ISCO NEWSLETTER

The Newsletter of the International Spill Response Community

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News

ISCO AGM WILL BE HELD 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.

ITOPF, OSRL AND IMO LINK UP TO RUN SHORT COURSES ON OIL SPILL RESPONSE AND HNS POLLUTION INCIDENTS

The day before the main Interspill conference, ITOPF will be jointly running a short course with Oil Spill Response Ltd entitled "Oil Spill Response - A Technical and Strategic Overview" and a course on chemical (HNS) pollution incidents with the International Maritime Organization (IMO).

There will also be presentations on half day courses on Oiled Wildlife Response and Claims and Compensation, with ISCO member Sea Alarm and the IOPC Funds respectively.

Please visit INTERSPILL's website to register for these courses http://www.interspill2012.com

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ITALY: COSTA CONCORDIA UPDATE

February 23 - Since the pumping commenced, the oil removal process has progressed well and at a steady rate. Oil has been removed from all six forward tanks and the hoses, pumps and valves have been disconnected with the flanges sealed off. Following the successful oil removal from the forward ship, the crane barge was disconnected and brought back into the sheltered port on Monday morning. The fuel tanker 'Elba' into which the fuel was pumped has moved away from the Costa Concordia and a second fuel barge 'Magic Duba' is standby to replace the 'Elba'. (Update from Smit Salvage) Read more

NEW ZEALAND : RENA UPDATES

Picture: Containers can be seen pushing open hatch covers on the bow section of the Rena wreck. Photo: LOC

February 24 - 554 containers have now been recovered from ***Rena*** by Svitzer salvors and received ashore by the Braemar Howells container processing teams. A further 71 containers have been recovered from the water and shoreline – making a total of 625 now accounted for onshore.

Salvors have also this week managed to extract a further 10.3 cubic metres of fuel from the engine room port side slop tank in the stern section of the wreck. This was done using the hot tapping technique. The amount of residual oil on the wreck remains in the tens of tonnes. (From Maritime New Zealand) Read more

February 25 - Svitzer salvors are planning how to remove a container carrying ferrosilicon from the Rena wreck at the Astrolabe Reef. Maritime New Zealand is reporting the container was 'wet-stored' in 9m of water at the weekend after salvors detected higher than normal gas levels emanating from it.

When the ship ran aground at the reef on October 5, there were eight containers onboard containing a toxic substance; four of these held ferrosilicon. It is a hazardous substance that is flammable when combined with fresh water. *Sunlive Newspaper* Read More

NIGERIA: CHEVRON GAS WELL FIRE 'MAY BURN FOR MONTHS'

February 22 - A gas-fuelled fire, with flames as high as 5m, may burn for months in waters off the Niger Delta in south-east Nigeria, Chevron has told the BBC.

Two workers died after January's explosion at the KS Endeavour exploration rig, owned by the US firm.

Friends of the Earth says this is the world's worst such accident in recent years.

Chevron spokesman Lloyd Avram says, despite the fire, the situation is now under control and no oil is leaking.

A fire is burning in a 40m-wide area on the surface of the Atlantic Ocean, 10km off the Nigerian coast.

The company is trying to put out the fire by piercing a hole in the original gas well - through which cement will be poured.

BBC News Africa Read more

News (continued)

AUSTRALIA: CHEMICAL SPILL FORCES VICTORIAN RESIDENTS INDOORS

February 19 - A chemical spill at a storage plant in Portland has shut down the port and forced residents indoors.

Hundreds of tonnes of liquid pitch, used by the nearby Alcoa smelter to process aluminium, have spilled from a storage tank at the Portland port, in southwest Victoria. The Country Fire Authority (CFA) is warning residents to stay inside, shut their doors and windows and seek urgent medical attention if they are affected by harmful vapours.

The Australian Read more [Thanks to Don Johnston of ISCO Industry Partner, DG & Hazmat Group, for passing on this item]

U.S. IN ACCORD WITH MEXICO ON DRILLING

In the picture: Interior Secretary Ken Salazar, left, Secretary of State Hillary Rodham Clinton, President Felipe Calderon of Mexico and Foreign Minister Patricia Espinosa of Mexico after signing the Transboundary Agreement on Monday.

February 20 - The United States and Mexico reached agreement on Monday on regulating oil and gas development along their maritime border in the Gulf of Mexico, ending years of negotiations and potentially opening more than a million acres to deepwater drilling.

The agreement, if ratified by Mexican and American lawmakers, would for the first time provide for joint inspection of the two countries' rigs in the gulf.

Until now, neither was authorized to oversee the environmental and safety practices of the other, even though oil spills do not respect international borders.

The New York Times Read more

USA: EPA'S FY 2013 BUDGET PROPOSAL RELEASED

February 13 - Today the Obama Administration proposed a FY 2013 budget of $8.344 billion for the U.S. Environmental Protection Agency (EPA).

This budget reflects a government-wide effort to reduce spending and find cost-savings, and is $105 million below the EPA's enacted level for FY 2012. The FY 2013 budget is the result of EPA's ongoing efforts to carefully consider potential cost savings and reductions while continuing its commitment to core environmental and health protections -- safeguarding Americans from pollution in the air they breathe, the water they drink and the land where they build their communities.

"This budget is focused on fulfilling EPA's core mission to protect health and the environment for millions of American families. It demonstrates fiscal responsibility, while still supporting clean air, healthy waters and innovative safeguards that are essential to an America built to last," said EPA Administrator Lisa P. Jackson. "It has taken hard work and difficult choices to reach this balanced approach, and while we had to make sacrifices, we have maintained our commitment to the core priorities of this agency and ensured the protections the American people expect and deserve." *USA EPA Press Release* *Read full text*

USA: BP STARTS COURT FIGHT OVER GULF OF MEXICO OIL SPILL

February 24 - BP will start one of the biggest fights in its 104-year history next week as the US Government sues the oil giant for the devastation caused by the Gulf of Mexico disaster.

The group will be in the dock alongside contractors Halliburton and Transocean as a single judge decides who was to blame for what happened when the Deepwater Horizon rig exploded, claiming the lives of 11 men and triggering the biggest oil spill in US history.

The British company will face the wrath of the US Federal Government, several states, various local government authorities and hundreds of independent plaintiffs before Federal Judge Carl Barbier at a court in New Orleans, Louisiana, on Monday.

On top of millions of pounds of legal fees, BP and the contractors could face a penalty of up to $17.6bn (£11.1bn) for water pollution alone if the court finds gross negligence was at play. *The Independent* Read more

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MICRONESIA: OIL LEAKS FROM WARTIME SHIPWRECKS

As the United States fought its way across Micronesia during World War Two, it launched a strike against Japanese naval forces that could hinder the US advance on the Japanese mainland.

In February 1944, the US Navy mounted Operation Hailstone —a major naval and air attack against Truk Atoll in the Japanese territory of the Caroline Islands, the home base for Japan's Imperial Combined Fleet.

Even though some ships escaped before the attack, the initial US air assault on 16 and 17 February 1944 sank a good part of Japan's remaining naval forces in Micronesia. More than 50 destroyers, cruisers, merchant ships and support vessels—including at least three oil tankers—were left on the bottom of Truk Lagoon.

Today, Truk is renamed Chuuk, one of the four states of the Federated States of Micronesia (FSM). Nearly 70 years on, these shipwrecks are a looming time bomb for the environment and inhabitants of Chuuk Atoll. *Islands Business* Read more Thanks to Don Johnston of ISCO Industry Partner, DG & Hazmat Group, for passing on this item]

CANADA AND USA: FRACKING NEWS UPDATES

Expert panel deliberates hydraulic fracturing in shale gas development

February 17 - VANCOUVER, British Columbia -- The use of hydraulic fracturing in shale gas development took center stage Friday as a panel of U.S. and Canadian experts discussed the contentious practice in a three-hour symposium hosted by the American Association for the Advancement of Science (AAAS).

The panel, moderated by Dr. Raymond L. Orbach, former Under Secretary for Science in the U.S. Department of Energy, addressed concerns related to the role of hydraulic fracturing in shale gas production, which has at once been heralded as a game-changer for North American energy supplies and a threat to drinking water and air quality.

The practice, often used in tandem with horizontal drilling, has been in use for decades, but has come under scrutiny from environmentalists and others who fear it poses a threat to public health. *Environmental Expert* Read more

EPA chief: 'Fracking' can be OK

Environmental Protection Agency Administrator Lisa Jackson said that fracking can be done cleanly. / ASSOCIATED PRESS

February 23 - U.S. Environmental Protection Agency Administrator Lisa P. Jackson told energy industry leaders and environmentalists Wednesday that natural gas fracking can be done without harmful impacts, presenting "an historic opportunity" for the country in terms of energy development and job creation.

"I think that fracking as a technology is perfectly capable of being clean. I do. But it requires people who are doing it and innovators who use the technology to take some time to make sure that it's done right. And it requires smart regulation, smart rules of the road," Jackson said. *APP.com* Read more

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THAILAND: US, THAI MARINES REHEARSE CHEMICAL ATTACK, DECONTAMINATION SITUATION

February 14 - Royal Thai Marines wash a bleach water solution on each other's gas masks as part of their decontamination during a chemical, biological, radiological, chemical exercise here, Feb. 14. The training was conducted by Thai forces and Marines with the 31st Marine Expeditionary Unit, jointly executing casualty decontamination in a bilateral environment. The training is part of Exercise Cobra Gold 2012, now in its thirty-first iteration. The exercise is a multilateral event focused on strengthening the interoperability of all participating military forces. The 31st MEU is the only continuously forward-deployed MEU and remains the nation's force in readiness in the Asia-Pacific region.

SAMAESAN, Thailand – U.S. and Thai Marines donned hazardous material suits under the hot Thailand sun during a chemical attack exercise hereChemical, biological, radiological, nuclear defense specialists with the 31st Marine Expeditionary Unit participated in a multilateral scenario in which they, along with their Royal Thai Marine and Air Force counterparts, responded to a chemical attack on a troop transport truck. *MilitaryFeed.com* Read more

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News (continued)

HISTORIANS LOOKING FOR MEMORIES OF OIL SPILL OFF CORNWALL IN THE 1960S

More than 110,000 tonnes of crude oil spilled into the sea and the incident made international headlines as the Navy and the RAF were called in. Local people also helped in the largest clean-up operation of its kind.

Now historians based at University of Exeter's Tremough Campus in Penryn, Cornwall, are asking people who remember the event to come forward and share their memories.

Jos Smith, one of the historians involved in the study, said: "We are interested in getting in touch with anyone who was there and remembers being involved, either on the Scilly Isles or on the Cornish mainland.

"Perhaps you helped in the weeks of clean-up operations afterwards. Perhaps you remember the particular impact that the incident had on the wildlife, or on the fishing, farming and tourist industries.

"Perhaps you didn't witness the incident itself but you do remember its impact on family or community life afterwards.

"Whatever your level of involvement, and whatever your memory, we would be very interested in hearing from you."

The university hopes to create an archive of memories that present and future generations will be able to use to reflect on this major incident.

Anyone who is interested in helping can contact Jos Smith of the University of Exeter on 07877 911 339, email jjos201@exeter.ac.uk, or write to Thaxted, Long Street, Sherborne, Dorset, DT9 3BS. *Western Morning News* Read more

People in the news

MARK HODDINOTT TO BECOME GENERAL MANAGER OF INTERNATIONAL SALVAGE UNION

February 1 - The International Salvage Union today announced that it has appointed Mark Hoddinott to succeed its Secretary General, Mike Lacey, on his planned retirement at the end of 2012. He will start with ISU in April 2012 and he will work closely with Mike Lacey for the rest of the year to ensure a smooth transition of responsibilities between them before he takes up the position formally in October.

Mark Hoddinott will be General Manager and will combine the role of Secretary General with that of General Manager which will be vacated this spring on John Noble's planned retirement. He will be responsible to the President of the ISU and its Executive Committee for the day to day running of the ISU and its work on relevant issues.

Mark Hoddinott is well-known in the shipping sector and has extensive experience of the salvage industry. He started his career at sea and he has a Master Mariner's Certificate. He joined the UK's United Towing as a Salvage Officer in 1982 and subsequently he has served as Salvage Master, performing a number of notable salvage operations. He later moved into senior management with Howard Smith, then Adsteam, beforejoining US-owned Titan Salvage as its Managing Director, Europe. Mark Hoddinott has also served on the ISU's Lloyd's Open Form Sub-Committee since its inception in 2006 and has been the Chairman of that committee for the past three years.

The President of the ISU, Andreas Tsavliris, said: "Mark is just the right person to take over from Mike. He knows the salvage industry extremely well having conducted many operations as a salvage master and he also has impressive experience in senior management roles. It is with great pleasure that I welcome him aboard.

"I should also like to thank Mike Lacey for the huge contribution he has made to the ISU over many years. His achievements are immense - too many to list - suffice it to say he has been at the forefront of our work and his legacy lies in the numerous documents, contracts, conventions, and many other aspects of the marine salvage business in which he has been involved, as well as the successful General Meetings that he has organised since 2006 for ISU. He will leave the ISU in very good shape and on very good terms."

Cormack's Column

In this issue of the ISCO Newsletter we are printing No. 65 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 65: KNOWLEDGE OF REMOTE SENSING AND IDENTIFICATION SAMPLING

While WSL was investigating the potential of remote sensing instrumentation to estimate area and thickness of oil slicks, others were already operating commercially available equipment in aircraft. Thus Canadian and US workers were using the Daedalus 1230 dual-channel line scanner system consisting of a UV detector sensitive to the 270-370nm spectral band and a thermal IR for the 850-1250 band, and the Daedalus 1260 multi-spectral scanner in which the near-UV to near-IR region from 380-1100 was divided into 10 channels in addition to the thermal IR detector of the 1230 model.

When these systems were used to observe test releases of Murban and La Rosa crude oils, the thermal IR detector distinguished slick regions which were warmer (brighter) than the sea from regions which were apparently cooler (darker) than the sea, suggesting that mechanisms other than the two out of six investigated by WSL/Lancaster (article 64) were involved. These effects were stable over a period of 3 hours and thus could not be attributed to different oil source temperatures, while the effect of evaporation could be discounted. Thus, the cool region was attributed to oil having a lower emissivity than water and the warm region to solar heating of the optically thicker layers. As to the visible and near-IR regions of the multi-spectral scanner, it was found that the detection thickness threshold increased with frequency as expected; that thick layers are detected primarily by volume-reflected radiance; that consequently detection will depend on oil type and extent of water-in-oil emulsion formation; and that highly absorptive oils will be less easily seen, while the more highly scattering emulsions will increase the volume-reflected radiance making them more easily seen. As to the UV imagery, it was found that the dual-channel unit gave better contrast for the thin regions of the slick than did the multi-scanner unit, mainly because of its lower noise equivalent radiance value; and that variation in detector sensitivity, noise levels, *etc*., will always make results detector-specific to some extent.

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In addition, microwave sensors were available with wavelengths in the range 0.1 to 100cm which could operate in the passive mode to measure differences in brightness temperature between oil and water at a given wavelength, or in active mode as radars emitting and receiving back-scatter from the sea or oil surface.

As to passive microwave radiometry, calculations of oil brightness over water brightness predict alternating maxima and minima as the oil slick thickness increases, though use of two frequencies removes ambiguities and determines thickness uniquely over a wide range. Thus, three floating oils were separately set up at known thicknesses in test tanks, antenna temperatures were measured, and from the alternating maximal and minimal response to thickness variation, complex dielectric constants were determined for the three oils. These oils were then the subject of sea trials in which independently measured layer thicknesses were compared with thicknesses derived from microwave antenna temperatures at 19.4 and 31.1GHz. Thereafter, in a release of 630 gallons of oil in a one metre swell and winds of 2-4ms, *in situ* thickness measurements showed the oil to be 2.4 $\pm$ 0.3mm thick within a central zone containing 90% of it surrounded by oil at a thickness of 2-4μm while repeated aircraft passes built up a two-dimensional antenna temperature contour map of the whole slick which was subsequently converted to thickness contours, though the contour intervals were too close to be confirmed by *in situ* measurements.

As to active radar, waves at sea are either gravity waves of long wavelength and large amplitude or small capillary waves, the latter being the first to be produced as wind speed increases from zero and which are ultimately superimposed on the larger gravity waves. Imaging radars detect capillary waves and only detect gravity waves by detecting the increased concentration of capillary waves on their downwind faces thus imposing a periodicity in the backscatter image which varies with viewing direction with respect to wind direction. Thus, imaging radars only see oil slicks because they suppress capillary waves which means they will see them when capillary waves are to be seen on the surrounding sea and this in turn requires wind speeds from 1-1.5 ms^{-1} to saturation at 15-20ms^{-1}. However, for radars intended to detect solid objects, this so-called sea-clutter is instrumentally suppressed, thus reducing the ability of such radars to detect oil spills. In any case, the greater resolution of synthetic aperture radars make oil spills easier to see than with lower resolution real aperture equipment, an advantage demonstrated over real oil spills off Toulon using X-band radars while oil spills off New Jersey have shown that the X-band SAR is superior to the longer wavelength L-band. Again, use of an instrument able to transmit vertically and horizontally polarised microwaves and to receive either like- or cross-polarised returns, has shown that for incidence angles appropriate to aircraft mounting, vertical-vertical polarisation is preferable in giving the strongest back-scatter while for higher altitude satellites, either like-like mode would be satisfactory.

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.

OIL SPILL REMOTE SENSING: CHAPTER 7

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.

Laser fluorosensors

Laser fluorosensors are sensors that use the phenomenon that aromatic compounds in petroleum oils absorb ultraviolet light and become electronically excited. This excitation is rapidly removed through the process of fluorescence emission, primarily in the visible region of the spectrum. Since very few other compounds show this tendency, fluorescence is a strong indication of the presence of oil. Natural fluorescing substances, such as chlorophyll, fluoresce at sufficiently different wavelengths than oil to avoid confusion. As different types of oil yield slightly different fluorescent intensities and spectral signatures, it is possible to differentiate between classes of oil under ideal conditions.[15-17]

Most laser fluorosensors used for oil spill detection employ a laser operating in the ultraviolet region of 308 to 355 nm.[15-17] With this wavelength of activation, there exists a broad range of fluorescent response for organic matter, centered at 420 nm. This is referred to as Gelbstoff or yellow matter, which can be easily annulled. Chlorophyll yields a sharp peak at 685 nm. The fluorescent response of crude oil ranges from 400 to 650 nm with peak centers in the 480 nm region. The use of laser fluorosensors for chlorophyll and other applications has been well documented.[15]

Another phenomenon, known as Raman scattering, involves energy transfer between the incident light and the water molecules. When the incident ultraviolet light interacts with the water molecules, Raman scattering occurs. This involves an energy transfer between the incident light and water molecules. The water molecules absorb some of the energy as rotational-vibrational energy and emit light at a wavelength which is the difference between the incident radiation and the vibration-rotational energy of the molecule. The Raman signal for water occurs at 344 nm when the incident wavelength is 308 nm (XeCl laser or eximer laser). With an excitation at 460 nm (tunable dye laser) the Raman occurs at about 540 nm.[18]

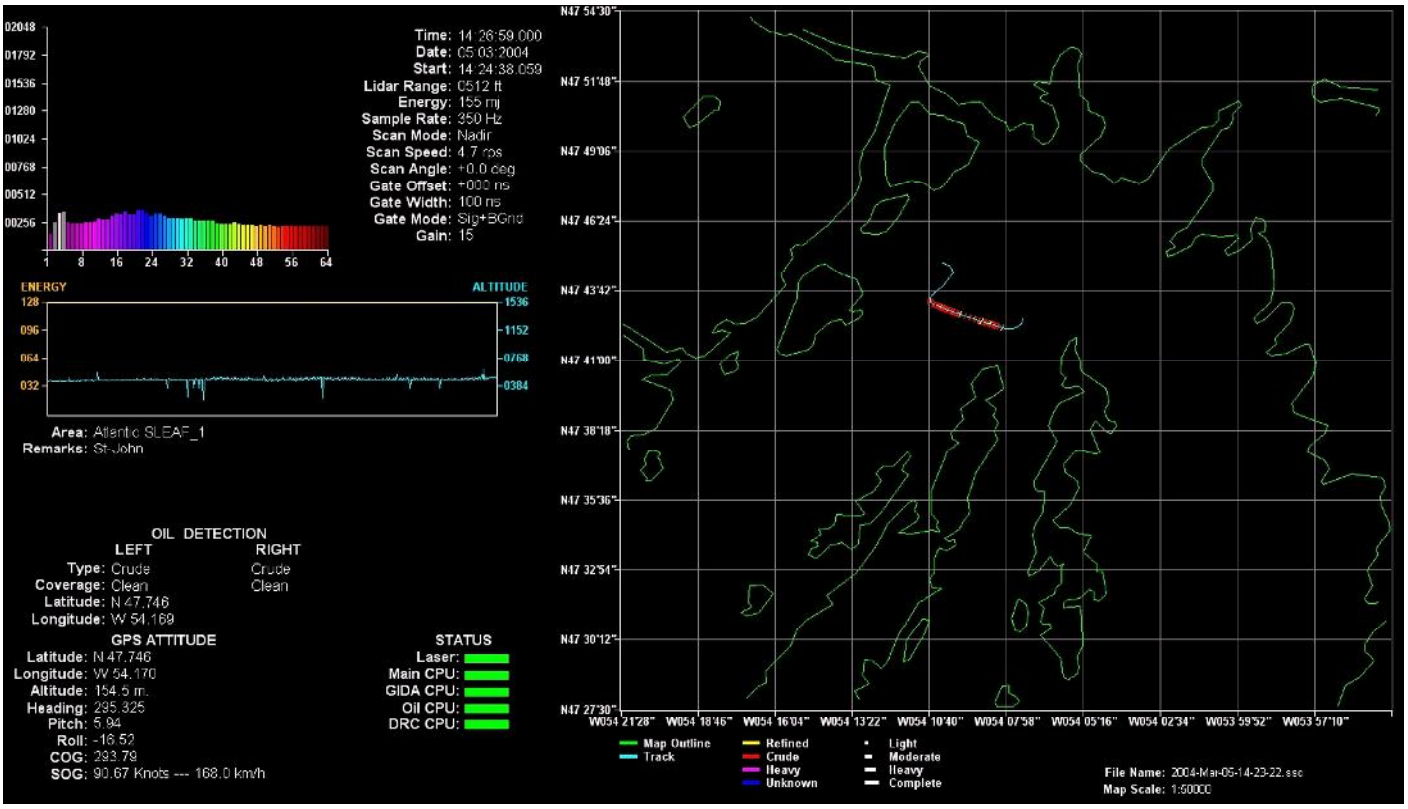

Fig 9 An illustration of a fluorosensor display. On the left instrument and detection criteria are given. On the right, the flight track (blue) is annotated with oil detection 'hits' shown as red bars. The map on the right is a real-time actual map. (Image from Environment Canada)

Special series (continued)

The water Raman signal is useful for maintaining wavelength calibration of the fluorosensor in operation, but has also been used in a limited way to estimate oil thickness, because the strong absorption by oil on the surface will suppress the water Raman signal in proportion to thickness.[18] The point at which the Raman signal is entirely suppressed depends on the type of oil, since each oil has a different absorption coefficient. The Raman signal suppression has led to estimates of sensor detection limits of about 0.05 to 0.1 μm.[18] It should be noted that this thickness is well below that of interest for oil spill countermeasures.

Laser fluorosensors have significant potential as they may be the only means to discriminate between oiled and unoiled seaweeds and to detect oil on different types of shorelines. Tests on shorelines show that this technique has been very successful.[15] Algorithms for the detection of oil on shorelines have been developed. Work has been conducted on detecting oil in the water column such as occurs with the product, Orimulsion.[15] The fluorosensor is also the only reliable means of detecting oil in certain ice and snow situations. Operational use shows that the laser fluorosensor is a powerful tool for oil spill remote sensing.[15] Currently, one company makes two commercial models of the instrument (Optimare).

Laser fluorosensors have shown high utility in practice and are now becoming essential sensors in many remote sensing packages. The information in the output is unique and the technique provides a unique method of oil identification. The method is analogous to performing chemistry in flight. Figure 9 shows a display of a laser fluorosensor. The typical fluorosensor can provide an abundance of information to the user.

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17 Vasilescu, J., L. Marmureanu, E. Carstea and C.P. Cristscu, Oil Spills Detection from Fluroescence Lidar Measurements, *U.P.B. Sci. Bull*., 149, 2010

18 Hoge, F.E. and R.N. Swift, Oil Film Thickness Measurement Using Airborne Laser-Induced Water Raman Backscatter, *Appl. Optics*, 3269, 1980

Contributed article

ENVIRONMENTAL EQUIPMENT FIRMS IN U.S. CAN GET RESEARCH AND DEVELOPMENT TAX CREDITS

Can this be true? How do you qualify for a tax credit?

The writer, Member of the ISCO Executive Committee, Mark K. Shaye, is Legal Advisor to ISCO. Over years he has developed specialized expertise in the subject matter of this article which we think will be of interest to some of our readers especially in the USA.

Summary: When environmental equipment manufacturers hear that their design activities may qualify for federal and/or state research and development tax credits, their first reaction is often to presume that it sounds too good to be true. They have trouble believing it because they simply consider much of their design and development activities to be "routine," far from rising to the level of anything that would revolutionize the industry. This is a costly misconception.

What R&D Qualifies Today? Applicable tax laws and regulations, in fact, do not require a business to discover something so innovative that it advances the field as a whole. They simply require that a product or process be new or an improvement for the individual taxpayer. Because many environmental equipment design project requirements are unique, design activities often qualify for generous federal and state research and development tax credits.

As defined in the tax code, research and development activities must meet certain requirements to be eligible for tax credits:

* Use technology to create new or improved products or services
* Achieve this improvement by experimenting with alternative technical solutions
* Use the technical information obtained from the experiments to reduce the technical uncertainties involved in your product and process development

Because research and development tax credits were intended to promote domestic innovation, they are not specific to any one industry and are indeed applicable to the field of environmental equipment manufacturing. These credits are activities-based. Thus, an environmental equipment design project qualifies if it meets the above requirements. Let's take a quick look at this in more detail.

Product and process improvements. Applied to an environmental equipment manufacturer, this includes technical designs that a firm develops for its clients. Because many design projects are unique with respect to specific client requirements, regulatory performance standards, site conditions for geotechnical and climatic characteristics, and a seemingly infinite number of other factors, a firm's improved equipment designs for each project may qualify as R&D.

Contributed article (continued)

Additionally, although the product development cannot relate to purely aesthetic features, activities related to the development of the functional, performance, reliability, or quality features of environmental equipment might qualify. For example, activities related to the design of environmental equipment to achieve standards of pollution control mandated by government imposed regulations—can be eligible for these credits. Many environmental equipment design projects therefore are qualifying R&D to the extent of their functional design development.

Eliminating uncertainty. Environmental equipment engineers/designers are frequently confronted by uncertainties pertaining to environments, field conditions, optimal materials, and detailed component, mechanical, and electrical systems. However, even if an engineer or a designer is certain as to the capability or method of developing the final design of environmental equipment, the project will meet the uncertainty requirement if the engineer/designer is uncertain as to how to proceed without the data generated through experimentation undertaken to find interim alternative technical solutions.

The key is experimentation. During the course of an environmental equipment design project, the engineers' collaboration in developing and assessing a design through modeling or computational analysis can satisfy the experimentation requirement of qualified research. So long as the design evaluations occur before the new or improved product or process is deemed to meet the functional and economic requirements of the project, the activity will be considered to be undertaken pursuant to a qualifying process of experimentation.

Technological In nature. An environmental equipment design process will satisfy this requirement to the extent that it relies on engineering, including reliance on mechanical, electrical, industrial, and software engineering in the design of a structure's features to meet functional or performance requirements. Even if an environmental equipment firm's activities incorporate existing and known technologies, it will not necessarily preclude them from considering these activities for tax credits, because applicable rules permit a taxpayer to employ existing technologies and known principles if the firm is still facing technical uncertainties that have to be addressed through experimentation.

About your contracts. Although environmental equipment manufacturers may conduct qualifying research activities under contract with their clients, the contract or payment for these services will not necessarily exclude the activity as qualifying research. For work under contract, payment is not the determining factor. If the firm bears the economic risk and retains rights to the research, the services will not be excluded as qualified research. As an example, activities performed under lump-sum projects with no restriction as to how the environmental equipment manufacturer can use knowledge gained during the project may still qualify for tax credits.

An example of the opportunity. Company A has $20 million in annual gross receipts, uses technology in its operations and could qualify $1 million, 5 percent, of its expenditures as R&D (this percentage varies by industry and company). Assuming a few other variables are addressed favorably, the annual credit could total $65,000. Many companies can also claim R&D tax credits in three previous tax years and amend their returns to get refunds. In this example, Company A could receive a total of $260,000 in credits for the current and three past tax years.

For information to take the next step in realizing these benefits, contact Marc K. Shaye at shayemk@aol.com.

Publications

MIDSIS TROCS VERSION 3.0 ONLINE

The Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC) has the pleasure to announce that the Maritime Integrated Decision Support Information System (MIDSIS-TROCS) version 3.0 is now available and online.

The development of MIDSIS-TROCS version 3.0 has been overviewed by REMPEC in the framework of the Mediterranean Technical Working Group (MTWG), according to the decision of the Ninth Meeting of the Focal Points of the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), which was held in Malta between 21 and 24 April 2009.

MIDSIS-TROCS is a decision support system designed as a reference for use in the field (downloadable offline application) or office (Online version), aiming at assisting decision-makers to select measures to be taken related to plausible hazardous material marine spill.

It thus provides options for response to marine chemical emergencies and presents them in a structured format which can facilitate the decision given the amount of information available at the start of the event. The main added value of this tool in comparison with other existing HNS tools is the availability of accidents reports linked to a specific chemical. The chemical data gathered in the tool has been updated to reflect the developments which took place at the international level.

The development of MIDSIS-TROCS version 3.0 has been overviewed by REMPEC with the assistance of a Steering Committee comprising the International Maritime Organization (IMO), the International Oil Pollution Compensation Funds (IOPC Funds), the Centre of Documentation, Research and Experimentation on Accidental Water Pollution (CEDRE), Transport Canada (CANUTEC) and the International Tanker Owners Pollution Federation Ltd. (ITOPF).

The Centre takes this opportunity to thank all entities and individuals who have participated to the successful revision of the tool. Link to the tool: http://midsis.rempec.org/

Events

UK, NORTHERN IRELAND: ISAA "ALL IRELAND" SRO ACCREDITATION SCHEME STEERING GROUP MEETING, HILLSBOROUGH, 28 FEBRUARY 2012. More info

UK: OCEANOLOGY INTERNATIONAL – LONDON, 13-15 MARCH, 2012

The scene is set for a highly successful Oceanology International 2012 – over 525 exhibitors from 33 countries in the major exhibition; seven separate one day conferences on the highly relevant topics of ocean observation & forecasting; hydrography & geophysics; navigation & positioning; oil & gas; marine renewables; maritime security; and unmanned underwater vehicles; vessels moored alongside, and accessible from, the exhibition hall; dockside product demonstrations; careers day aimed at attracting new blood to the sectors it serves; and a full programme of associated events.

Being held 13-15 March at London's ExCeL, Oceanology International 2012 is the global forum where industry, academia and government share knowledge and connect with the marine technology and ocean science community, improving their strategies for measuring, exploiting, protecting and operating in the world's oceans. Registration is open at www.oceanologyinternational.com with all elements free to attend.

"Registrations are coming in thick and fast from all over the world, we are noting increased interest from China and Russia – and overall the trend is more people, from more countries," says Event Manager, James Coleman of Reed Exhibitions. "We expect in excess of 8,000 from over 70 countries to join us over the three packed days. The scene is certainly set for a stimulating three days, this year's event is larger both in terms of exhibitors and the space they have taken (525 and 7,700m2 compared to 2010's 515 and 7,070m2). All of the exhibition space has now been reserved or sold with one of the most recent additions to our long list of exhibitors being BP."

The Interspill London 2012 exhibition, which features a highly compelling and topical paid-for conference, is being held alongside Oceanology International with free access back and forth between the two exhibitions. There are over a hundred exhibitors in the Interspill exhibition which showcase the very latest products and services from the oil spill prevention and response, pollution control, specialised vessels and equipment, waste disposal and land remediation, serving offshore, coastal, onshore and the growing land based spill industry. It builds on the success of the previous conference and exhibition held in 2009. The multifaceted event will bring together experts and leaders of the spill industry to share ideas and debate issues of the moment. www.interspill2012.com *BYM Marine & Maritime News* Read more

POLAND: UNCONVENTIONAL OIL & GAS SUMMIT (UGOS), WARSAW, 26-29 MARCH, 2012

UGOS is the most comprehensive international summit with key strategic, economic and geo-political discussions and global case studies from leading industry experts, regulators, oil and gas operators, economists and think tanks. This global summit compiles fresh thinking for a high level discussion on the challenges and opportunities for reducing cost, managing efficiencies and overcoming environmental and technical concerns to realise the full economic potential of unconventional oil and gas developments.

Plus - SHALE WATER MANAGEMENT SYMPOSIUM - Thursday 29th March 2012 More info

USA: AMERICAN MARITIME SALVAGE & CASUALTY RESPONSE, NEW YORK JUNE 27-28, 2012

Attend this highly topical event to discuss the latest developments in rapid and efficient response. ACI will provide and in-depth look into salvage, towage and casualty response in the Americas. More info

CHINA: SHANGHAI 7TH INTERNATIONAL PETROLEUM PETROCHEMICAL NATURAL GAS TECHNOLOGY EQUIPMENT EXHIBITION (SIPPE), 26-28 SEPTEMBER 2012

The SIPPE is a focal project of the Shanghai Municipal Government and the China Council for the Promotion of International Trade (CCPIT). The exhibition is jointly hosted by the CCPIT Pudong Sub-Council, Shanghai Petroleum Society, and organized by the Shanghai AiExpo Exhibition Service Co., Ltd. Over the past six years, with the great support from domestic and overseas enterprises and industrial organizations, the SIPPE has grown greatly in scale year after year, cumulative total 2100 enterprises from over 30 countries and regions having participated in this exhibition. More info