Oil Spill Response Workshop – Panel Discussion (Summary)

The workshop brought together oil spill response professionals facing new threats that include massive oil leakages from land pipelines and deep-water oil spills, and provided the opportunity for them to share challenges and issues involving oil spill response.

At the panel discussion, following a summary of the six presentations, the panelists answered questions with the aim of agreeing an approach on how to respond to the emerging new threats.

Keynote speech by Dr. Michael O'Brien, ITOPF

Responses to all oil spill incidents are basically the same: spill prevention, shoreline cleanup and so on, regardless of whether or not the incident is caused by a tanker. Future challenges include correct planning, regular training, accurate understanding of the quantity of recovered oil and recovery rate, securing oil spill response personnel and budget and maintenance of equipment. However, the currently available methods are capable of dealing with any type of oil spill.

Lecture by Mr. Nick Hazlett-Beard, OSRL

Data indicates that tanker oil spill incidents have been on the decline in recent years. The Gulf of Mexico incident was handled with dispersant, in-situ burning and mechanical recovery. OSRL was involved in dispersant operations during the incident and mechanical recovery did not seem to be effective in some areas. I worked as a liaison between the Shoreline Cleanup Assessment Technology (SCAT) operations and response staff and considered SCAT to be an effective tool.

Lecture by Mr. Toby Stone, AMSA

During the oil spill from Montara wellhead platform, dispersant operations and mechanical recovery were combined to deal with the incident. An incident analysis team and Montara committee of Inquiry carried out separate analyses of the incident, and Montara committee of Inquiry stated in its report that AMSA deserves credit for handling the incident well. AMSA plans to review 10 years of the National Plan and the NMERA arrangements keeping in mind large-scale oil spills, though low in frequency, such as Montara and Deepwater Horizon, which could have significant impacts.

Lecture by Mr. Alan Allen, Spiltec

While controlled burning is generally used when no other options are available, it proved highly effective during the Gulf of Mexico incident in terms of elimination ratio and economics. This does not mean that controlled burning is a wild card, but it can be one of the major options

as a result of considering various trade-offs under adequate conditions. The most important things during controlled burning are surveillance, spotting and communications.

Lecture by Dr. Ed Owens, Polaris Applied Sciences

In dealing with the Gulf of Mexico incident, we faced the unprecedented challenge of chronic oil leaking over a long period of time. We have therefore arranged for research by Shoreline Cleanup Assessment Technology (SCAT) to bring us to the next level of maintenance and monitoring of the affected areas. Shorelines were dealt with both manually and using sand shakers because of animals and pipelines. The Gulf of Mexico incident will require considerable work over a very long period.

Lecture by Mr. Guan Yongyi and Mr. Han Jungsong, Chinese Maritime Safety Administration

On July 16, 2010, two pipelines exploded in Dalian, spilling thousands of tons of oil. The Transport Ministry and the Maritime Safety Administration activated a contingency plan guide and developed a cleanup action plan before going into response operation. According to the government announcement, the clean-up operations were completed on August 31, which indicates that an efficient command system was in place where the local government supervised the operations and the MSA served as a headquarters, and the entire operation was effective.

Q&A

1 Records show that during the 1979 Ixtoc I incident, oil surfacing from 50 m underwater contained 70% water. How much weathering was observed in the oil coming to the surface from the seabed during the Gulf of Mexico incident? Are dispersants effective for such weathered oil? Also, why did plumes occur? Do they still exist? (Mr. Sasaki)

A The Ixtoc I incident occurred only 200 feet underwater, so the oil was highly emulsified inside the well bore, resulting in 70% water content by the time the oil reached the surface, whereas the Gulf of Mexico incident took place one mile underwater and this caused oil to surface over a large area. So there is a big difference between the two incidents. (Mr. Alan Allen)

Regarding weathering, I want to add that all components below C14 were lost and the oil was a very light medium oil that did not contain any components higher than C45. There were certainly reports of plumes occurring inside the water column; however, no plumes were observed in later research. They may have been present at one time but, at this point, there is no evidence of any. (Dr. Ed Owens)

2 How much is the cost of a recovery operation regarding wellhead injection of dispersant? Did you also research the cost of dispersants application from boats? What do you think about dispersant application becoming a general response treatment for subsea oil spills? (Mr. Seamus Connolly)

A Based on my calculations, the injection would theoretically cost an average of $80 per barrel. When combined with the cost of necessary equipment, the cost is estimated to be several hundred dollars for both surface and subsea applications. Considering the fact that as many as 16 vessels were operating around the clock, the cost will likely rise to $1,000 per barrel. However, I hate to focus solely on the expensiveness because direct injection of dispersant into the wellhead is an extremely efficient and effective method. (Mr. Alan Allen)

As indicated by the cases in the U.S. and Norway, countries are increasingly accepting the use of dispersants in general. If dispersants are not available for use when one day we need them, then there will be a gap in response. (Mr. Toby Stone)

In China, there are no strict regulations for the use of dispersants. Last year, however, the MSA set a rule that dispersants should not be used in water less than 10 meters deep and that no chemical dispersants can be used. (Mr. Han Jungsong)

3 If the Net Environmental Benefit Analysis (NEBA) says that doing nothing is better in wetland and salt marshes in the Gulf area, how should we treat SCAT and STR? I heard that, after the Gulf of Mexico incident, major oil companies established a company to develop a system and equipment to respond to subsea oil spills and that completion of the system is expected within this year. I would like to know more about this if you have any information. (Mr. Miyabuchi)

A At wetlands, there is no benefit from shoreline cleanup, but it is better to allow natural weathering. Measures need to be taken for areas where there are mats of heavy oil preventing new growth. Otherwise, they actually provide nutrients to improve plant growth. (Dr. Ed Owens)

Let me explain the industry efforts being made to contain oil spills on the seabed. After the Gulf of Mexico incident, there has been a refocus, after several decades, on putting domes over the wells. The establishment of a consortium was led by Exxon Mobil and it has put nearly $1 billion into developing a system capable of containing oil spills from both deep underwater and shallow wellheads. (Mr. Alan Allen)

The consortium is the Marine Well Containment Company (MWCC) and seven companies have announced their commitment. (Ms. Alexis Steen)

4 What is the trade-off of using dispersants? Do they have any impact on the environment? Is enough research being done as to what will happen after the response? (Mr. Asbjørn Klausen)

A We do not use dispersants in water areas where there are abalones and seaweeds. We also need to be careful about the use of dispersants in enclosed seas like the Baltic Sea and the Black Sea. However, the media covers oil spill incidents without any knowledge of these things. So, we need to perform verifications regarding large application and subsea application of dispersants and revisit the core research conducted in the past. (Dr. Michael O'Brien)

During my research on a hypothetical oil spill in Galveston Bay, a shallow water area in Texas, I reached the conclusion that the use of dispersant is better in some types of environment as a result of discussion among all stakeholders. We need to work to make good decisions through correct planning in cooperation with local communities and fishermen. (Mr. Alan Allen)

Dispersants break down and dilute oil. The dilution process alone can make leaked oil harmless. However, the use of dispersants has a negative side where mobile animals like fish can escape from dangerously high hydrogen concentration but planktonic organisms cannot move away and become susceptible to it. We need to realistically take into account all possible impacts of dispersant use and the period of impact and actual damage that can be done. (Dr. Ed Owens)

5 What explanations were made to the local communities to gain public acceptance on the use of dispersant in the Gulf of Mexico? (Mr. Maki)

A Countries should discuss the trade-offs of dispersants without prejudgment. As the general public is expected to become more involved in the decision-making process, experts like us need to share our knowledge with them. (Dr. Michael O'Brien)

6 What kinds of equipment do you expect from recovery equipment manufacturers? (Mr. Graeme Hansen)

A It is impossible for a ship to encounter oil unless it travels at an extraordinary speed. Also, considering the difficulty in securing storage for oil that appears out of nowhere containing thousands of cubic meters of water, and monopoly recyclers possibly demanding incredible payment, oil recycling will not likely have a chance of business at least in Australia where there are very few oil spill accidents. However, the situation might be different if booms were made to be faster and the encounter rate improved. (Mr. Toby Stone)

7 Shouldn't something else be done other than research in a situation where it is not yet clear what actually happens after the application of dispersants and what the long-term costs of using dispersants are? (Mr. Asbjørn Klausen)

A I cannot remember ever being in a situation where the decision to use dispersants was based on cost. In relation to this, in addition to the issues involving the business aspects of the spill oil recycling market, there are still unresolved problems with regard to storage and transport of spilled oil to adequate facilities since it is treated as hazardous waste in many countries and facilities because neighbors do not welcome these hazardous waste near their area. New technologies will need to be developed to bring the recovery ratio up to 30–50%. However, this is not a decision made from an economic perspective but is intended to optimize available options. (Dr. Michael O'Brien)

8 I think that you cannot truly understand what we are discussing today unless you participate in the Net Environmental Benefit Analysis (NEBA) or ERA. Although NEBA takes several days or even needs to be repeated several times, I recommend that it be conducted in Japan as well because in most cases, consensus can be reached on an optimum approach.

Regarding the recycling of spilled oil, I think it is a good idea but very difficult to put into practice. (Comment)

9 Let me add one thing on mechanical recovery. I prefer mechanical recovery as long as it is a feasible and efficient choice because I believe dispersants have long-term impacts. (Comment by Mr. Han Jungsong)

Closing Remarks by the Moderator

There are different styles of oil spill response and each has its own advantages and disadvantages. That's why there were so many opinions expressed today. But I also feel that all the participants shared the same wish to minimize damage by oil spills, and PAJ would like to continue to provide opportunities where people can share their expertise.