 98-year old Mc-Kinney Moller, the son of the founder of Maersk. Mc-Kinney Moller has long withdrawn from the daily operations of the group, but still retains overall control through the A.P. Moller and Chastine Mc-Kinney Moller Foundation, which owns the majority of Maersk's issued A stocks. [Read more](#)

Publications

IMO: FEBRUARY 2012 ISSUE OF IMO PUBLISHING NEWSLETTER

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US EPA PUBLICATIONS

Techdirect, March 1, 2012 - TechDirect's purpose is to identify new technical, policy and guidance resources related to the assessment and remediation of contaminated soil, sediments and ground water. [Download](#)

Technology Innovation News Survey - The January 1-31, 2012 *Technology Innovation News Survey* has been posted to the CLU-IN web site. The *Survey* contains market/commercialization information; reports on demonstrations, feasibility studies and research; and other news relevant to the hazardous waste community interested in technology development.

The latest survey is available at: <http://www.clu-in.org/products/tins/>

UK: REMINDER - ISCO AGM AT INTERSPILL 2012

The ISCO 2012 Annual General Meeting will take place at 5.30 pm on Wednesday 14 March 2012 in the Speakers' Room, adjacent to the Interspill Conference Rooms at Excel, London.

This year our Guest Speaker will be Dr Mervyn Fingas, ISCO Member of Council for Canada. Dr Fingas was formerly Head of Emergencies Science Division at Environment Canada's Environmental Technology Center in Ottawa, Ontario.

His illustrated talk will be on "Burning the Unburnable".

Members are requested to attend promptly in order that the Meeting can be concluded in good time to allow attendees to join up with friends at the various corporate hospitality events taking place later in the evening. Non-members are also invited to come and will be made welcome. Light refreshments will be served.

UK: LAUNCH PARTY TO CELEBRATE ITOPF'S NEW SERIES OF TECHNICAL INFORMATION PAPERS

ITOPF is delighted to announce the launch of a new series of 17 Technical Information Papers (TIPs), the culmination of effort by ITOPF staff over the past year. To help us celebrate, we would like to invite you to a launch party at ITOPF's office, near Old Street, London, on Monday 12th March 2012, from 6pm – 9pm. Canapés, drinks and a complimentary set of TIPs will be on offer, see [flyer](#). Please complete the [registration form](#) if you would like to attend so that we can monitor numbers.

AUSTRALIA: HAZMAT 2012 – VICTORIA. 9-10 MAY, 2012

A two day conference on the latest directions and compliance requirements for chemical management, hazardous substances and dangerous goods to help achieve sustainable outcomes

HazMat 2012 is the key hazardous materials, chemical management and dangerous goods conference and exhibition in Australia. This year will see a focus on protecting the community and how the industry is addressing environmental and public concerns of safety. [More info](#)

FRANCE: MARINE COASTAL WATER POLLUTION WORKSHOP – LA ROCHELLE, 5-6 APRIL 2012

Efficient solutions to protect coasts against marine pollutions require synergies coming from the combination of various expertise and competences. This 4th workshop aims to identify synergies which can be found between domains like mathematics, numerical modelling, mechanics, biology, economy and laws...

Since last summer 2011, three maritime hazards involving cargos resulted in maritime pollution around La Rochelle.

The workshop addresses all stakeholders involved in prevention and fights against such pollution: maritime administration, local authorities, researchers, civil society...

For the conference and exhibition Frédéric Muttin Phone +33 5 46 45 80 19 Mobile +33 6 86 95 70 38 frederic.muttin@eigsi.fr
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FRANCE: CEDRE INFORMATION DAY - SPILL AND ILLEGAL DISCHARGE DETECTION

INHESJ, Saint-Denis-La-Plaine. 20 March, 2012 [Download the programme](#)

SINGAPORE: INTERTANKO ANNUAL EVENT: 9-11 MAY, 2012

Registrations for this year's Annual Event are now open. We sincerely hope that as many of you as possible will join us in Singapore for this year's main tanker industry gathering – a place to see old friends and make useful new contacts, and to catch up on what makes our industry tick.

Despite rising costs for the hosting of such events year on year, we have been able to control costs and are pleased to advise you that the cost to Members will remain the same as last year, with special discounts for those booking early.

Should you require any further information, please contact Alexandra Hardman via Alexandra.hardman@intertanko.com
For further information on registrations, please contact Phil Blanshard phillip.blanshard@intertanko.com

Events (continued)

USA: AMERICAN MARITIME SALVAGE & CASUALTY RESPONSE – NEW SPEAKERS ANNOUNCED

Miami, June 27-28, 2012 - New Speakers Announced: George Tsavlis, *CEO Tsavlis Salvage*; Robert Tyson *Operational Manager, Svitzer Salvage*; Grant Hunter, *Chief Officer Legal and Contractual Affairs BIMCO*.

[Download draft agenda](#) [Register online](#)

Training

RESPIRATORY PROTECTIVE EQUIPMENT (RPE)

RPE (respirators and breathing apparatus) are used in many workplaces to protect workers when working with hazardous substances, such as gases, solvents, powdered chemicals and sprays. RPE comes with various forms of facepiece, such as helmets, visors, hoods or masks.

It should only be used as the last ultimate option after you have taken other reasonable steps to control the exposure, and improve air quality and ventilation in your work area. Your justification for using RPE should be clear in your risk assessment, which needs to be written if you have five or more employees.

If you use RPE, or are responsible for the selection and use of RPE in your company, this page will provide you with information and guidance on how, when and why to select the correct equipment.

You can use the RPE Selector Tool to determine what kind of equipment your workers will need for a hazardous substance, task and work area involved.

Before using the tool, we recommend watching the Clean Air? Take Care! campaign toolbox talk '[Helping you to correctly select and use respirators](#)', which provides a summary on selection and use of RPE at work.

[More information and many useful quick links](#) [RPE Selector Tool \(worked example\)](#) [Source: NHS – Health Scotland]

BEST PRACTICES FOR GROUNDWATER DATA MANAGEMENT FOCUS OF NGWA WEBINAR

The "Life Cycle of Groundwater Data — From Field to Lab to Electronic Data Deliverable to Report" Webinar will be hosted by the National Ground Water Association at 2 p.m. ET on April 25, 2012. This hour-long presentation focuses on best practices for managing the groundwater data central to the success of most environmental projects. Groundwater analytical data progress through a "life cycle" with several stages from sample collection and analysis to validation and reporting. Webinar attendees will learn how to best handle and manage this data from start to finish. [More info](#)

UK: SEMINARS ON CHLORINATED SOLVENT REMEDIATION

Regenesis would like to invite you to a complimentary, technical seminar that will cover basic chemistries, applications, costing and design methods for *in situ* bioremediation of chlorinated solvents in groundwater. These events are made possible by Regenesis and are complimentary. A continental breakfast and lunch will be served. Each seminar will begin at 09:00 and end at 14:00

TOPICS TO BE COVERED INCLUDE:

- Introduction and background to chlorinated solvent contamination and remediation
- Technology Basics – how does it work and where does it fit in?
- Technology Costs – what factors influence price and performance?
- Technology Usage – selected UK examples
- Chemistry, theory and field application methods of the Regenesis product set – the most widely-used remediation products in the world: - (focus on the chlorinated solvent sub-set Hydrogen Release Compound (HRC[®]), HRC X[®], & 3-D Microemulsion[®])

DATES, LOCATIONS AND REGISTRATION: **[NEWBURY](#)**: Regency Park Hotel, Bowling Green Road, Thatcham, RG18 3RP Date: 21st March 2012 ■ **[CARDIFF](#)**: Novotel Cardiff Centre, Schooner Way, Atlantic Wharf, Cardiff, CF10 4RT Date: 18th April 2012 ■ **[BIRMINGHAM](#)**: Sustainability Live 2012, Birmingham, B40 1NT Date: 23rd May 2012 ■ **[MAIDSTONE](#)**: Hilton Maidstone, Bearsted Road, Weaving, ME14 5AA Date: 27th June 2012 ■ **[SHEFFIELD](#)**: Tankersley Manor Hotel, Church Lane, Tankersley, S75 3DQ Date: 11th July 2012

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