ISCO NEWSLETTER

The Newsletter of the International Spill Response Community

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News

IMO WORKING GROUP ON THE EVALUATION OF SAFETY AND POLLUTION HAZARDS

[Excerpt from report received from ISCO Industry Partner, INTERTANKO]

October 26 - INTERTANKO participated in the 18th Session of the IMO Working Group on the Evaluation of Safety and Pollution Hazards (ESPH 18) this week, represented by INTERTANKO's Senior Manager, Vetting & Chemical, Ajay Gour.

The meeting was chaired by David MacRae of the UK and was attended by delegations from 18 countries (Argentina, Belgium, Finland, France, Germany, Greece, Japan, Liberia, Marshall Islands, Netherlands, Nigeria, Norway, Singapore, Spain, Sweden, South Africa, United Kingdom, United States) and eight non-governmental organisations (International Association of Classification Societies (IACS), International Chamber of Shipping (ICS), International Association of Independent Tanker Owners (INTERTANKO), Dangerous Goods Advisory Council (DGAC), International Association of Ports and Harbours (IAPH), International Parcel Tankers Assoc (IPTA), European Chemical Industry Council (CEFIC), Oil Companies International Marine Forum (OCIMF)).

Agenda items discussed included:

The evaluation of new products and new cleaning additives
ESPH evaluated and approved seven new products for inclusion in List 1 (All Countries, No Expiry date) of the MEPC.2/Circ. Some of these products were approved with minor corrections to their submissions. The preliminary list of these new products that were evaluated can be accessed here.

The Group also considered 25 cleaning additives which had been presented for evaluation. All 25 cleaning additives met the criteria outlined in MEPC.1/Circ.590 and these chemicals can be used as of now.

Review of MEPC.2/Circular – Provisional classification of liquid substances transported in bulk and other related matters
New Mixtures for entry into List 3 of the MEPC.2/Circ were reviewed by ESPH. As this review was of confidential Mixture information, it was conducted only by member states. Non-governmental attendees were asked to leave the meeting during this review. The final results were later shared with all attendees. A preliminary list of these new mixtures that were evaluated can be accessed here.

News (continued)

Review of MEPC.2/Circ.17 on the Provisional Classification of Liquid Substances Transported in Bulk – list of proposed changes to MEPC.2/Circ.17
ESPH undertook a review of a draft version of MEPC.2/Circ.18 which is scheduled to be published on 17 December 2012.

Consideration of the outcome of the most recent session of GESAMP/EHS
Dr Tim Bowman, Chairman of the Group of Experts on the Scientific Aspects of Marine Environmental Protection's (GESAMP) Working Group on the Evaluation of the Hazards of Harmful Substances Carries by Ships (GESAMP/EHS) could not attend the meeting of ESPH-18. The Secretariat (Ken McDonald) reviewed the report of GESAMP (BLG.1-Circ.34) and noted that 9 new products were reviewed at the GESAMP meeting in June 2012 which were added to the EHS list.

The foregoing is only a part of the Working Group Report. Read the complete report.

News (spill incidents)

SLOVAKIA: THREE KILOMETRE LONG OIL SPILL HAS CONTAMINATED THE DANUBE RIVER

October 23 - A three-kilometre long oil spill was discovered on the Danube River in Slovakia on Monday, October 22, the TASR newswire learnt on the same day. Around two dozen fire fighters were despatched to tackle the spill in order to prevent the adjacent river system from being contaminated. According to spokesman of the Slovak Environment Inspectorate Michal Štefánek, the oil spill was most likely caused by a cargo ship. Zoltán Szálay, director of the State Navigation Authority in Bratislava, told TASR that the authority has inspected several ships, but has not found the culprit yet. *The Slovak Spectator* Source article

USA: FUEL OIL SPILL IN DES MOINES RIVER

October 18 - A faulty generator on top of Hy-Vee hall caused more than 2,000 gallons of diesel fuel to pour into the Des Moines River Thursday morning. What we do know so far is a generator on the roof of Hy-Vee Hall backed up, causing the diesel fuel to overflow, flood the roof, get into the storm system and then make its way into the river. Approximately 2,500 gallons made its way into the water system before it was controlled. *ABC5 News* Read more [Thanks to Don Johnson of ISCO Industry Partner, DG & Hazmat Group]

CANADA: THOUSANDS OF BARRELS OF OIL OOZE NATURALLY INTO NUNAVUT WATERS

This RADARSAT-1 image taken in October 2005 shows a sea surface slick near Scott Inlet. (IMAGE COURTESY OF THE GSC)

October 18 - Thousands of barrels of thick, black, toxic crude oil are spewing into Nunavut's waters today. Satellite radar imagery has detected a number of oil slicks off northeastern Baffin Island — and some have even been photographed by scientists.

The largest slicks cover more than 250 square kilometres, with at least 50,000 barrels of oil dancing on the surface of the water. That's what Dr. Gordon Oakey, a marine geophysicist for the Geological Survey of Canada, said Oct. 17 at the Nunavut Petroleum Workshop in Iqaluit. Geologists don't know whether this is due to a constant seep of oil from the sea-floor, or from once-in-a-while seismic activity that pushes oil up from inside the earth's crust beneath the seafloor and into the ocean. *Nunantsiaq News* Read more [Thanks to Don Johnson of ISCO Industry Partner, DG & Hazmat Group]

MALTA: TRANSPORT MALTA INVESTIGATING OIL SPILL AT BIRZEBBUGA

October 24 - Transport Malta officials have initiated an investigation into an oil spill at St George's Bay in Birzebbuga.

The Authority's personnel are currently investigating the exact cause of the slick, TM said in a statement.

"TM has taken the necessary steps to clean up the bay by engaging a local oil spill response contractor specialised in the handling of such incidents". *Malta Today* Read more

News (general)

NAMIBIA: AFRICA BRAINSTORMS OVER OIL SPILLS

October 23 - Representatives from 22 African countries are meeting in Walvis Bay for an oil spill incident response conference – the first in Namibia.

The Global Initiative for West, Central and Southern Africa (GIWACAF) workshop ends tomorrow and this year's theme is 'Toward Efficient Cooperation for Oil Spill Preparedness and Response'.

GIWACAF is a partnership between the International Marine Organisation (IMO) and the International Petroleum Industry Environmental Conservation Association (IPIECA), the global oil and gas industry's association for environmental and social issues.

The partnership aims to strengthen the oil spill preparedness and response capability of its 22 members through the establishment of local partnerships between the oil industries and the national authorities in charge of cleaning up oil spills.

The Deputy Minister of Works and Transport, Dr Samuel Ankama, said Namibia is reforming its national oil spill response system to address the shortcomings that have been identified during national review and testing sessions. *The Namibian* Read more

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NIGERIA: LATEST NEWS REPORTS

NOSDRA partners groups on oil spill management

October 24 - The National Oil Spill Detection and Response Agency (NOSDRA), has sought for more support and collaboration from the United Nations Development Programme (UNDP) to enable it realise its mandate in the area of oil spill management in the country.

This is coming as the Environmental Management Association of Nigeria (EMAN) also expressed its willingness to enter into working relationship with NOSDRA to foster an environmental friendly oil and gas industry.

The Director-General/Chief Executive of NOSDRA, Sir Peter Idabor, made this request when the Deputy-Country Representative (Programme) of the UNDP in Nigeria, Mr. Jan Thomas Hiemstra, paid him a courtesy visit in Abuja. *The Guardian* Read more

Senate expresses worries over oil spills • Seeks compensation for host communities

October 25 - The Senate has set machinery in motion to enforce compensation for host communities affected by the growing and devastating effect of oil spills across the country,

Already, a proposed bill to review the National Oil Spill Dictation and Response Agency (NOSDRA) Act of 2006 is before the National Assembly .

The bill, when it becomes law, is intended "to help reduce poverty and the suffering of our people and bequeath to them a more livable environment" and significantly help put a stop to the unwholesome environmental practices that have made oil spill incessant in the Niger Delta.

This was made known during an interactive session on Wednesday between stakeholders on the NOSDRA amendment bill organised by the Senate Committee on Environment and Ecology. *Nigerian Tribune* Read more

Oil Spills: Bill to Compel Compensation to Communities, Individuals Underway

October 25 - The Chairman, Senate Committee on Environment and Ecology, Senator Bukola Saraki, yesterday assured Nigerians that the Senate would soon conclude the amendment of a bill that will henceforth compel oil companies to pay compensation to individuals, families and communities that suffer the impact of oil spills and gas flaring due to their negligence and operational activities.

The Act to be known as the National Oil Spill Detection and Response Agency (NOSDRA), Act 2006 Amendment Bill 2012, Saraki hinted had scaled second reading in the Upper chamber. He said: "These two bills in my view will help address the regulatory and legal framework crucial to discouraging environmental bad behaviours that led to oil spills and routine gas flaring in Nigeria." *This Day Live* Read more

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PALOMARES BOMBS: SPAIN WAITS FOR US TO FINISH NUCLEAR CLEAN-UP

October 22 - On a sunny morning in 1966 two US Air Force planes collided and dropped four nuclear bombs near the village of Palomares in southern Spain.

There was no nuclear blast, but plutonium was scattered over a wide area - and Spain is now asking the US to finish the clean-up.

The US government calls nukes that go astray "Broken Arrows" and on 17 January 1966, Palomares got four of them.

Overhead, at 31,000ft, an American B-52G bomber collided with a KC-135 tanker plane during routine air-to-air refuelling and broke apart. Three of the bomber's H-bombs landed in or around Palomares, the fourth landed about five miles offshore in the Mediterranean.

Now, 46 years after the accident, there are indications that Spain and the US may be closing in on a permanent solution. Earlier this year, Spain's foreign minister Jose Garcia-Margallo met with US Secretary of State Hillary Clinton, then with reporters. *BBC News* Read more

USA: COAST GUARD APPROVES PLAN TO SECURE CONTAINMENT DOME

October 25 - The Federal On-Scene Coordinator for the Deepwater Horizon oil spill in New Orleans authorized BP to proceed with a plan to cap and plug the containment dome.

In 2010, the 40-foot-tall containment dome was used as a part of an attempt to capture oil and allow it to flow through a pipe to a barge on the surface. The technique was unsuccessful and the equipment was moved away from the well head and riser and set in its current position approximately 500 meters from the original Macando well head.

The operation, which began Tuesday, included BP mobilizing a remotely operated vehicle from the offshore construction vessel Skandi Neptune to the containment dome to place a cap on top of the stove pipe and plug the ROV connection ports on the sides and top of the structure. The cap and plugs were successfully put in place and no further oil emissions from the containment dome were observed.

BP has collected data via satellite throughout the operation and will continue to do so for a five-day period following, in order to detect changes in the surface sheen and to evaluate the effectiveness of these actions in abating or eliminating the sheen. In addition, the Coast Guard plans an overflight of the area later in the week. *Restore the Gulf.gov* Read more

USA & CANADA: TRANSCANADA RESTARTS KEYSTONE PIPELINE

October 22 - Oil resumed flowing Monday afternoon through the Keystone oil pipeline that carries about 590,000 barrels of crude per day from Canada to facilities in the Midwest.

TransCanada had shut down the 2,100-mile pipeline Wednesday after tests showed possible safety issues. Company spokesman Shawn Howard said in an email that there were no leaks and "the integrity of the pipeline system is sound."

The system will be operated at a slightly reduced pressure for about 24 hours so additional testing can be completed.

"Once the pipeline system is operating at full pressure, we will be curtailing October volumes and will return to contractual delivery levels in November," Howard said. "We will be having direct discussions with our customers regarding the impact this will have on their deliveries to us."

The potential problems were detected in a section of the line between Missouri and Illinois. TransCanada had planned to restart the pipeline Saturday, but bad weather complicated efforts to move equipment into the area so workers could excavate the pipeline for inspection. *Philly.com* Read more

CHINA: CNOOC FACES LAWSUIT IN US OVER SPILL DISCLOSURE

October 24 - As the repercussions of the June 2011 Bohai Bay oil spill still linger, China's state-owned oil company CNOOC faces a new headache after it was sued by its U.S. investors over its misleading statements issued during the spill.

China's largest offshore oil company said in an announcement posted on its website Tuesday evening that it received notice of the class action suit filed by its U.S. investor Sam Sinay, individually and on behalf of all others similarly situated, in the U.S. District Court for the Southern District of New York. The plaintiffs accused CNOOC of failing to disclose June 2011's Bohai Bay oil spill in a timely manner and also releasing false and misleading information about its performance and financials.

A CNOOC official refuted Sinay's allegations, saying the company complied with rules and terms concerning information disclosure during the spill. *China.org.cn* Read more

News (general)

CANADA: NW COAL PORT TRAFFIC RAISES WORRY ABOUT HUGE MARINE SPILL

October 24 - For the 15,000 residents and the tens of thousands of visitors, the San Juan Islands are about as good as it gets: clean air and water, recreation, wooded hillsides, and small towns with great theater, artists, and eateries. No wonder San Juan County has the highest per-capita income in the state and is ranked as the healthiest and one of the best educated.

Yet, there is fear in the island air that much of this could be washed away by what ecologists call a "low probability, high risk" event: an oil spill from an accident to just one of the thousands of oil tankers, container ships, and coal ships transiting the two narrow passages that define the Islands, Haro Strait, and Rosario Strait. *Crosscut.com* Read more

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CANADA: FEDS TO BEGIN NEW STUDY OF FIREFIGHTING POLLUTANTS

October 26 - The federal government is ramping up research into the same kind of historic firefighting pollution it refuses to help clean up at the Hamilton airport.

Environment Canada is about to begin a feasibility study of remediation technologies that could be used on federal properties contaminated by chemicals such as perfluorooctane sulfonate (PFOS), a now-banned ingredient in aviation firefighting foam that polluted airports across Canada, including Hamilton. *Thespec.com* Read more

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MALAYSIA: CHEMICAL SPILL RESPONSE EXERCISE ON VIDEO

Chemical Spills Response Drill conducted at Hokuden (M) Sdn Bhd, Bandar Tenggara Johor, Malaysia on the 18th October 2012
Watch the video

ISCO news

INTERNATIONAL RESPONSE RESOURCE INVENTORY UPDATE

The RRI is part of the International Offers of Assistance (IOA) initiative introduced at IMO by the delegation of the US in response to lessons learned during the 2010 Gulf of Mexico oil spill and being designed to streamline and speed up mobilisation of international support for major offshore and inland spill events.

ISCO is focusing its input to the RRI initiative on the contribution that can be made by the private sector and members have set up a correspondence group to address the matter.

Work already done by the IOA Core Group includes listing of kinds of large high capacity equipment/material packages but it is realised that smaller, specialised resources of equipment and materials and personnel who have specialised knowledge and experience should also be included in the RRI.

Members of the group have started to identify inventory category headings for equipment/materials that are often not available in typical response inventories and for specific areas of expertise that may be needed for a major oil spill response.

At a later stage, data to assist in quickly sourcing such resources will be compiled but this will be after decisions have been taken on classification definitions within the database. Right now, the group is just beginning to compile general headings. For example –

Smaller items of specialised equipment / materials, typically not available in many response inventories and therefore more difficult to find at short notice	**Human resources – Kinds of specialised knowledge and experience**
In-line mixers for emulsion breaking	Oil spill response in Arctic conditions
Emulsion breaking chemicals	Aerial observation/assessment of oil spills
Specialised equipment for animal/bird rescue	In-situ burning operations
Equipment for sub-sea oil recovery	Sub-sea oil recovery operations
Bioremediation materials	Application of bioremediation techniques

A special web page has been created at www.spillcontrol.org Members should log in and go to the IMO Section, then select Work Groups and RRI Project.

Members who feel they would like to join the ISCO Correspondence Group should contact the Secretariat – info@spillcontrol.org

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ISCO news (continued)

NEW MEMBER ELECTED TO ISCO COUNCIL

Having relocated to the UK, ISCO Executive Committee Member Capt. Bill Boyle MNI has recently stood down as Member of ISCO Council for Brazil.

After consultation with ISCO Members in Brazil, Mr John Cantlie, Operations Manager of Alpina Briggs Defesa Ambiental SA, has been appointed as the new Member of ISCO Council for Brazil with the approval of all the members.

We take this opportunity to congratulate John on his appointment.

WORLD MARITIME UNIVERSITY (WMU) IN MALMO, SWEDEN

ISCO's Secretary has received a letter from Dr Bjorn Kjertive, President of WMU, inviting nominations of students to join the next class at WMU. Over the last quarter-century, WMU has earned global recognition as an international centre of excellence for advanced maritime education and research for the world community. Graduates, more than 3,300 to date, have taken up senior positions in governments, maritime administrations, port and shipping management and educational institutions, and participate in maritime affairs at international as well as national level, with a particularly strong representation at IMO.

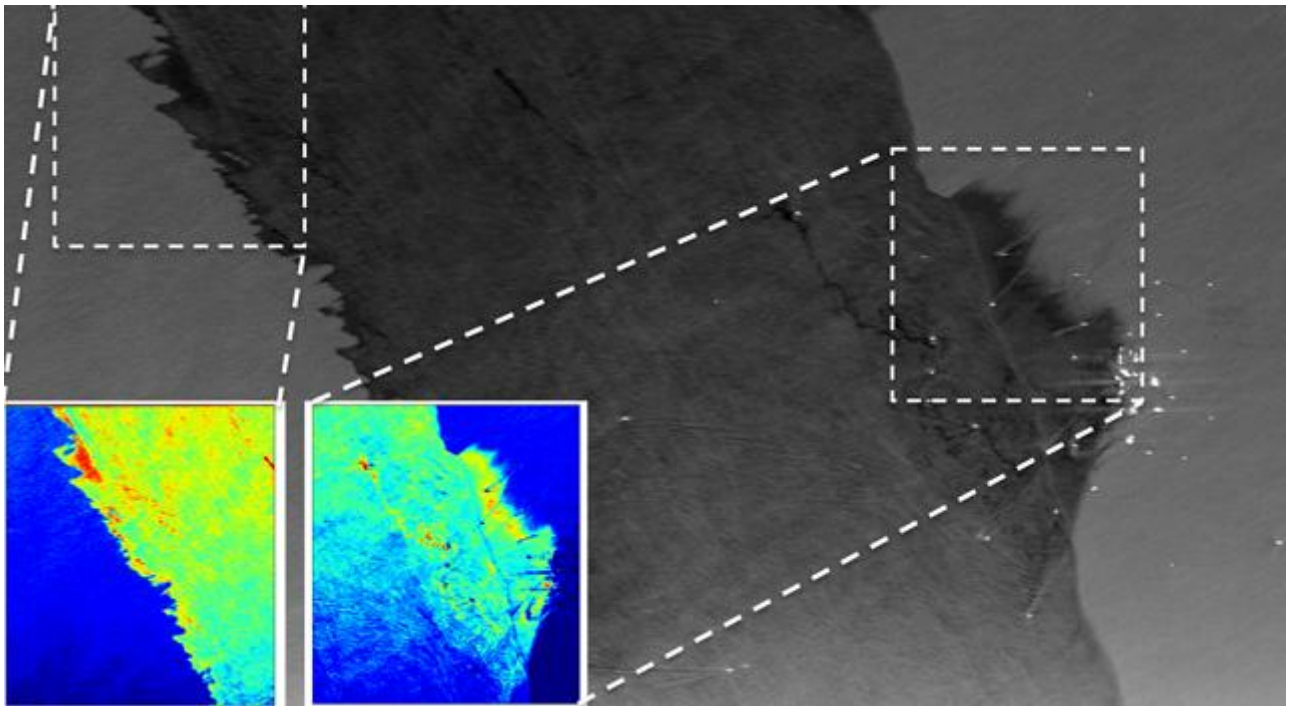
There are some donor fellowships available, but these are limited to government employees from the least-developed countries and applications should be submitted by the end of January, 2013. About half the University's students are now funded by their employers, government, from state scholarship providers, or from personal resources and so it is advised that all nominating authorities explore every possible national source of funding. Regrettably ISCO does not have funding available to sponsor students at WMU.

Courses include M.Sc. and Ph.D. in Maritime Affairs, with options to specialise in one of six different areas – Marine Environment & Ocean Management, Maritime Law and Policy, Maritime Safety and Environmental Administration, Maritime Education and Training, Port Management, and Shipping Management and Logistics.

ISCO has a few copies of the WMU Academic Handbook which include all relevant information about WMU and the courses. If you would like a copy send an email to info@spillcontrol.org

Science and technology

NASA 3-D IMAGING RADAR TO ANALYZE, CLASSIFY OIL SPILLS



NASA UAVSAR image of the Deepwater Horizon oil spill, collected June 23, 2010. The oil appears much darker than the surrounding seawater in the greyscale image. This is because the oil smoothes the sea surface and reduces its electrical conductivity, causing less radar energy to bounce back to the UAVSAR antenna. Additional processing of the data by the UAVSAR team produced the two inset color images, which reveal the variability of the oil spill's characteristics, from thicker, concentrated emulsions (shown in reds and yellows) to minimal oil contamination (shown in greens and blues). Dark blues correspond to areas of clear seawater bordering the oil slick. Images credit: NASA/JPL-Caltech

October 25 - Researchers at NASA's Jet Propulsion Laboratory and the California Institute of Technology in Pasadena have developed a method to use a specialized NASA 3-D imaging radar to characterize the oil in oil spills, such as the 2010 BP Deepwater Horizon spill in the Gulf of Mexico. The research can be used to improve response operations during future marine oil spills.

Caltech graduate student Brent Minchew and JPL researchers Cathleen Jones and Ben Holt analyzed NASA radar imagery collected over the main slick of the BP Deepwater Horizon oil spill on June 22 and June 23, 2010. The data were acquired by the JPL-developed Uninhabited Aerial Vehicle Synthetic Aperture Radar (UAVSAR) during the first of its three deployments over the spill area between June 2010 and July 2012. The UAVSAR was carried in a pod mounted beneath a NASA C-20A piloted aircraft, a version of the Gulfstream III business jet, based at NASA's Dryden Aircraft Operations Facility in Palmdale, Calif. The researchers demonstrated, for the first time, that a radar system like UAVSAR can be used to characterize the oil within a slick, distinguishing very thin films like oil sheen from more damaging thick oil emulsions.

"Our research demonstrates the tremendous potential of UAVSAR to automate the classification of oil in a slick and mitigate the effects of future oil spill tragedies," said Jones. "Such information can help spill incidence response commanders direct cleanup operations, such as the mechanical recovery of oil, to the areas of thick oil that would have the most damaging environmental impacts."

Current visual oil classification techniques are qualitative, and depend upon the skill of the people doing the assessment and the availability of skilled observers during an emergency. Remote sensing allows larger areas to be covered in a consistent manner in a shorter amount of time. Radar can be used at night or in other low-light or poor weather conditions when visual surveys can't be conducted. Radar had previously been used to detect the extent of oil slicks, but not to characterize the oil within them. It had generally been assumed that radar had little to no use for this purpose. The team demonstrated that UAVSAR could be used to identify areas where thick oil had mixed with the surface seawater to form emulsions, which are mixtures of oil and seawater.

Identifying the type of oil in a spill is vital for assessing its potential harm and targeting response efforts. For example, thin oil consists of sheens that measure from less than 0.0002 inches (0.005 millimeters) to about 0.002 inches (0.05 millimeters) thick. Sheens generally form when little oil is released, as in the initial stages of a spill, or from lightweight, volatile components of spill material. Because sheens contain little oil volume, they weather and evaporate quickly, and are of minor concern from an environmental standpoint. Oil emulsions, on the other hand, are 0.04 inches (1 millimeter) thick, contain more oil, and persist on the ocean surface for much longer, thereby potentially having a greater environmental impact in the open sea and along the shoreline.

"Knowing the type of oil tells us a lot about the thickness of the oil in that area," said Jones.

The researchers acquired data in June 2010 along more than 3,400 miles (5,500 kilometers) of flight lines over an area of more than 46,330 square miles (120,000 square kilometers), primarily along the Gulf Coast. They found that at the time the slick was imaged by UAVSAR, much of the surface layer of the Deepwater Horizon spill's main slick consisted of thick oil emulsions.

UAVSAR characterizes an oil spill by detecting variations in the roughness of its surface and, for thick slicks, changes in the electrical conductivity of its surface layer. Just as an airport runway looks smooth compared to surrounding fields, UAVSAR "sees" an oil spill at sea as a smoother (radar-dark) area against the rougher (radar-bright) ocean surface because most of the radar energy that hits the smoother surface is deflected away from the radar antenna. UAVSAR's high sensitivity and other capabilities enabled the team to separate thick and thin oil for the first time using a radar system.

"We knew we were going to detect the extent of the spill," said Holt. "But we had this great new instrument, so we wanted to see how it would work in this extreme situation, and it turned out to be really unique and valuable, beyond all previous radar results for spills."

"We studied an unprecedented event using data collected by a sophisticated instrument and were able to show that there was a lot more information contained in the data than was apparent when we began," said Minchew. "This is a good example of how the tools of science could be used to help mitigate disasters in real time."

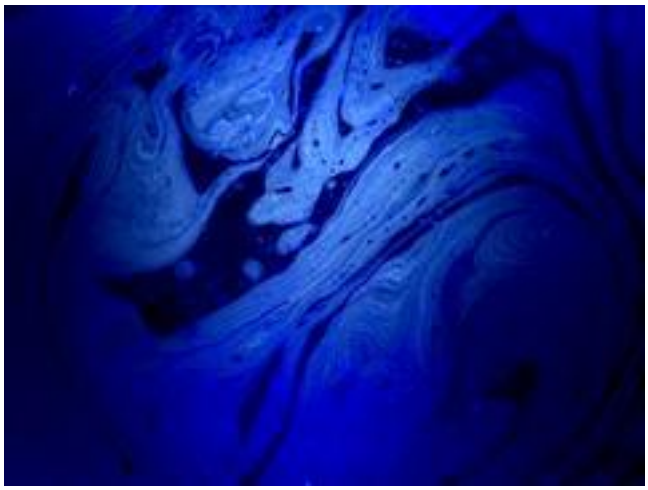
UAVSAR is returning to the Gulf of Mexico area this month and will image the area around the Deepwater Horizon site to look for leaks. In the future, UAVSAR data may be combined with imaging spectroscopic data from JPL's Airborne Visible/Infrared Imaging Spectrometer (AVIRIS) instrument to further improve the ability to characterize oil spills under a broader range of environmental conditions.

In addition to characterizing the oil slick, UAVSAR imaged most of the U.S. Gulf of Mexico coastline, extending from the Florida Keys to Corpus Christi, Texas, with extensive inland coverage of the southern Louisiana wetlands around Barataria Bay, the terrestrial ecosystem that ultimately sustained the greatest oiling from the massive spill. Researchers tracked the movement of the oil into coastal waterways and marshlands, monitored impact and recovery of oil-affected wetlands, and assessed how UAVSAR can support emergency responders in future disasters.

UAVSAR is also used to detect detailed Earth movements related to earthquakes, volcanoes and glaciers, as well as for soil moisture and forestry biomass studies. For more on UAVSAR, see: http://uavsar.jpl.nasa.gov/mission_flights.html . Results of this study are published this month in the Institute of Electrical and Electronics Engineers journal Transactions on Geoscience and Remote Sensing. Caltech manages JPL for NASA. *NASA Jet Propulsion Laboratory* Source document

Science and technology (continued)

NEW FLUORESCENCE TECHNOLOGY TO PINPOINT OIL LEAKS AT SEA



October 18 - Cambridge Consultants uses fertility monitor technology in oil leak early warning system - Leading technology design and development firm Cambridge Consultants today unveiled the first stage of work that's set to give a much-needed boost to offshore oil leak detection. It has built an oil spill detection technology platform that is capable of detecting the natural fluorescence of even tiny amounts of oil in or on water.

Cambridge Consultants has a long track record of delivering innovative fluorescence detection solutions for challenging applications such as clinical diagnostics equipment, fertility monitors and pregnancy tests, and authentication of valuable documents. Crude oil is naturally fluorescent – so the company has now used its fluorescence experience to build the new oil spill detection technology platform.

"The environmental impact of oil and gas leaks has never been more visible to the public – with the recent disaster in the Gulf of Mexico – yet the solutions currently available do not meet all the requirements in terms of performance and reliability," said Dr Frances Metcalfe, Associate Director, Oil and Gas, at Cambridge Consultants.

Currently, aircraft use long-range radar and scanners to detect fluorescence – but they are expensive and difficult to operate. Many oil companies still primarily rely on unsophisticated visual reports which are not consistently accurate. Many leaks are not detected until a slick comes to the surface and is visible to the human eye. The new technology aims to provide a compact, robust system that can be permanently installed for example along subsea pipelines.

Dr Metcalfe said: "To be effective and trusted, any detection system must detect spills early enough but be immune to false alarms – otherwise it will not be used. Our work so far shows that any reliable oil spill detection system will need to use more than one sensing method, and the best combination will depend largely on where and how it is going to be used. An oil spill 'alarm' system of sensors distributed across the seabed – or a series of oil platforms – is going to need a different design solution from a system for scanning a harbour or stretch of coastline from a distance to track oil spills that might be heading for the shore. Our world-leading skills in sensor design, data fusion and probabilistic signal processing enable us to identify and deliver the optimal solution for a given set of circumstances."

The new oil spill detection technology platform is the latest in a series of high-performance sensor developments Cambridge Consultants has undertaken for the oil and gas industry. "Developing new technologies to tackle difficult but high-value issues for this industry is a growing area of activity for us and we are actively growing our team," said Dr Metcalfe.

The company will be demonstrating the technology at the ITF Technology Showcase (stand 59) in Aberdeen on November 1.

Special item

PLAN, PREVENT AND PROTECT AGAINST OIL SPILLS – OIL SPILL INDIA CONFERENCE

The need to prevent oil spills and bring into place rapid response operations were the main highlights of the Oil Spill India Conference 2012

To deliberate on these serious environmental concerns, the Oil Spill India Conference 2012 was organized by iTen Media at Goa last week from September 13 to 15 under the theme **"Plan, Prevent, Protect".** India being a signatory to the Oil Pollution Prevention Convention, the importance of maintaining certain minimum facilities and equipment at ports to deal with operational and accidental oil leakages as well as to receive contaminated ballast from tankers became the crux of the deliberations.

In his address to over 250 high profile delegates representing almost the entire section of the maritime trade and industry, the Convenor, Capt. Sandeep Kalia, Executive Director, Great Offshore Salvage Services Ltd. said, "Today, protection of the marine environment is the dominant consideration in most salvage and oils spill response operations. Salvor's mission is to 'keep the pollutant in the ship'". He emphasized on the imperative need for an "Association or body" in India which deals with all relevant aspects of oil spills, including sources of oil spills, contingency planning, mitigation strategy, need for review of different existing legislation for oil spill management and the need for training and re-training.

P Elango, CEO, Cairns India Ltd and A K Hazarika, ex CMD of Oil & Natural Gas Corporation (ONGC) & currently Director – Onshore, ONGC provided nationwide perspective of the oil spill response capabilities available in the country and mitigation strategies put in place by ONGC as well as Cairns Energy. *Maritime Professional* Read the complete text of this article reviewing the Oil Spill India Conference 2012

Cormack's Column

In this issue of the ISCO Newsletter we are printing No. 100 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 100: KNOWLEDGE OF SHORELINE CLEANING

Previous articles reviewed the nil-response of natural dispersion/degradation of pollutants at sea and in the surf-line; use of surface film chemicals to prevent pollutant retention on shorelines ant to return them to the sea for dispersant application to promote natural degradation; the sequestration of pollutant with contaminated sand to produce building products; onshore biodegradation to carbon dioxide and water; and mechanical recovery which prevents dispersion and interrupts degradation.

This article now begins a review of the downstream processes necessitated by mechanical recovery and which transpose natural *in situ* degradation to that of land-farming, incineration as waste, or combustion as fuel.

Oil recovered from water or shoreline surfaces will have lost up to 30% of its weight by the evaporation of its volatile components while its non-volatile components will have increased their weight by up to 400% by absorbing up to 80% water in the emulsifying with it, and thus their viscosity which may be non-thixotropic or thyrotrophic (Newtonian or non-Newtonian) the latter likely to become a virtual solid in undisturbed storage. Thus, all emulsions recovered from water surfaces at sea and inshore, from shoreline trenches/sumps, or by separation from shoreline materials co-collected by graders and scrapers, must be separated (broken) into their oil and water phases to facilitate pumping by reducing viscosity back to that of the oil, to reduce subsequent storage requirements by discharging the water (now prevented by environmentalist regulation) and to reduce subsequent transport requirements for final use/disposal (if permitted by environmentalist regulation).

Again, previous articles have reviewed our general knowledge on the stability and breaking of emulsions with respect to the asphaltenes, wax, and photo-oxidised oil components which surround and stabilise their internal water droplets against the progressive coalescence which would break the emulsions into their separate phases, and our general knowledge on the role of heat and/or demulsifiers in breaking them.

However, while the high molecular weight surface active agents which are demulsiifiers can be selected by trial-and-error, or even specifically synthesised, for routine use with the un-weathered emulsions encountered in the normal operations of individual oil refineries, these approaches are less applicable to the weathered emulsions of marine releases of any oil. However, the increased difficulty of emulsion breaking observed with increased asphaltene content for the oils tabulated below may be taken as a guide to expectations with other oils, the difficulty expressing itself as a requirement for more demulsifier, higher temperature, or both, though individual refinery advice may be helpful if available.

Oil	Asphaltene Content	Oil	Asphaltene Content
Nigerian export	0.2	Arabian medium	5.3
Forties	0.3	Medium fuel	5.7
Ninian	0.5	Heavy fuel	8.0
Arabian light	2.2	Safaniya	8.3
Kuwait	3.8	Arabian heavy	9.0

A further difficulty is that mixing conditions can cause small water droplets to grow at the expense of larger ones to produce increased uniformity of size without coalescing to the point of phase separation. However, it has been found that online static mixers give generally good results when this equipment is installed between the initial deck-mounted collection hopper and the ship's cargo tank or as similarly appropriate for shoreline operations.

Such emulsion breaking results in both oil and water entering the initial storage tank in the form of an oil phase and a water phase but with some of the oil dispersed in the water as droplets. Thus, time is required for Stokes' Law separation with the tank acting as an API gravity separator, while its optimal use as a storage tank requires the depth of the water layer which may amount to 4 x the depth of the oil layer requires the water to be removed as soon as possible. However, in shoreline operations the initially limited storage volumes may be transferred to larger intermediate volumes by pumps of minimal emulsification-potential prior to the subsequent removal of the oil phase itself and the discharge of the water phase as from an API separator. For this purpose, emergency pits can serve as tanks/API separators provided they are lined with heavy-gauge/oil-impermeable sheeting such as PVC, polyethylene, or oil-resistant rubber to prevent inland water-table contamination, long narrow pits being easiest to dig, line, fill and empty.

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.

Publications

US EPA: TECHNOLOGY INNOVATION NEWS SURVEY

The September 1-15, 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/

Events

UK: ITF TECHNOLOGY SHOWCASE

Bringing together operators and innovators to discover the latest challenges for the industry. Thursday 1st November at Aberdeen Exhibition and Conference Centre, 7:30am - 5:00pm More info

UPCOMING SOIL & GROUNDWATER EVENTS

A round-up of events in UK and USA compiled by Environmental Expert View list of events

UK: O&G PIPES GLOBAL CONFERENCE

London, 27-29 November 2012 - O&G Pipes: The Pipeline Event that Bridges The Gap Between Commercial, Strategic and Technical Knowledge More info

CANADA: INTERNATIONAL SITES AND SPILLS EXPO

Toronto, 7-8 November 2012. Two days of information-packed education PLUS a Special Conference Workshop More info

CONFERENCE - Wednesday, November 7, 2012 HAZMAT | REMEDIATION | CLEANTECH
Thursday, November 8, 2012 HAZMAT | REMEDIATION | OIL & GAS

CHINA: THE 2nd OIL SPILL RESPONSE WORKSHOP

Beijing, 12 December 2012 - OSRW 2012 will provide venues for experts from around the world to share their latest researches, technologies and concepts in spill prevention, preparedness, response, and restoration. It is an opportunity for the industry to come forward and discuss oil spill - how it can be prevented, what can be done to clean up the menace and how we can utilize the best technology. More info

INDONESIA: 3rd ANNUAL OFFSHORE INDONESIA OIL & GAS CONFERENCE

Jakarta, 26 February – 1 March 2013 More info

KENYA: 2nd OIL & GAS AFRICA TRADE FAIR

Nairobi, 29 April – 1 May 2013 More info

CANADA: INTERNATIONAL ENVIRONMENTAL TECHNOLOGY TRADE SHOW & CONFERENCE

Toronto, 19-21 March 2013 - “Americana” More than 200 technical and scientific presentations, workshops and panels dedicated to environmental and economic issues. Three days of international conferences presented by renowned experts. More info