Petroleum Association of Japan

Oil Spill Response Workshop 2009

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Oil Industry Spill Response Arrangements

The oil industry recognised some years ago that there was a need to improve the response to oil spills based on experience gained over the 1970 and early 80's. The key issue at the time was the spills arising from tanker operations either on a routine operational basis or through accidents. To deliver a response that reflected the risk / frequency profile it was determined by the industry that the nature of incidents could be divided into three tiers, as described below.

Tier	Definition
Tier 1	Small operational type spills that may occur within a location as a result of daily activities. The level at which a response operation could be carried out successfully using individual resources and without assistance from others.
Tier 2	A medium sized spill within the vicinity of a company's location where immediate resources are insufficient to cope with the incident and further resources may be called in on a mutual aid basis. A Tier 2 incident may involve Local Government.
Tier 3	A large spill where substantial further resources are required and support from a national (Tier 3) or international co-operative stockpile may be necessary. A Tier 3 incident is beyond the capability of both local and regional resources. This is an incident that requires national assistance through the implementation of the National Contingency Plan and will be subject to Government controls.

As described above tier 1 was the operational spill that might occur as a consequence of routine operations such as one arising from a tank overflow, hose rupture or valve mis-operation. The response to a spill of this nature would be expected to be handled by the facility involved and not require much external intervention, although in reality, in today's climate, the reaction might be limited to just the initial containment of an incident. These spills account for the greatest proportion of incidents by far, but processes and management controls are continuously being devised and implemented by the industry to prevent this type of spill. The impact of these types of spills is generally small, but in the event that the problem becomes chronic, the industry will rapidly face public and government censure to improve performance and minimise their occurrence. However, it should also be remembered that a small spill of very persistent oil in a highly sensitive environment

might have a major impact, it is also clear that even small tier 1 spills are becoming increasingly more expensive as demonstrated below.

Incident	Year	Oil Spilt	Total Cost $	Cost $/ tonne
Cosco Busan (USA)	2007	83	80,000,000	**$963,855**
Prestige (Spain)	2002	63,000	1,443,000,000	**$22,904**
Erika (France)	1999	19,800	247,500,000	**$12,500**
Sea Empress (UK)	1996	73,000	55,200,000	**$756**
Braer (UK)	1993	84,000	78,000,000	**$928**
Exxon Valdez (USA)	1989	37,000	1,950,000,000	**$52,702**
Amoco Cadiz (France)	1978	223,000	225,000,000	**$1,009**

Source: Itopf

The tier 2 incident is more serious, and in the main, the response will be coordinated by the government and use combined resources from either local industry or Government. In mature oil provinces there is often the opportunity to establish mutual aid agreements with other operators or the governments may have resources. In other locations there may be very few additional resources, in these instances it is usual to see the tier 1 capability extended to fill the gap, the size of this additional capability should be governed by the time it takes for any additional resources to become available and be able to be put to use. Tier 2 is the most difficult capability to define and requires a true understanding of the actual meaning of what a response capability really is to be sure it can deliver an effective response. It is not based on simply numerical equipment capability but a complex mix of equipment, manpower, organisational structure, training, logistics organisation and readiness. To try and simplify it into its component parts does it no justice.

The tier 3 response facility provided by the oil industry is aimed at providing support to these local resources should they be required. These responses do not operate in a vacuum and can only be of value if integrated into the overall activity and with the acceptance of the host country. If they are not, then they cannot assist in delivering the most effective response possible.

The inertia in response can come from a number of areas.

- Failure to recognise the severity of an incident and the need for additional resources
- Failure to arrange the processes to permit access for equipment resources of personnel
- Failure to integrate the resources available into a coherent response plan
- Lack of decisive action when assessing initial event and mobilising resources in a timely fashion.

Experience has shown that all of these factors play a part and often make an appearance in incident debriefs. The ratification of the International Convention on Oil Pollution Preparedness Response and Cooperation, (OPRC1990) should meant that those acceding to the convention have the plans and arrangements in place to facilitate response cooperation, in reality the processes and legislation have not been sufficiently well developed to permit this to occur.

Oil Spill Response Limited was established in 1984 as a non profit making industry cooperative to provide such response support. It currently has over 30 oil companies as participants who are in effect shareholders in the organisation. In addition there are over 70 Associate members who, rather than be shareholders in the organisation, simply require services from us.

In the early days, the organisation merely provided response equipment and operations staff to deploy it. Over recent years the role has extended to provide not only this support but technical expertise to the industry to assist in determining the response strategies. This has come about due to the changes in the industry and an increasing demand from our members to deliver as much added value as possible in return for their participation. The profile of staff has changed with an increasing emphasis on technical advice and response strategy support being provided in addition to the old response equipment deployment roles.

To deliver its response capability Oil Spill Response operates two Hercules aircraft, these aircraft in particular are used as an operating for the ADDS pack, (Aerial Dispersant Delivery system), one of our principle response tools well suited to the treatment of large marine oil spills when they are amenable to chemical dispersion in environments where the strategy can provide a benefit to the environment through its use. The organisation also operates considerable stocks of offshore response equipment and shoreline protection and clean up equipment. This is stocked in our bases in Southampton, Singapore and Bahrain. In addition to the Hercules aircraft, Oil Spill Response uses the services of a dedicated broker to deliver equipment. This is packaged in aircraft style containers and if fully documented and packaged in a way that it can be transported to the spill site. During 2008 over 1000 tons of response equipment and emergency response resources were deployed from Southampton and Singapore in response to over 30 incidents around the globe.

The oil industry has changed considerably over the years and from the inception of Oil Spill Response the structure of our member companies and nature of the emergencies that we face has changed. The organisation was originally conceived to deal with international shipping emergencies, thankfully in terms of the tanker industry the frequency of these have greatly declined, due to increased legislation, better regulation and management and a renewal of tanker tonnage due to the consequences of these changes. This requirement was driven from the corporate parts of the oil industry where shipping generally resided, what we have seen more recently is a need to engage our members in a different way, as due to the changes in industry, the oil industry operational business units now equally represent our customers, this is particularly true of the upstream industry.

To do this we have opened offices in Bahrain, Aberdeen Indonesia and have increased our local footprint in West Africa and Libya. In today's' climate it is no longer acceptable to sit at home and expect to be called, the drive is for increased members support, contact and added value.

In the past year as mentioned Oil Spill Response has been involved in multiple incidents, on two occasions during the year responding to five spills simultaneously. Two particular incidents of note in the past 18 months in the region were the Heibi Spirit in Korea and secondly the Pacific Alliance in Malaysian Waters. Each provide different opportunities to understand some of the issues in spill response.

Heibi Spirit

The Heibi Spirit was interesting as it demonstrated the impact of decision making on the effectiveness of a dispersant response. The vessel was damaged in a collision whilst at anchor in severe weather and was holed by a drifting crane barge. Oil Spill Response in Singapore became aware of the incident very early after it occurred and offered its resources. Local Government resources were quickly deployed as an initial response and initially believed to be sufficient to deal with the situation, a poor weather situation meant that the oil spill, whilst only being a total of 10,300 tons of various grades of crude, spread quickly and impacted large areas of the coastline, impacting high value tourist areas, fisheries and sensitive coastal habitats. There was an ensuing public outcry and backlash and After a period of more than a week a request was made by the Government for the aircraft from Singapore to deploy to Korea to assist the spraying operation. The initial reaction was to advise against the deployment as the oil had spread so far and the layer thickness become so thin that it did not present a viable target. The request from the government was repeated and the aircraft deployed. The overall response value of the operation was limited and a total of just 4 tons of dispersant was able to be placed on the target. The episode goes to prove a number of issues in spill response

1) Decision making in spill response should be rapid and integrated
2) Early decision are needed for effective intervention.
3) Politics can quickly overwhelm technical response decisions as a situation deteriorates.

Pacific Alliance

The Pacific Alliance grounded in Malaysia waters in November 2008. The damage to the ship was significant with the hull being penetrated in way of ballast tanks. The pump room was flooded preventing an easy ship to ship transfer operation to remove the cargo and a careful salvage operation was carried out to lighter the ship and remove it from its was grounded location. Following this, the ships pump were brought back into action and the ship safely discharged without a drop of oil being spilled. During these lightering and salvage operations oil spill response resources including at sea recovery resources, the ADDs pack in Singapore, an Ag tractor crop spraying aircraft in Malaysia, an additional 50 tons of dispersant to complement the existing 100 tons of stock in Singapore, shoreline response equipment from Pimmag in Malaysia and Singapore. The whole exercise was conducted in a controlled manner with all of these resources available to mitigate any spill risk. All in all the response provided a very model of response readiness.

The presentation will detail the discussion on Oil spill response and a limited pictorial record of the incidents described.