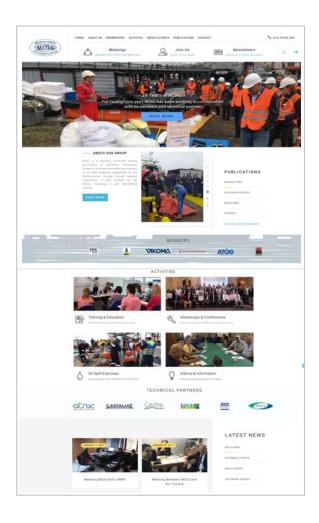


LAUNCH OF THE NEWER VERSION OF MOIG WEBSITE



26 February 2021, The Management Committee is very pleased to announce the launch of the newer version of MOIG website, designed with the aim to make it more user-friendly and easier to navigate for members, technical partners and visitors.

The new version contains several links in the Home Page that can offer members and technical partners the direct access to relevant information related to Latest News, Management Committee Meetings, Latest Newsletter, Covid-19 Update, Members Area, Publications and Contacts. Furthermore, the website includes a newly added option that allows selecting the Latest News by category: MOIG News, External Events and Upcoming Events. It also contains a small photo gallery illustrating the range of training courses, workshops, conferences and oil spill response exercises performed over the past seven years; in cooperation with members and technical partners.

We also integrated all available publications and documents since the initiation of MOIG such as newsletters, brochures and reports as well as agendas of the last events.

For more detailed information, please visit the MOIG website at: www.medoilgroup.org

The Management Committee would be very pleased to hear your thoughts! Please do not hesitate to send us your suggestions for improvements by Email at: info.moig@planet.tn

INTRODUCTION OF THE NEW MANAGEMENT COMMITTEE MEMBER



26 February 2021, the Management Committee is very delighted to introduce Rached Hachemi, new ETAP representative in MOIG Management Committee; instead of Moncef Saidi. Rached accomplished oil industry executive, with almost 30 years career. He started as a producer in the offshore area and the desert of southern Tunisia. Over the years, he covered various management positions and gained experience internationally in all areas of the oil and gas business.

Since 2019, Rached is the Central Production Manager of ETAP and is considered as an industry strategy expert specializing in oil and gas supply fundamentals, asset valuation and due diligence. In addition, Rached has a detailed knowledge of upstream oil and gas

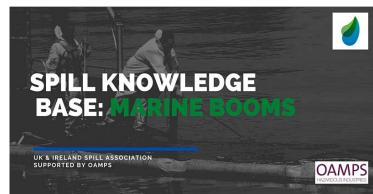
operations, combined with strategy development experience. He also worked with high-tech operator partners of ETAP such as Eni Tunisia, OMV and Shell Tunisia etc... makes him well qualified to help domestic affiliate companies to develop their upstream oil and gas strategies. Rached is currently a member of the Board of MARETAP, CTF and APO.

WEBINAR: KNOWLEDGE BASE: MARINE BOOMS

18 February 2021, the MOIG Director participated; via electronic conferencing platform; in a webinar titled "Knowledge Base: Marine Booms" presented by Mark Orr; Executive Director of UK & Ireland Spill Association Ltd; Paul Rayner, Sales Director from VIKOMA and Mark Shephred; Emergency Response Manager from NRC. This webinar was supported by OAMPS.

Mark Orr introduced the knowledge base and UK & Ireland Spill Association vision for 2021. He underlined that UK & Ireland Spill Association is planning to organize 10 marine knowledge base webinars in 2021. He also presented an overview on the knowledge base topics and dates of the next webinars scheduled to occur during the two next months; which are the followings:

- 27 February 2021: MV Wakashio Part 3 Update and the cleanup Marine Booms that will be presented by UKEirSpill and Poleyco
- 10 March 2021: Marine Plastic Pollution what is currently being done and by whom that will be presented by UKEirSpill
- Late March 2021 : MV Wakashio Part 4 The remediation and some further thoughts that will be presented by UKEirSpill
- 22 April 2021: Inland Spill Day



Paul Rayner started by giving an overview about VIKOMA, the history, the accreditation system in place and the services provided in the design, development, sales, manufacturing, installation, commissioning and training on spill response equipments. He then presented all the components of an oil spill booms and their applications such as the emergency response (short and long deployment), permanent deployment, land based containment, sea, shoreline, rivers/lakes, land an industrial. He also described some basic characteristics to considerer in an oil spill booms, for example: Safety, simplicity, ease of use and cleaning as well as towing, oil containment efficiency compatibility with other booms systems, weight, and resistance to oil/salt/fresh water /UV light an abrasion and salt.

Paul Rayner presented many types of oil spill booms such as fence, air filled, foam filled, self inflating, shoreline sealing, POD, fire, debris and chemical resist. He explained the main characteristics of each boom highlighting both positive and negative points: Simple to use, quick to deploy, strong, flexibility, easy to clean and repair, small storage volume, low training requirements; for positive points, bulky-high storage volume, weight, difficult to handle and recover, rigid-poor flexibility, no good in waves, ease to damage, cost, high training requirements; for negative points. He then described the type of materials, connectors and storage of oil spill booms and a list of considerations to be taken into account such as: Safe and ease of use, weight, strength, size, portability, resistance, cost, cleaning, training and maintenance requirements. He concluded by presenting some repair methods of oil spill booms based on using cold glue, hot air, mechanical seals and stick patches.

Mark Shephred started by explaining the use of boom highlighting that containment at source minimizes the spreading risk of spill to sensitive areas. He talked about shoreline operations and emphasized the importance of pre-planning to protect shorelines. He then presented all the possible configurations of offshore booms: In "U", "V", and "J"; and underlined that offshore operations required suitable vessels and trained and competent personnel.

Mark Shephred stated that proper pre-planning is paramount to a successful response and indicated that some information shall be known and considered in advance to ensure a good pre-planning, and thus an effective response such as the operating platforms or environments where the deployment is taking place, the jetties or shorelines to operate from, the availability of support infrastructures (crane and forklift). He emphasized some safety issues to consider related to weight, noise, lifting arrangements, hydraulic lines, trained & competent responders and the use of volunteers. He concluded with a case study on training deployment of 250 m offshore boom which showed some weaknesses related to team inexperience, positioning of the boom on deck, type of vessel used and the equipment damage.

SEMINAR: DISPERSANT EFFECTIVENESS MONITORING - SURFACE AND SUBSEA

17 February 2021, the MOIG Director participated; via electronic conferencing platform; to seminar titled "Dispersant Effectiveness Monitoring – Surface and Subsea"; organized by Oil Spill Response Limited (OSRL); technical partner.

This seminar was presented by OSRL Dispersant Core Group composed of Ken Church; Deputy Aberdeen Manager, Bethany Graves; Aberdeen representative and Dr. Rob Holland; Development & Assurance Lead.



Ken Church started with video on oil spill dispersants showing the composition and behaviour of dispersants and how they work; when in contact with the oil slick. He presented the subsea dispersants application highlighting that they can be used in most weather conditions. He gave an overview on the monitoring techniques of dispersants based on field "Shaky Bottle" Test to evaluate their effectiveness.

Bethany Graves introduced the Special Monitoring of Applied Response Technologies (SMART) protocol developed by USCG and NOAA in 1997 and updated on 2006.

Bethany Graves underlined that the SMART protocol has been designed for used within an incident command to assist decision making. She also presented the SMART Tiers explaining that Tier 1 is dedicated to visual inspection, Tier 2 to single depth monitoring and Tier 3 to multiple depth monitoring.

Bethany Graves showed some photos illustrating Tier 1 monitoring techniques based on visual inspection and describing the effective and ineffective use of dispersants. She concluded by presenting a Log; detailing the visual dispersant monitoring observer.

Ken Church described the fluorometry analytical technique used for Tier 2 single depth monitoring to detect the fluorescence intensity of oil particles in water. He provided an overview on the fluorometry instrument (C3), highlighting its benefits such as lightweight, lower power requirements, ease of set up and use as well as providing real time results.

Ken Church presented the Tier 3 monitoring techniques; which consists of monitoring the water column and sampling at multi depths. He explained the objectives of Subsea Dispersant Injection (SSDI); which are to reduce aerial Volatil Organic Compounds (VOCs), to prevent and reduce the potential for floating oil to impact sensitive environmental resources and to optimize the potential for microbial biodegradation by decreasing oil droplet size.

Ken Church concluded by explaining the three SSDI monitoring phases: The first phase is designed to confirm the effectiveness of the dispersant near the discharge point, the second phase is devoted to the characterization of dispersed oil concentrations at depths in water column and the third phase is dedicated to detailed chemical characterization of water samples such as: Conductivity, Temperature, Salinity with depth, Dissolved oxygen O₂, Turbidity and Laser In Situ Scanning and Transmissometry "LISST".

Dr. Rob Holland delivered a presentation titled ""Developing Technologies". He introduced the Autonomous Underwater Vehicles (AUVs) and their applications. He stated that AUVs can be mobilized rapidly and can be operational soon after spill events have been identified, communicating near real-time information to a secure web-portal. He highlighted the AUVs potential roles in support of dispersant operations; able to detect hydrocarbons and also to measure conductivity, temperature, depth and current.

Dr. Rob Holland concluded with an overview on OSRL'S Autonomous Underwater Vehicles capability-Blue Ocean Monitoring Ltd Call-Off Agreement.

WEBINAR: لا يوجد ما يسمى بالتدريب السيع - NO SUCH THING AS A BAD EXERCISE

10 February 2021, the MOIG Director participated; via electronic conferencing platform; in a webinar titled "No Such Thing As a Bad Exercise - "لا يوجد ما يسمي بالتدريب السيئ presented by Mohamed Darwish Moustafa; Spill Response Specialist from Oil Spill Response Limited (OSRL); technical partner.

Mohamed Darwish Moustafa started by highlighting the importance and necessity of exercises that should be viewed as a good opportunity to test preparedness for all involved parties in case of oil spill incidents. He presented the different types of exercises such as desktop, workshop, walk through, full scale incident management and remote/virtual. He explained the exercise fundamentals that consist of setting in advance the date of the exercise in order to plan it properly, defining 03 to 05 objectives at most and operating on a Plan-Do-Review cycle. He advised participants to refer to IPIECA/IOGP Guide for oil spill exercises – Version 2014.



In addition, Mohamed Darwish Moustafa provided crucial information on what works well in both planning and execution of exercises such as the selection of realistic objectives and scenario, the conduct of field deployment prior to exercise, the request of advice from experts and the conclusion of exercises by a short debriefing. In contrast, he talked about what hasn't worked so well in exercises that requires additional attention such as the complexity of exercises, the setting of larger number of objectives, the management of the unknowns and the omission to provide some information that may have highly negative consequences. Regarding the virtual exercises. He described the key issues that could be faced related to choice of the communications platforms, amplifier of poor process and IT. He also provided some advices to ensure the smooth conduct of virtual exercises.

Mohamed Darwish Moustafa concluded with response learnings identified by OSRL during Covid-19 pandemic and the level of complexity; when a major spill is combined with the current pandemic in terms of the availability of normal local logistic services and provisions from one side and from another side the Covid-19 spread factors; expected to circulate in the local community related to logistics issues; when they see a team of technical experts and responder arriving in their area.

CONGRATULATORY MESSAGE



05 February 2021, It is a great pleasure that we congratulate our colleague and Member of MOIG Management Committee; Malek Kallel, who was nominated the Health, Safety, Security and Environment (HSSE) Manager at the Society of Research and Exploitation of Petroleum in Tunisia (SEREPT).

The Management Committee Members were extremely thrilled once they heard the news.

Malek is the SEREPT Representative in MOIG Management Committee since 2012. He is a team member of SEREPT Emergency and Crisis Response. He participated actively in the updating and the development of Emergency Response Plans and especially the Offshore Oil Spill Contingency Plan. Malek also assisted the operational teams Offshore and Onshore to

the emergency preparedness by coaching and organizing many drills and exercises. Everything he has done and accomplished at SEREPT and in MOIG Management Committee has led to this point and he truly deserves it.

The Management Committee Members wish Malek all the best of luck in his new position and have no doubt that he will excel in this role and make everybody proud.

WEBINAR: SPILL KNOWLEDGE BASE SKIMMERS

10 February 2021, the MOIG Director participated; via electronic conferencing platform; in a webinar titled "Spill Knowledge Base Skimmers" presented by Mark Orr; Executive Director of UK & Ireland Spill Association Ltd; Marc van der Zwan; Oil & Chemical Pollution Expert from Zwanny Ltd and Gareth McCorkill; Business Development Executive from Ambipar Response. This webinar was supported by OAMPS.

Mark Orr started by introducing the knowledge base and UK & Ireland Spill Association vision for 2021 that consists in sharing their member's world leading knowledge and enables them to be found, accessed and shared and as results enable knowledge to be increased. He underlined that UK & Ireland Spill Association is planning to organize 10 marine knowledge base webinars in 2021. He also presented an overview on the knowledge base topics and dates of the next webinars scheduled to occur during the first semester 2021; which are the following:



- 18 February 2021: Marine Booms, types available, where they should be used and how to use them that will be presented by Paul Rayner-Vikoma and Mark Shephred-NRC
- 10 March 2021: Marine Plastic Pollution what is currently being done and by whom that will be presented by UKEirSpill
- 24 March 2021: Absorbents: What they are, how to use them that will be presented by Mark Carlton-Darcy and Responder-TBC
- 14 April 2021 : Marine Dispersants : What is available, where and how to deploy them that will be presented by Ayles Fernie-OSRL
- 22 April 2021: Inland Spill Day
- 19 May 2021: Temporary Storage Tanks for use in spill response

Marc van der Zwan began by defining the skimmer; as a mechanical product that is used in marine or industrial applications to collect hydrocarbons, other oils or even duckweed. He explained that skimmers can operate with ship hydraulic and diesel hydraulic power pack, adding that there are a number of different powers such as pneumatic, electrical and pump power/vacuum trucks. He introduced the marine and industrial skimmers by providing tangible illustrations of their practical applications related to locations and types of oils. He pointed that marine skimmers can be used in nearshore, beach, port, marina locations, offshore and artic/ice conditions. He underlined that industrial skimmers can be used in industrial application canal, river, stream, ditch and lake.

Marc van der Zwan presented a wide range of Lamor marine skimmers such as Minimax 25, Manta Ray, Foilex Micro weir, Rock cleaner, Marine 50 m³/hrs, Brush chain LFF 100, large weir 50 m³/hrs, Larger 50 m³ + mop skimmer, Larger 50 m³ + bucket skimmer. For the industrial skimmers, he presented the oleophilic, Markleen MS 10, MN 12, mop type, weir skimmer for industry, sunctions and belt skimmers.

In the same context, Gareth McCorkill delivered a presentation titled "Things to think about when choosing a skimmer". He introduced the different types of skimmers and their applications such as the oleophilic, weir, mechanical and vacuum skimmers. He highlighted that the vacuum skimmers are very good for the shoreline. He also showed a diagram representing the oil viscosity as a function of the optimum recovery efficiency, which indicates that for oils having low viscosities; the weir and oleophilic a skimmers offer a high recovery rate of oil; exceeding 70 %.

In addition, Gareth McCorkill talked about skimmer snags highlighting their advantages, especially in terms of ease of set up and use, lifting, robustness and wipe-clean. He concluded by Case Study – Exploration related to whilst testing a slug of oil entered the marine environment, the recovery by wax of fox tail and natural sorbents-floating sea grass.

WEBINAR: ONE YEAR ON: WHAT HAVE WE LEARNED? PROPERTIES OF LOW SULPHUR FUEL OILS

04 February 2021, the MOIG Director participated; via electronic conferencing platform; in a webinar titled "One Year on: What Have We Learned? Properties of Low Sulphur Fuel Oils"; organized by Oil Spill Response Limited (OSRL); technical partner. This webinar was presented by Paul Gunter, OSRL Consultant, Silje Berger from the Norwegian Coastal Administration (NCA) and Fanny Chever from the Centre of Documentation, Research and Experimentation on Accidental Water Pollution (Cedre).



Paul Gunter started by introducing OSRL and its members and gave an overview on the previous webinar 1 on Low Sulphur Fuel Oils held on 20th November 2020; delivered by SINTEF. He explained the weathering behaviour of "new generation" Low Sulphur Marine Fuel Oils and presented the classification ISO 8217 Fuel standards (2017).

Paul Gunter also summarized the questions asked during OSRL Webinar 1 focusing mainly on response, environmental impacts and behaviour. He also presented the properties and characteristics of VLSFO, HS HFO and LS MGO, from data collected

throughout 2020 such as viscosity, density and Pour Point. He highlighted that measured values for these parameters showed considerable variation in their properties. He also defined the key parameters of oil such as viscosity, density; asphaltenes, Pour Point and distillation profile needed to be taken into consideration that can help spill planning and decision making.

Paul Gunter concluded by presenting the next steps related to OSRL internal knowledge gathering, evaluation, internal knowledge transfer, external dialogue, collaboration and engagements with industry and governments as well as the IMAROS/EPPR-PAME projects; that are already ongoing. The audience feedback will be provided during the webinar 3.

Siljie Berger talked about the previous National projects coordinated by NCA on Low Sulphur Fuel Oils such as the cooperation NCA & SINTEF, characterization and weathering of MGO and ULSFO and the basin-tests of equipments NCA stockpile. She presented the ongoing joint PAME-EPPR project on new low Sulphur fuels, fate and behaviour in cold water conditions.

Siljie Berger also spoke about the organization of this project and its deliveries which include the approach adopted for the preparation of the questionnaire through the IMAROS project, the compilation of knowledge through the industry involvement workshop, the fuel oil sampling methodology, the fate and behavior sampling of 10-12 fuels and the toxicity sampling of 10-12 fuels.

Siljie Berger described the role of partners involved and overall objectives of IMAROS project which will serve to develop recommendations for oil spill response to the new generation of fuels oils, to identify best methods for response at sea as well as on shoreline and to increase knowledge to understand potential environmental impacts from an accidental spill. The project is expected to be completed at the end of June 2022.

Fanny Chever presented the primary results of IMAROS project conducted on 13 oil samples in Cedre laboratories, in order to evaluate their physical-chemical properties such as waxes and asphaltenes contents, density, evaporation rate, Pour Point and viscosity. She explained that the analysis results indicated a high variation in asphaltenes and wax contents as well as a high degree of persistence at sea surface expected for some oils.

Fanny Chever concluded that the use of dispersants may be limited on some oils tested but it looks like more easily to handle for some other oils in case of oil spill.