

PLANNING AND TRAINING FOR TIER 1 RESPONSE IS FUNDAMENTAL TO EFFECTIVE RESPONSE AT ALL LEVELS¹

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ABSTRACT

The oil industry concept of tiered preparedness and response has long been established as a valuable model for developing an appropriate response structure, with capabilities commensurate with oil spill events and their associated consequences. A Tier 1 incident is typically referred to as an operational one occurring at or near a company's own facilities, as a consequence of its own activities. An individual company would typically provide resources to respond to this type of spill. The Tier 1 part is often seen as the smallest and thus the least significant and this Paper asks whether enough planning and training is done at this level.

Different oil industry activities encompassing exploration, production, shipping transportation, oil handling facilities and even pipelines, give rise to a varied and broad range of scenarios that call for different Tier 1 solutions. In any spill event, speed and efficiency of first response, and the awareness of the integrated tiered solution that ensures an appropriate call for additional resources when required, will make a significant difference to the effectiveness of the overall response. Thus we need to spend time and effort planning well and training at the Tier 1 level.

This Paper describes some of the possible Tier 1 scenarios that may be applied to the planning process and the key issues that need to be considered, to ensure Tier 1 capabilities are appropriate, effective and robust, and can be relied upon to support the tiered escalation of response.

TIERED RESPOND CONCEPT

The oil industry concept of a tiered preparedness and response arrangement has long been recognized as a powerful tool for determining how to establish a degree of preparedness to respond to oil pollution. There are clear benefits in being prepared through the contingency planning process, to ensure the full range of potential oil pollution events have been identified, their consequences assessed and the necessary response strategies developed. The tiered approach to planning offers a means to encourage appropriate preparedness measures being put in place by a variety of organizations, with an efficient investment in resources, so that response may be rapid, effective and scaled to suit individual pollution events.

IPIECA has defined the tiered approach as follows¹:

- Tier 1: operational-type spills that may occur at or near a company's own facilities, as a consequence of its own activities. An individual company would typically provide resources to respond to this type of spill.
- Tier 2: a larger spill in the vicinity of a company's facilities where resources from other companies, industries and possibly government response agencies in the area can be called in on a mutual aid basis. The company may participate in a local co-operative where each member pools their Tier 1 resources and has access to equipment that may have been jointly purchased by a co-operative.
- Tier 3: the large spill where substantial further resources will be required and support from a national or an international co-operative stockpile may be necessary. It is likely that such operations would be subject to government controls or even direction. (It is important to recognize that a Tier 3 response may be close to, or remote from, company facilities).

There are several criteria in these definitions which serve as useful guides when considering contingency planning at these tiered levels, for example, operational spill volumes, the vicinity / remoteness of operations, pooling of resources and the availability / accessibility of national / international support. However, these guidelines cannot be applied rigidly in practice, and must be considered carefully, as in many cases not all elements of this cascading structure may be present, or can be relied upon to be effective. Within this tiered concept, there is also an assumption that one tier cascades effectively into the next. If the cascading is to work, then the plans for Tier 1, Tier 2 and Tier 3 events need to be properly integrated to ensure that an effective response may be made, matching resources to the seriousness of the incident underway.

Tier 3 resources may be readily determined as being absent / present at national level, and if required may be supplemented with international resources through appropriate mechanisms. Tier 2 resources however, are much less well defined and usually they are often only partially available in practice, or indeed may be entirely absent. This is a very important consideration when planning for Tier 1 events, as the boundary between what is feasibly a Tier 1 and a Tier 2 oil spill is blurred and most likely impossible to define with certainty. Interpretation is therefore

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necessary in many cases, particularly when considering the degree of preparedness for an event occurring at sites or facilities that are remote from a source of assistance. This may well call for a level of preparedness and a response capability over and above the strict Tier 1 definition noted above. The traditional view of a Tier 1 plan, which comprises a modest amount of resources and a few trained equipment operators to deal with minor operational events, does not therefore paint the complete picture.

RISK ASSESSMENT

The essential first step in determining the level of preparedness that a Tier 1 plan might encompass, is the risk assessment. This term is often used somewhat loosely, and describes the process of looking at the potential oil pollution events that might conceivably arise from a range of site activities. Strictly, risk assessment is the analysis of the different oil spill events that may arise and an evaluation of the consequences of their occurrence.

Many risk assessments carried out however, simply identify to varying degrees of sophistication and accuracy, both qualitatively or quantitatively, the probability of an event and its potential size. Commonly used terms include 'average most probable', 'maximum most probable' and 'worst case scenario', together with a commensurate spill size, often quoted as a possible range, to describe the events that may take place. This is a useful start, but the possible size quoted only addresses in rough and potentially misleading terms, the issue of what consequences might arise from such an event occurring.

For example, a large spill of light condensate from a production platform located a long distance from shore, may well evaporate before it has moved far enough on the sea surface towards shore to affect any significant environmental resources. Similarly, a spill of crude from the same facility may be carried out to open waters where it will naturally dissipate and again not significantly affect any resources. On the other hand, a spill of a more persistent crude oil, even of relatively modest size, may, in different circumstances and prevailing conditions, be carried close or on to the shore, where it can affect a range of resources. Each of the situations described, if they might arise at a facility, needs to be developed into a planning scenario, by considering the oil type and properties; behavior and fate when spilled; prevailing tidal, current and weather conditions; and proximity and sensitivity of environmental resources that may be potentially affected. It should be noted in this regard, that the term 'environmental' in this context, is being used to encompass a whole range of resources, including socio-economic, as well as strictly environmental ones.

ALLOCATION OF RISK AND PREPAREDNESS

It is rarely possible, if ever, to assess the consequences of an oil spill in quantitative terms with any certainty or meaningful accuracy. Further, no two spills will ever be entirely the same, and any one of the factors noted above, such as oil type, as already illustrated, can substantially affect the consequences and overall outcome. However, in determining the potential seriousness of an incident, the consequences do need to be considered carefully, as they can have far-reaching implications for the degree of preparedness deemed prudent/appropriate to put in place at the facility Tier 1 level.

Straightforward planning matrices are useful in this context, using basic thresholds, to identify whether an individually identified potential oil pollution event may have a significant consequence on any particular feature chosen. These features could encompass such basic items for example, as there being a shoreline impact, the need to involve outside agencies, or there being impacts on a particular sensitive site etc.

At a more practical level, an important aspect to consider when determining the level of Tier 1 preparedness, is the degree to which there are reliable arrangements for dealing with particular spills, should they extend beyond the strict definition of a Tier 1 incident. This could arise in situations for example, where there are no Tier 2 mutual aid arrangements in place. An example which is apparent in some instances even when a number of oil companies are operating neighboring production fields off a country's coast, is that in the event of Tier 1 resources being needed to be transferred from one company facilities to another, this cannot always be implemented in practice. Another example would include a particular government agency responsible for dealing with these situations, that in practice is unable or unwilling to do so.

Facing these and other similar situations, a facility operator may well decide that it is appropriate or indeed necessary to extend the strict definition of Tier 1 preparedness and response, to some further degree, to ensure that a proper and effective response may be made. The degree to which they might do this, will depend on a range of factors special to the circumstances under consideration and the organization's own policy toward risk management. The tiered response concept remains entirely valid, for all scenarios that this may entail. But it is important to recognize that the actual Tier 1 capabilities put in place for any particular facility or operation, can vary widely, being open to interpretation based on a whole range of issues, factors and drivers.

Where some form of Tier 2 pooling or mutual aid arrangements may be present and available, the Tier 1 plan should make due account of them, providing the mechanisms for scaling up the response and cascading in the appropriate, additional resources. Otherwise, there will be no means of making use of them when needed, breaking the cascading structure. Thus a Tier 1 plan cannot be viewed in isolation as a stand-alone plan. It must go beyond the classically defined operational spill at a facility, to embrace events that call for a scaling up of the response to deal with incidents that have more significance and it must demonstrate the means of these additional resources being integrated into the field of operation.

This is even more important when considering Tier 3 events. Referring back to the IPIECA definitions earlier, and particularly the note for Tier 3 incidents, such events may be local or remote to a particular facility. This reinforces the position that any Tier 1 plan should take proper account of issues relating to the cascading in of additional resources, to support an oil pollution event more serious than Tier 1.

IMPLEMENTING A TIERED RESPONSE

A Tier 1 plan must be adequate to support a stand-alone response to an incident that affects solely the facility in operation. This is a prime function of a Tier 1 plan and this is the conventional understanding of such an arrangement. All response resources including manpower, equipment and appropriate management, must be in place to ensure such an event is dealt with promptly and effectively. As has been described earlier, these plans and resources may vary widely, depending on the individual circumstances. However, as also indicated above, preparations must also be in place and suitable to go further than dealing with just this conventional Tier 1 event. The plan has to be effective in launching a Tier 2 and a Tier 3 response, and for these kinds of incidents, many of the resources involved at Tier 1 will still be effective, and in some cases essential, to the success of these scaled up responses.

There is a popular misconception of Tier 3 incidents, and particularly in relation to Tier 3 service providers, that in the event of their being needed, and once mobilized, a facility or government agency may then rely on that responder to organize and solve their Tier 3 problem. This is not the case, and the substantial

resources and effort needed to deal with such major incidents, calls for an equally substantial support and effort on the ground to ensure the Tier 3 response is supported and fully engaged with the local situation. By their very nature, Tier 3 resources, particularly for international organizations, will need local support, which invariably will be derived at least in part from the original Tier 1 starting base. A broad range of local resources is needed to support a Tier 2 and Tier 3 response. These would include local contractors, knowledge from local fishermen on weather and sea conditions, experts on a range of local environmental resources and local people to assist in shoreline clean-up. This is not intended as a comprehensive list, but more, to serve as illustration of the variety of local resources that will be identified in the Tier 1 plan, that would be useful, or in some cases essential for a response to a larger event.

Essential at the outset of any oil pollution event, therefore, is a sound assessment of the severity of the incident. This will take into account not just size of the spill but its true potential severity and consequences. This will support a decision on whether the spill may be dealt with entirely alone by the facility, some pooling of resources from the local area is needed, if available, or for there to be a call for national or international assistance.

The importance of local, Tier 1 planning, resources and capabilities are very important in their own right. They are also crucial for the cascading of resources in to the area, to support a response extended beyond the Tier 1 scale. The Tier 1 oil spill contingency planning process and the resources that need to be considered, therefore go beyond just a modest range of resources and a few trained equipment operators and must include plans for the escalation of response, logistics support, management structure, resource integration and use of local solutions and resources.

A whole range of skills and knowledge is needed and the training required at the Tier 1 level should extend well beyond

the traditional, restricted view of the need for an awareness of oil, basic health and safety and instructions on the use of a boom, skimmers and some sorbents. The Tier 1 plan, its resources and its organization should be seen as an integral part of the whole tiered response arrangement. All those involved should have a solid foundation across the same extensive range of technical issues as that provided to responders that are envisaged to be involved at Tier 2 and Tier 3 levels. As has been shown already, the actual planned definition of the different tiers will need to be interpreted carefully to suit the conditions prevailing at the facility or site under scrutiny. Likewise, for the cascaded response arrangement to be effective, broad training of all personnel in this transition from one level to another is essential.

BIOGRAPHY

Richard is a Chartered Civil and Structural Engineer with a Masters Degree in Environmental Technology. After 9 years in international consultancy, he worked at ITOPF as a Senior Technical Advisor responding to spills and offering training / advisory work in 30 countries for 8 years. Joining OSRL in 2002, he manages the Alliance training and consultancy services.

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