

# OIL SPILL PREPAREDNESS & RESPONSE IN THE BOHAI BAY REGION – A MULTI LAYERED APPROACH <sup>1</sup>

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## ABSTRACT

*In recent years, the Bohai Bay region has seen increasing activities in the areas of offshore oil exploration and production. This paper looks at the multi-layered approach taken by the oil industry members and the People’s Republic of China (PRC) Government Authorities, to address oil spill response (OSR) preparedness and response capabilities in the region. It documents the OSR activities conducted by EARL and the setting up of OSR equipment Centres. A good and strong approach has been given to OSR preparedness and response capability for the Bohai Bay region, by both the Government and oil industry members. This paper identifies, and suggest further steps needed to ensure preparedness and the capability to deliver an effective response to an oil spill incident in the region.*

## INTRODUCTION

From the first wells drilled by the China National Oil Company in the 1970’s, the Bohai Bay region is now gaining recognition as having significant “world class reserves”. Discoveries have been made both onshore and offshore by the China National Offshore Oil Corporation (CNOOC), and other international oil industry members.

The oil industry members, Government Agencies like the State Oceanic Administration (SOA), the Maritime Safety Administration (MSA) and the State Environmental Protection Agency (SEPA), Regional organizations like PEMSEA (Programme on Partnerships in Environmental Management for the Seas of East Asia) and the International Maritime Organization’s (IMO) Global Initiative program for the NOWPAP region (North West Pacific Action Plan) have all been engaging in a multi-layered approach to build up their oil spill response (OSR) preparedness and capability for the Bohai Bay region in the People’s Republic of China (PRC). The Oil Pollution Preparedness, Response and Cooperation (OPRC) IMO OSR training courses, Contingency Planning and Claims Workshop and Contingency planning assessments and enhancements have been conducted for the region.

## ACTIVITIES

To date, OSR training courses have been conducted by the EARL/OSRL Global Alliance for the following:

**Table 1: OSR Training and other activities conducted from 2002 to 2004 for Bohai Bay region, PRC.**

Type of OSR Activity	Location	No. of Participants—Government & Industry & Remarks
OPRC IMO Level 1 x 5 days x 2 sessions	Tanggu & Peng Lai Field	55 (Industry)
OPRC IMO Level 2 x 5 days x 4 sessions	Tanggu & Yantai	40 (Government) ; 64 (Industry)
OPRC IMO Level 3 x 3 days x 1 sessions	Beijing	9 (Industry)
Claims & CP Workshops x 4 days x 1 session	Tanggu	20 (Government); 26 (Industry)
OSR practical exercise x 1 day x 2 sessions	Tanggu Harbour & Peng Lai Field	22 (Industry)
OSR capability assessment	Zhao Dong Block, Bohai Bay	Consultancy work—review of OSR Plan, etc.

**Total number of participants from Bohai Bay region who have attended EARL’s OSR training—2002 to 2004:**

Government : 60 participants ; Oil Industry : 167

<sup>1</sup> DISCLAIMER: The opinions and views expressed in this paper are solely those of the authors and do not necessarily represent the views of any other party.

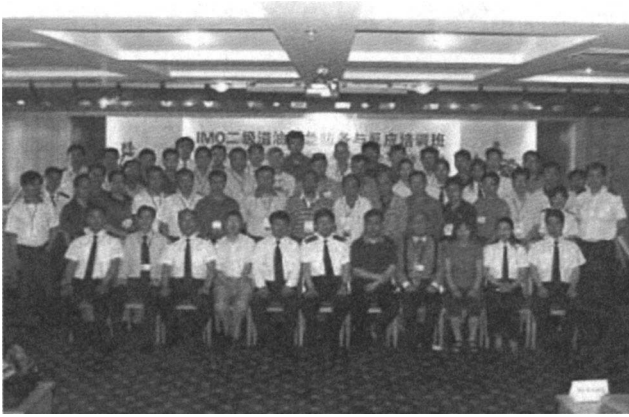


FIG.1 – PARTICIPANTS GROUP PHOTOGRAPH – YANTAI

### OIL SPILL RESPONSE CENTRES IN BOHAI BAY:

Oil spill response Centres have also been set up. The Yantai Oil Spill Response Technical Centre (OSTRC) has been set up and is administered by the PRC's MSA. The Bohai Environmental Services (BES), under the umbrella of CNOOC, was also set up with OSR equipment and trained manpower in late 2002. These Centres add on to the OSR capability in the Bohai Bay region.



FIG.2 – YANTAI MSA'S OSR WAREHOUSE

### RECOMMENDATIONS

**Further steps needed to ensure preparedness and response to oil spills:**

#### a) Training:

- Regular (2 – 3 yearly) OSR training in the various disciplines of the OPRC IMO Levels 1, 2 and 3 is to be conducted for oil industry members and relevant Government Agencies. These training courses should ensure that participants at the end of the courses will be able to respond to an oil spill incident when required. Participants should be suited for the course—i.e. be able to understand and learn enough to assist in the response to an oil spill incident as their job position requires in the emergency. Course Trainers should be competent and experienced oil spill responders so as to be able to impart their technical knowledge and experience to the participants. Course Trainers

should be good communicators. Questions to consider to ensure participants has learned enough to be able to assist in the response to an oil spill incident—Do participants need to be tested? Is competency training required?

- Customized OSR training to suit the needs of the various oil industry members should also be encouraged. Whenever possible, Government Agencies will be invited to participate in these training together to encourage communication and working together. Again, suitable Trainers should be employed in the conduct of these courses and the oil industry should ensure suitable participants attend. Similar questions stated above should be used to ensure effective learning.



FIG.3 - PRACTICAL DEPLOYMENT EXERCISE

#### b) Exercises and Deployment Drills:

- Regular Tier 1, 2 and 3 Table-top exercises should be carried out annually by the oil industry members with all stakeholders participating, especially the relevant Government Agencies. Suitable exercise directors/controllers should be employed in the conduct of these activities. These competent and experienced exercise directors/controllers will use their OSR experience to ensure realistic exercises and deployment drills are conducted, evaluated and learning lessons derived. A realistic “crisis atmosphere” can be properly simulated to let participants have a “feel” of the stresses and issues encountered. At the end of the exercises, the participants will realize the importance and need for a sound understanding of his/her company's and National Oil Spill Contingency Plan (OSCP).
- Tier 1, 2 and 3 equipment deployment exercises should be conducted on a regular basis. Experienced and competent trainers will ensure a proper deployment drill is conducted. Effective deployment techniques can be relayed to the participants and improper and unsafe acts can be easily spotted by the experienced OSR trainer.
- Note: the primary objective for the conduct of the exercise and/or deployment drill is to find “gaps” and learning lessons. It is better to find these during an exercise rather than in an oil spill incident.**

#### c) Consultancy:

- Oil Spill Contingency Plans (OSCP) should be regularly updated. It is a “living document”. It should be regularly reviewed—whenever the nature of the oil handling operations changes. Again, competent and experienced Consultants should be used. They will take a better pragmatic

approach in the review and enhancement processes. They are in a better position to suggest what will work and what might not!

- OSR capability assessment should also be conducted on a regular basis. Besides looking at the OSCP, OSR equipment, the ancillary equipment and logistic support required will need to be reviewed. Site visits will be made to have a first hand look to understand the operations and locations (weather and sensitive areas) involved. Drills can be conducted at this time to ascertain the effectiveness of the equipment and the manpower. Mobilization times will be checked and verified.
- It should be noted that a “familiarization workshop” for all parties that have a role to play in the OSCP should be conducted on a regular basis and whenever the OSCP is reviewed and enhanced. This will enable the parties to know their roles and understand their responsibilities. They can then make preparations (developing their own “little data book” and/or plan) to enable them to fulfill their responsibilities. It is very sad to see a good OSCP being left on the shelf. In an emergency, it is a very sad sight to see adults “running around like chickens without heads” in an Emergency Command Centre—i.e. trying to look busy when not knowing what to do.
- **Note: the primary objective for the conduct of the review is to find “gaps” and enhance the OSR capability. It is to ensure that a credible response can and will be mounted when required. The importance of the use of competent and experienced Consultants cannot be overemphasized.**

#### Usage of dispersants versus containment and recovery

Majority of the crude oil produced in the Bohai Bay region are of the Class 2 type crude oils—API averages around the 20 mark. The depth of water is also relatively shallow—around the 30 meter mark. It has always been a topic of discussions on whether to use dispersants or containment and recovery strategies?

It should be noted that both these strategies have their place in OSR. If it has been tested that the oil is amenable to the proper, approved and effective type of dispersant, and if the location is suitable, then dispersants can be used in the response. This should not exclude the use of the containment and recovery strategy. As we all have experienced, in a spill, the use of most of the OSR strategies will be implemented. What is most important to note in an OSR incident, is determining which strategy and/or strategies to implement, Nett Environmental Benefit Analysis (NEBA) should be used to assist in the determination.

It is always advisable to have the crude that is handled to be tested “now in peace time” to determine whether it is amenable with dispersants and which type of dispersants. The Government Authority approving the use of which type of dispersants should also consider all the other types of dispersants available in the market. The objective of the approval process is to ensure that it is not toxic to the environment.

#### Identifying the Government Lead Agency in a spill response scenario

It is clear to all that in an oil spill incident that involves the off-shore oil exploration industry, the SOA is the Lead Agency with jurisdiction. Similarly in the case when the oil spill involves a vessel, then the MSA is the Lead Agency in this scenario. However, as we all know, in some cases, this boundary of jurisdiction can be not too clear.

For example, an export tanker that is loading from a Floating Storage Offloading facility (FSO) in the Bohai Bay suffers a collision with a coastal tanker. Oil is leaking from all three

parties—i.e. from the FSO, the export tanker and the coastal tanker. Who will be the Lead Agency? It is important to determine this as the responders and spiller will need to know who will be in charge. As we all know, “we can work very effectively under one master only”. Whilst noting that all parties responding have to work together as one unified team, we will still need to identify “who is in charge”. In determining this, all the other parties roles and responsibilities will then be clear, and we can all work together to effectively respond to the spill.

#### Government and oil industry Response Centres

Whilst it is good that both Government and oil industry have set up these Response Centres, the next step is to ensure that these Centres can and will be able to deliver a credible response operation when required. Besides oil spill equipment and trained manpower, they will have to address the following and ensure it is available and in place:

- Pre-prepared ancillary equipment is available to ensure the OSR equipment will work—i.e. proper ropes, shackles, towing bridles, anchors, etc.
- Logistic support—proper deployment vessels, towing vessels, storage vessels, stockpile of approved dispersants, manpower resources, etc., are identified and available.
- Contractual arrangements in place for the above mentioned

The present two Response Centres, the Yantai OSRTC and BES, will need to determine on how they can work together and in which areas they need to supplement each other to enhance the response to a spill. They need to meet regularly to discuss and address jointly common interest and improvements.

#### CONCLUSIONS

It is very heartening to see a good multi layered approach has been made by the Government Agencies and the Oil Industry members in the Bohai Bay region. Whilst it is a good start, this approach needs to be sustained. Governments have a role to play to ensure the country has OSR preparedness and response capability in their country.

A two to three year program of reviews and assessments of the OSCP and the overall OSR capability of both the oil industry member and the Government needs to be implemented. OSR assessments, exercises and deployment drills are to be implemented. All the items identified in the “Discussions” section above will need to be addressed as soon as possible. These activities will ensure the OSR preparedness and response capability in Bohai Bay region will truly be truly effective.

As emphasized, proper tools should be used to drive this activity. Competent and experienced trainers and consultants should be used to conduct these training, exercises and drills and consultancy activities to make it successful. The international Tier 3 Response Centres like the EARL/OSRL Global Alliance are in a position to assist in addressing this. Remember, besides finding out “what went well or is good” in these activities, the primary objective is “what did not go so well and can be improved”.

Finally, it should be noted and congratulations are in order to the Chinese Government Agencies for the interest and support in many of the local and international activities that has been conducted in the past years. The working together of the Government Agencies and the oil industry members in the Bohai Bay region is a good model of the OPRC convention and how “Unified Command” in a response to an oil spill incident, and also in peacetime, can be achieved.

**BIOGRAPHY**

Patrick is a Master Mariner with 18 years sea-going experience. Joining EARL in 1996 as Technical Superintendent, he moved into his current position of Training & Consultancy Manager in 2001. With over 10 years spill response experience (over 30 spills) and conducted numerous training courses and consultancy projects, he assumes Incident Command Manager for the EARL team in spill incidents.