DEFINING BEST INTERNATIONAL PRACTICES FOR OIL SPILL RESPONSE PLANNING

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ABSTRACT

No formal international standards or "best practice" guidelines exist against which oil spill response or contingency plans (OSRPs) can be evaluated. Recently, we developed a two-phase approach to provide the basis for a review of the adequacy of the draft OSRPs that had been prepared for the Baku-Tbilisi-Ceyhan (BTC) Pipeline project and of the state of operational oil spill response readiness. Our approach involved (a) an initial detailed examination of the content and format of the plans, based on the concept of a forensic audit, and (b) an assessment of the potential for the implementation of a feasible and successful response operation. The review process involved a systematic evaluation of seven planning and seven response elements and of specific information items that we consider necessary for a complete OSRP. An information list matrix was used to apply a forensic methodology that could be used as a checklist against which each of eighty specific line items could be evaluated. In the absence of any published standards for the format and presentation of the information within an OSRP we reviewed internationally recognized guidelines and developed a functional and logical format that could be recommended for the organisation and presentation of this information. Finally, as the generation of an information base for an OSRP is no guarantee that the plan will result in an effective and well-managed response, we evaluated response adequacy and spill readiness in the context of the purpose and scope of response planning by reviewing eleven relevant questions. This systematic approach provides a framework and a methodology that can be applied in a generic manner to define best international practices for future OSRPs.

1 INTRODUCTION

An Oil Spill Response Plan (OSRP) or Contingency Plan (OSCP) is required for virtually every oil exploration, production, handling and transfer operation. The format and content of these plans typically conform to national or regional government regulations. The purpose of these plans is generally two-fold: (a) to demonstrate to the regulatory agency(ies) that the operator understands the risks associated with specific operations and has a management system and appropriate resources to respond adequately to oil spills, and (b) to provide a management tool defining the procedures that would be implemented following an oil spill. The review of an OSRP/OSCP

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begins with a checklist of the content to ensure that regulatory requirements have been satisfied. A separate issue is to evaluate whether the operator is ready to cope with an oil spill, in terms of the actual response readiness and capability. In other words, there is a distinction between what is contained in the plan and what the responders can do in the field. A key challenge is how to determine the actual state of readiness of the response team.

Many organizations recognize that an OSRP/OSCP is primarily a management tool that is of limited value to the response team(s). Frequently, separate tactics, response, or containment manuals are prepared to provide tactical and logistical guidelines for the initial stages of a response. These manuals or guidelines supplement the OSRP/OSCP and typically contain valuable information for the management decision makers.

An assessment of oil spill plan adequacy involves review of the OSRP/OSCP and any associated tactics/response manuals or guidelines. In addition, operational readiness typically is demonstrated by table top and field exercises that test the management and response team. No standards or "best practice" guidelines exist against which to evaluate oil spill plan adequacy or response readiness. Recently, we developed a two-phase approach to provide the basis for a review of the draft OSRPs for the Baku-Tbilisi-Ceyhan (BTC) Pipeline project and of the state of operational readiness. This review was required to ensure compliance of the project with respect to the agreements between the project funding agencies and the national governments associated with the pipeline route and the marine export terminal. This paper describes the approach developed for the BTC pipeline review process as a model with broader applications for a wide range of operations on large and small scales.

2 REVIEW PROCESS

There is no single standard for OSRPs but there are a number of recognized guidelines, conventions, and laws (IFC[3]; ISO 15544[4]; USA[5]), as well as descriptions of international best practice with respect to oil spill response planning (e.g., IMO[6], IPIECA[7]) that can be applied to the analysis of the adequacy of OSRPs. Each of these documents was developed with different goals and for different audiences and so there is considerable variance in the content and in the level of detail. Nevertheless, these references were considered to form an appropriate basis for developing a review process and a framework against which the BTC OSRPs could be evaluated. Development of the review procedure initially involved definition of

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[3] International Finance Corporation, 2000. Environmental, Health and Safety Guidelines. Oil and Gas Development (Offshore), 10 pp.

[4] ISO, 2000. ISO 15544. Petroleum and natural gas industries — Offshore production installations — Requirements and guidelines for emergency response. International Organisation for Standards, Geneva, 43 pp.

[5] USA, 1996. United States ICP — Integrated Contingency Plan ("One Plan") Guidance agreed by five US federal agencies: CG/EPA/DOT/MMS/OSHA (http://www.nrt.org).

[6] IMO, 1995. IMO Manual on Oil Pollution, Section II — Contingency Planning, International Maritime Organisation, London, IMO Publication No. IMO-560E, 65 pp.

[7] IPIECA, 1991. A Guide to Contingency Planning for Oil Spills on Water. IPIECA Report Series, Volume 2, International Petroleum Industry Environmental Conservation Association, London, 19 pp.

those elements that form the core components of an OSRP and then the establishment of a framework to evaluate each OSRP.

The procedure involved the definition of:

- the critical components that are necessary to enable an oil spill response operation to be effective and successful, and
- the key contents and information requirements for an OSRP.

Once these components were established, each of the OSRP documents was evaluated in the context of:

- the organisation and presentation of the information and material in the OSRP, and
- the adequacy of the specific OSRP in terms of whether the plan would enable an effective and well-managed response to be carried out at the time of a spill incident.

There are many components to oil spill response planning. Some of the key elements are a function of the experience, training, and skills of the individuals involved. Other important aspects are the nature of the national government and the legal framework of the country and of the agencies that implement the state laws, regulations, and international agreements. The human elements are intangible and difficult to evaluate. The review, therefore, focused on the question, "*what are the critical elements necessary to adequately and appropriately respond to an oil spill and are they in place*?" For an oil spill response operation to be effective and successful, these critical elements should be contained in an OSRP or a set of OSRPs.

2.1 Critical Components Necessary for a Spill Response Operation

Oil Spill Response Plans (OSRPs) are a key element of preparedness and response. These plans provide the framework and organisational structure for the activation and deployment of resources and for the definition of response objectives. An international panel attempted to define the essential components of a response and agreed that a successful response would have the six major components described in the International Convention on Oil Pollution Preparedness, Response, and Cooperation, 1990 (OPRC, 1990)[8]:

1. a competent national authority,
2. a national oil spill contingency plan,
3. a spill notification procedure,
4. a minimum level of response resources relevant to the background risk,
5. regional agreements to enhance sharing of limited response resources, and
6. an oil spill response feedback reporting procedure[9].

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[8] International Maritime Organisation, 1991. London, 39 pp.

[9] Steen, *et al.*, 2003. Global Challenges to Preparedness and Response Regimes. Proceedings International Oil Spill Conference, American Petroleum Institute, Washington DC, Publication No. I 4730 B, 29-44.

Other components that were identified by the same panel as contributing to response effectiveness included the application of a tiered response approach and the establishment of planning targets for management, training, exercises, equipment, and financing.

We considered these components and expanded on the six major items defined above to create a list of **seven planning elements** that we considered as the key components of an OSRP that would be required to implement successful oil spill response operation:

1. a well-defined and efficient spill reporting procedure,
2. clearly defined notification and communications procedures,
3. clearly defined roles and responsibilities for management and response teams,
4. planning that is related to risks,
5. the presence of a competent national authority,
6. a national oil spill contingency plan, and
7. a minimum level of equipment relative to the perceived and real risks.

We then defined **seven response elements** that we also considered to be key components of an OSRP:

1. the presence of a responsible authority,
2. a knowledge of available resources and a mechanism by which these resources can be contacted and mobilized,
3. the selection of appropriate response operational strategies by experienced personnel,
4. a functional management system with clear lines of command and communications,
5. equipment that is appropriate for the types of spills that might occur and that is properly maintained,
6. an appropriate level of realistic training and exercises and the maintenance of trained personnel, and
7. the support of all parties (internal to the company) and responsible government agencies (external).

Although these two lists (Table 1) are not exhaustive, they provide a solid basis for an evaluation of an OSRP or a set of related OSRPs. In effect, we consider that an OSRP should contain information that addresses each of these fourteen components as part of preparedness to ensure an appropriate response capability.

Table 1 Key Components of a Successful Oil Spill Response Operation

PLANNING ELEMENT
Spill Reporting
Notification-Communications
Defined Roles and Responsibilities
Risk-Based Planning
Competent National Authority
National Oil Spill Plan
Equipment

RESPONSE ELEMENT
Responsible Authority
Resource Base Knowledge
Strategy Selection
Functional Management System
Appropriate and Maintained Equipment
Appropriate Training and Exercises
Internal and External Support

2.2 Key Contents of an OSRP

Recognized guidelines, standards, conventions, and laws were reviewed to establish a list of the information items that are necessary for a complete OSRP. The matrix format, based on IPIECA guidelines, was modified to include guidance from IFC, ISO, IMO, US federal government, and IPIECA documents (see footnotes 2 through 7 above). This information list was then used to develop an information matrix of 80 specific line items that constitute the information considered necessary and appropriate for a complete OSRP and that could be used as a checklist against which each OSRP could be evaluated. Matrices were developed to provide a framework and a checklist for the systematic review of the plans (Table 2).

Table 2 Examples of Line Items from the Information and Content Matrix

CONTENTS	LOCATION in Plan	STATUS			COMMENTS - RECOMMENDATIONS
		Missing	Work in Progress	Compliant	
1.0 Introduction and Scope	OSRP 1			X	
1.1 Purpose & Objective of Plan	OSRP 1.1, 1.2 BTC Az			X	Good
1.2 Regulatory Requirements, Relevant Agreements, and Guidelines	OSRP 1.4			X	Revise cross-ref to OSRP Framework in ESIA [App. EV)
1.3 Geographical Limits of Plan	OSRP App. ABTC Az			X	Add cross-ref. to Appndx in OSRP Section 1
1.4 Interface with other Plans	OSRP 1.3			X	List specific locations in GA where full IMS Manual is maintained; suggest a diagram (see GOSRP Fig. 5.2) or specific list to show GA-OSRP plan hierarchy and related documents- include Wildlife Response Plan (?), list of containment manuals wit doc. nos.

The matrix approach provides a systematic method by which (a) the content of the plans could be cross-referenced to topics and information items, (b) document completeness and status could be identified, and (c) specific summary review comments could be included. The content and information matrix provided a very effective tool for the review process.

Review comments were provided (Table 2) for each of the 80 line items in the matrix. A separate table of review findings (Table 3) was provided to summarize the key findings; columns were subsequently added in this table to document the exchanges between the reviewers and the plan holders that occurred during the interactive review and revision process.

Column 3 of the review findings table (Table 3) contains a letter code to indicate whether the initial review comments or recommendations were:

- a required improvement for compliance and/or to meet international standards or best practices (**R**),
- related to material that was missing or lacking and that was required for compliance and/or to meet international standards or best practices (**M**),
- an issue of discrepancy or consistency between documents and/or source materials that required resolution (**D**),
- not strictly necessary to be in compliance or to meet international standards but that would have been an improvement to conform with international best practices (**I**), or
- a comment or observation that, although not necessarily requiring remedial action (the item or topic being judged to meet international standards and/or best practices), would have improved the document (**C**).

A sixth code was used to indicate a Work In Progress (**WIP**) for items which had not been completed at the time of the initial review.

2.3 Organisation and Presentation of an OSRP

Specific or exact plan format and content requirements may be defined in regulations established at national to local levels. In the absence of clearly regulated requirements, however, plan organization and format are left to the plan developers. There are no international standards for the format and presentation of the information within an OSRP. Therefore, internationally recognized guidelines were reviewed to develop a **functional and logical format** for the organisation and presentation of this information (Plan Format, Table 4). The exact format of a plan will clearly vary depending on the scope, as some plans are intended for a Tier 1 facility or response, whereas, others provide a regional coverage.

In terms of the **presentation of the information**, based on our own experience, we consider that it is highly desirable that OSRPs be:

1. as concise as possible, without loss of necessary content,

Table 3 Extracts from a Review Findings Summary Table

REVIEW FINDING	COMMENT - RECOMMENDATION	CODE	PLAN HOLDER RESPONSE	REVIEW REPLY
1. The Upstream OSCP notes that the plan will need revision and update pending steps in the project development.	Revise the Upstream OSCP to incorporate these updates.	R	Now the current status is reflected.	Critical WIPs to be addressed are: Items # 2, 5, 20, and 32
8. Scenarios do not assess resource requirements and compare response strategies in different Tier 1 and 2 situations (weather, oil properties, season etc.).	Acknowledge this is a WIP and recommend scenarios illustrate how the OSCP is implemented and sustained over a period of time (days to weeks). Plans should match scenario-driven resource requirements.	R	A new annex has been produced which identifies four example scenarios covering different sources, oil types, response tiers and weather conditions.	RESOLVED. The scenarios are clear and concise.
15 Upstream OSCP states subsea blowouts are not considered because there has not been an incident. Inconsistent with the "Framework Document".	Revise document to reflect the fact that subsea blowouts have happened (e.g. Ixtoc blowout). Reconcile with the "Framework Document".	D	Amendment to section 9.4.1.5 to reflect possible (low probability) occurrence of a subsea blow-out.	RESOLVED in revised text
23. Dispersant guidelines and pre-approvals will be needed to implement strategy in an actual offshore event	Incorporate necessary guidelines and approvals as soon as they become available.	C	Will be incorporated as soon as available	RESOLVED. Future plan update, when available.
39. Protection strategies for the high risk coastal priority protection areas adjacent to the pipeline landfall are not presented.	Develop site-specific protection and cleanup strategies.	I	WIP. To include into Upstream plan extracts from/reference to Coastal Protection Manual	WIP Expect information in next revision.

2. suitably organized with a section numbering scheme, pagination by section (for ease of revision), and with all figures and tables numbered.

Also, we consider that it is a distinct advantage to users that all project OSRPs have:

3. a common design and layout (a "template" approach), and
4. a complete list of acronyms.

Within a set of project OSRPs we consider that the plans should be:

5. integrated at all levels, but at the same time
6. recognize that Tier 1 plans should be "stand-alone" documents that provide sufficient guidance for any and all Tier 1 efforts within the geographic area of the plan scope.

Table 4 Key Considerations for OSRP Format/Content and Presentation

PLAN CONTENT/FORMAT	PLAN PRESENTATION
1. INTRODUCTION AND SCOPE 2. OIL SPILL RISKS 3. RESPONSE ORGANISATION 4. SAFETY 5. NOTIFICATION 6. INITIAL RESPONSE ACTIONS 7. RESPONSE OPERATIONS 8. WASTE MANAGEMENT 9. WILDLIFE 10. LOGISTICS 11. FINANCE AND CONTRACTING 12. TRAINING AND DRILLS APPENDICES: A. Contacts B. Equipment Lists C. Maps D. Forms	CONCISE/COMPLETE DOCUMENT CONTROL EASE OF USE FORMAT ORGANISATION STANDARD DESIGN ACRONYMS INTEGRATED TIER 1 STAND-ALONE

2.4 Evaluation of the Adequacy of an OSRP

The generation of an information base for an OSRP is no guarantee that the plan will enable an effective and well-managed response to be carried out at the time of a spill incident. The information presented in an OSRP is part of a broader preparedness and response programme. The successful implementation of an OSRP also depends on some general issues that are more intangible than the plans themselves and relies a great deal on the individuals involved. Nevertheless, the OSRPs provide the stage for the equipment and personnel to implement a response operation. We addressed these general issues by reviewing ten questions suggested by an internationally

recognized oil spill response organisation (ITOPF[10]) to assess the adequacy of an OSRP. We have used the topics covered by these ten questions and added an eleventh, "*Is there a Health and Safety Plan that is appropriate for the operating environment?*" in the development of our evaluation (Table 5).

Table 5 Topics Used to Evaluate the Adequacy of the OSRPs (adapted from ITOPF 1985 – TIP #9)

1. **RISK ANALYSIS** — Has there been a realistic assessment of the nature and size of the possible threat, and of the resources most at risk, bearing in mind the probable movement of any oil spilled?
2. **PROTECTION PRIORITIES** — Have priorities for protection been agreed, taking into account the viability of the various protection and clean-up options?
3. **RESPONSE, RECOVERY, AND PROTECTION STRATEGIES** — Has a strategy for protecting and cleaning the various areas been agreed and clearly explained?
4. **MANAGEMENT ORGANISATION AND TRAINING** — Has the necessary organisation been outlined and the responsibilities of all those involved been clearly stated with no 'grey areas' — will all who have a task to perform be aware of what is expected of them?
5. **EQUIPMENT FOR TIERS 1, 2, AND 3** — Are the levels of equipment, materials and manpower sufficient to deal with the anticipated size of spill? If not, have back-up resources been identified and, where necessary, have mechanisms for obtaining their release and entry to the country been established?
6. **WASTE MANAGEMENT** — Have temporary storage sites and final disposal routes for collected oil and debris been identified?
7. **NOTIFICATION AND MONITORING** — Are the alerting and initial evaluation procedures fully explained as well as arrangements for continual review of the progress and effectiveness of the clean-up operation?
8. **COMMUNICATIONS** — Have the arrangements for ensuring effective communication between shore, sea and air been described?
9. **EXERCISES** — Have all aspects of the plan been tested and nothing significant found lacking?
10. **TIER 2 AND 3 PLAN COMPATIBILITY** — Is the plan compatible with plans for adjacent areas and other activities?
11. **HEALTH AND SAFETY** — Is there a Health and Safety Plan that is appropriate for the operating environment?

[10] International Tanker Owner's Pollution Federation (http://www.itopf.com/contplan.html)

The review report presented the findings and comments in the following format:

- A summary list of general and specific Key Findings and Recommendations. Each finding or recommendation was accompanied by a letter code to identify if the item was "R – a required improvement", "M – missing", "D – a discrepancy", "I – a suggested improvement", or a "C – comment".
- A summary of the review findings regarding the planning and response elements for the OSRP using the eight categories listed in Table 1.
- Information matrices (Table 2) in which each of the specific line items was identified as either "Missing", "Work in Progress", or "Compliant". A review comment or recommendation was made concerning most of the line items.
- A table of Review Findings and Recommendations that described the review item in detail and the recommendation for that item (Table 3). Each of these Findings and Recommendations was accompanied by one of the five letter codes.
- A summary of review findings regarding the plan presentation elements for the OSRP using the eight categories listed in Table 4.
- A summary table of the overall findings of the adequacy of the OSRP using the eleven questions presented in Table 5.

A final step in the OSCP evaluation process entailed on-site evaluations of oil spill response exercises. These regional exercises included management (tabletop) and field (deployment) components that tested planned response procedures, organization, communications, and management. The exercises serve to demonstrate (internally and externally) how the OSCP is applied under simulated spill conditions and they provide a mechanism to test, critique, and improve the OSCP and associated documents.

The review recognized that OSRPs evolve during the life of a project as information changes (equipment lists, contractor contact telephone numbers, etc.), as the results of ongoing studies or information from other related activities become available, and as lessons are learned from drills and exercises. These expected changes are normal and result from a continuing effort to improve the OSRPs and their supporting documents. In this context, the review report provided recommendations for possible actions or activities to improve the OSRPs.

3 CONCLUSIONS

The two phase approach developed for the BTC project review initially involved the definition of:

- the critical components that are necessary to enable an oil spill response operation to be effective and successful, and
- the key contents and information requirements for an OSRP.

The review then involved four distinct review steps, each directed at different planning and response components:

1. First, seven planning and seven response elements were identified as the key components that would be required to implement successful oil spill response operations.

2. Second, recognized guidelines, standards, conventions, and laws were reviewed to establish a list of the information items that are necessary for a complete OSRP. This information list was then used to develop a forensic matrix of eighty specific line items that could be used as a checklist against which each OSRP could be evaluated.

3. Third, as there are no standards for the format and presentation of the information within an OSRP we reviewed internationally recognized guidelines, and developed a functional and logical format that could be recommended for the organisation and presentation of this information.

4. Fourth, as the generation of an information base for an OSRP is no guarantee that the plan will enable an effective and well-managed response to be carried out at the time of a spill incident, we evaluated adequacy and readiness in the context of the purpose and scope of response planning by reviewing eleven relevant questions and by evaluating spill exercises.

ある多国籍石油会社における油濁対応に関する考察

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1. 自己紹介

ます自己紹介をさせていただくと、私は31年以上BPに勤務しており、主に油流出対応計画策定及び対応の分野に従事してきた。最近では危機管理の分野に従事している。現在は、BP Explorationで北海におけるBPの油流出対応準備体制を監督しており、この事業部門のグローバルな油流出対応アドバイザーも務めている。私はBPグループの危機管理同業者グループを介し、BPの同僚たちとともに危機管理と油流出対応準備に関するグローバルな方針を策定している。最近ではまた、BP Explorationの役員も務め、現在はIPIECAの油流出ワーキンググループの委員長を務めている。

2. BPについて

BPは総合多国籍石油・ガス会社で、世界の100以上の国で操業する民間の最大手石油会社である。10万人以上の従業員を擁し、合弁事業及び下請業者を介して間接的にほぼ同数の従業員を雇用している。時価総額で世界のトップ15社に入る会社であり、欧州と英国では第1位である。

3. 計画及び準備体制に関する考察

3.1. 防　止

まず、当社の第一の留意事項は決して流出事故を起こさないことである。BPは、「事故はゼロ、人間に危害を与えない、環境に損害を与えない」を方針に定めている。即ち、流出事故を起こさないということである。海上輸送、開発・生産、精製、流通の各部門において、流出を決して起こさないように努力している。また当社は、オープンな操業は当然であると考え、事故が起きた場合はそれを共有し学習するよう努力している。例えば最近アラスカで起きたパイプライン事故がある。BPは最近、安全と操業の保全という新しい機能を導入した。その任務は確固たる安全手順を確保することである。新基準「保全管理基準」(Integrity Management Standard)がこの取り組みの原則となっている。

3.2. 国際的な課題を主導するか、追従するか

私は、油流出計画策定の国際的な場において、多国籍企業が自社をどこに位置付けるかを考える必要があると信じている。当社は、主導的な立場を取るのが正しいと考え、我が社が主導することにより、同業者や規制当局とともに被害ゼロの念願をこめたビジョンを促進する手助けができる。また、このような主導により、規制に先んじることができる。BPは1979年にサウサンプトン(英国)に初の段階3の

基地を設置し、また、最新の油処理剤及び保護具の早期開発を主導することにより、現在では国際的に認知されている段階的対応概念の開発を主導した。環境に関するもう一つの例としては、気候変動に関するBPの立場であり、規制のはるか以前に排出を管理することを決定していた。

3.3. 事故の影響

「高い所にいる者ほど激しく落ちる」という表現を説明する必要はないであろう。私たちは、当社の事業や当社が起こす事故が公知となることをよく認識している。先に述べたとおり、当社はオープンな環境で操業し、実績を広く公表している。評判においてこそ実際の事業の真価が問われる。良い評判を得るのは難しく、損なうのは容易である。このことは、当社の計画と対応理念を策定する際に考慮しなければならない。当社は正しい行動をとりたいと考えている。これらの原則は「行動規範」と呼ばれる方針文書で説明されている。

3.4. リスクはどこにあるのか

私たちは、準備戦略を検討する上でリスクに注意を向ける必要がある。流出を起こさないと我々が切望している以上、理屈としては準備の必要性は低く限定的でよいと主張することもできる。しかし、現実の世界には不確実性や偶発的な出来事が存在し、自分たちに起因するものもあれば、我々ではどうしようもないものもある。また、世界では私たちの事業への関心がますます高まっている一方、油流出問題は常に人々の優先課題であり続ける。従って、当社の検討においては、単なるリスクベースのアプローチではなく、ワーストケースを考察している。また、大規模な油流出事故が業界全体に与える影響を考慮して、業界レベルでの確実な対応を実現するため、同業者に協力を呼びかけ、政府や各機関を対応準備に引きいれることが正しい行動であると考える。全員が共通の準備と理解を持つことのみが、対応の成功につながるはずである。

準備体制に関する検討事項は、当然ながら関連法の遵守を前提とした合格判定基準の考察である。私たちは計画を策定する際に、パートナー、利害関係者、規制当局、及び地域社会と準備の合格レベルについて検討する。私たちは、これらの当事者が容認できる方法で活動しなければならないと考える。また、理解度がまだそれほど高くない地域で操業する際には、我々自身の許容水準を検討する。そのような方針(例:環境プロジェクト基準)を通じ、どこで操業する場合でも、共通アプローチを実現するように努力している。

4. 当社の対応準備モデルに関する考察

4.1. 立地とタイプ

間違いなく、私たちは外洋や沿岸水域、陸地などあらゆる種類の立地と、広範な気候条件下で操業している。さらに、原油から精製品までの様々なグレードの製品を、様々な手段(例えばパイプライン、タンカー、バージなど)によって輸送しているのでフレキシビリティが鍵となる。

4.2. 対応準備モデル

私たちは、準備体制のためのモデルを検討し、「段階的対応」の概念を活用することにした。現場が即応能力を持っている場合(段階１)、地域に協力体制がある場合(段階２)、そして世界中に提供可能な資機材の戦略的備蓄基地がある場合(段階３)である。これは、ほぼ例外なく業界の共通モデルであり、段階２及び段階３体制は多くの場合操業者と利害関係者が共有する。私は、BPがこのモデルの先駆者であり、単独並びにIPIECAなど国際団体を介してモデルの推進と説明を支援していることを誇りとしている。当該モデルは、当社のリスク及び操業領域をグローバルに網羅する効果的な対応策である。

このモデルは、専門技術を適所に有することを必要とする。私たちの課題は、当社のHSSE（安全衛生、保安、環境）担当者全員が流出準備に関して少なくとも基礎的な知識を理解し、数人の社内の専門家の支援を受けながら現地のHSSEスタッフにアドバイスすることである。私が「アドバイザー」の役割で忙しくなる時である。

また、私たちのパートナーである油流出対応コミュニティ、サービス事業提供者などは、私たちの計画策定と対応を支援する上で確実に有能でなければならない。段階的対応モデルはこの点で本当に役に立つ。なぜなら、これらの機能は油流出対応に関する中核となって、当社の社内対応能力を支援するための対応資源を提供するからである。私たちの課題は、これらのサービスを活用し、当社の社内専門家のために高品質の製品が確実に供給されるようにすることである。

専門技術を完全に外部委託するか否かを決定する上で、私たちは「知識のある買い手」としての能力を保つことが望ましいと考えた。私の意見では、この能力を持つことにより、サービス提供者に彼らの業務を広範囲にわたる石油会社の視点から確実に理解してもらうことができ、また当社内で最終製品の所有をもっと増やすことができるようになる。

4.3. 対応チームに関する考察

BPは、大概の大手石油会社と同様に、様々な種類の事故リスクを抱えている。油流出はその一つに過ぎないが、対応に失敗した場合の影響は甚大である。検討すべきは、全てのリスクに対応する単一の対応組織を持つべきか、別の油流出対応組織を持つべきかという点である。

私たちは、前者を選んだ。即ち、全ての事故に唯一つのチーム（殆どが社内から）で対応しようというものである。私たちは、これらのチームを事故管理チーム(IMT)と呼んでおり、IMTは概して全社共通のものである。IMTは、専門家の機能が関連のある緊急事態に相応しい場合には、チームの一員になることを認めている。そのため、例えば油流出の場合専門家とは、社内またはサービス提供者の（通常は両者の混成であるが）油流出対応訓練を受けた者のことである。これらのチームは世界中のあらゆる場所で地方当局と連携する必要があるため、柔軟なアプローチが必要になる。

私たちは、それが妥当であれば対応を主導すること、または場合によっては当局への支援を主導すること、そしてそれが容易に見てとれることが大切であると考える。同様の段階的ベースで、このチームをいわゆる地域対応チームに拡大することができる。BPスタッフ主体のこれらのチームは地元の事故管理チームを支援することができる。BP全体で1,000以上の地元事故管理チームがあり、約５個の地

域対応チームがある。全チームが、グループ危機管理体制と呼ばれている事実上のグループの危機管理運用基準に従って、訓練や演習を受ける。

これまで第一線の対応チームに焦点を当ててきたが、より広範囲の影響に対しても準備しなければならない。そのため、いわゆる事業支援チームの必要性も考慮した。このチームの任務は、事業リスク、戦略的コミュニケーション、そして当社の操業継続の確保、を検討することである。また、このチームは国家レベルや地域レベルの問題を検討する国家と地域のネットワークを支援している。危機管理構造の最終部分はグループ危機管理チームで、グループの指導者達がグループ全体の問題を検討する。

4.4. 対応戦略

私は本稿で、実際的な対応技術について詳しく述べるつもりはないが、ひとつの異なる視点から対応について論じる価値はある。私たちは、対応の優先順位を人間、環境、財産と考えており、これが私たちの意思決定と優先順位を設定する際の基準となる。また、事故に対して「過剰な準備」をすることが最善であるとも考えている。即ち、警報後直ちにチームと対応資源を動員して出動準備態勢を整え、事故の評価と検証が始まった時点ですでに出動準備ができているようにすることである。いかなる対応行動も遅延させたくない。ただし、「過剰反応」しようとは思わない。過剰反応とは、事態をさらに悪化させるような不適切な措置を講じることである。時としてこれは難しいジレンマとなるが、私たちは対応担当者に対し、常時出動準備をしておくように指導している。

5. 結　論

私たちが防止、準備及び対応モデルを策定する際に考慮するいくつかの留意事項について述べたいと考えていた。これらは全てBPグループのためのいくつか主要な方針ドキュメントに基づいている。即ち、「無事故、無損害、無危害」というHSSE方針である。「行動規範」にある当社の倫理方針、緊急事態への準備を規定する当社の「保全管理基準」、当社のHSSE管理システム、HSE（安全衛生と環境）の適正な実施、当社の危機管理体制、これら全てが当社の体制の柱として機能し、また私が説明した留意事項についての指針となっている。

ご静聴ありがとうございました。

Oil Spill Response Considerations in a Multinational Oil Company

Bernard Bennett
Crisis Manager; Oil Spill Planning Advisor
BP Exploration

1. About myself

Please allow me to introduce myself. I have worked for BP for over 31 years mainly in the field on oil spill planning and response and latterly in the field of crisis management. I currently oversee oil response preparedness for BP in the North Sea for BP Exploration and I am the global oil spill advisor for that business segment. I work with my colleagues in BP, via our Group Crisis Management Peer Group to develop global policies on Crisis Management and oil spill preparedness. I have spent time with OSRL/EARL as responder and training and consultancy. Recently I held a position on the board of this company. I am currently the Chairman of IPIECA's oil spill working group.

2. About BP

An integrated multinational oil and gas company.
BP is a publicly owned super major oil company operating in over 100 countries worldwide. It has over 100,000 employees and indirectly employs a similar number through joint ventures and contractors. It is amongst the top 15 companies in the world and #1 in Europe and UK by market capitalisation.

3. Considerations for planning and preparedness

3.1. Prevention

Let me start first by saying that our number 1 consideration is not to have any spills at all. BP have set a policy expectation of " no accidents, no harm to people and no damage to the environment " which means no spills. Whether it be Shipping, E&P, Refining or Distribution we strive to ensure there are no spills. We also consider that operating in an open manner is the right to do and if incidents do occur we strive to share them and learn. Eg the recent pipeline incidents in Alaska . BP have recently introduced a new function:- Safety and Operations Integrity whose task it is to ensure robust safety processes. A new Standard " Integrity Management Standard " governs this approach.

3.2. Leading or following the international agenda

I believe that a multinational needs to consider where it positions itself in the international arena of oil spill planning. We consider that taking a leading position is

the right thing to do. By leading you can help to promote your own aspirational vision (of no damage) with your peers and regulators. Also leading takes us to a place where we are ahead of regulation. BP led the development of the now internationally recognised tiered concept of response by setting up the first Teir 3 base in Southampton, England in 1979 and also leading on the early development of modern dispersants and protection equipment.
Another example of environmental would be BP's position on climate change, taking a decision to manage its emissions well ahead of regulation.

3.3. Consequence of an incident

I am sure I do not need to elaborate on the phrase "the higher they are the harder they fall". We are very aware of what we do, and the accidents we have, are very much in the public domain. As I said earlier we operate in an open environment and publish our performance widely. There is a real business value in reputation. It is hard won and easy to damage. Thus we must take this into consideration when preparing our plans and response philosophy. We want to do what is right. These principles are described in a policy document called the " Code of Conduct "

3.4. What are we at risk from

In considering our preparedness strategy we do need to look at our risks. Ideally with our aspiration of no spills we could argue that our preparedness needs to be limited or low. However we do live in a world where there is uncertainly and occasional events, sometimes attributable to us and sometimes caused by events beyond our control. We also live in a world where there is an ever greater interest in our business and oil spills remains very high on everybody's agenda. So our consideration is to look at worst cases as opposed to a solely risk based approach. We also consider the impact of a major spill on the whole industry, so it is right to encourage our peers to all work together in enabling a solid response on an industry level and to engage governments and agencies to prepare with us. Only by common preparedness and understanding can we ever hope to secure a successful response.

Our consideration for preparedness, after of course compliance to relevant laws, is to consider acceptability criteria. When we prepare plans we discuss what is an acceptable level of preparedness with our partners, stakeholders, regulators and local communities. We consider that we must operate in a manner that these parties find acceptable. We also consider our own level of acceptability when operating in areas that are not so mature in their understanding. Through such policies eg environmental project standards, we strive to ensure a common approach wherever we operate.

4. Considerations for the response preparedness model we employ

4.1. Locations and oil types

Clearly we operate in every type of location from open sea to inshore waters, land based sites and across a wide spectrum of climate conditions. Additionally we

transport numerous grades of products from crudes oils to refined products in a number of different mediums eg pipelines, tankers, barges etc. Flexibility is key.

4.2. Model of response preparedness

We have considered the model for our preparedness and have chosen to utilise the Tiered concept of response. Where local sites have an immediate capability (Teir 1), where there are local arrangements for co-operation (Teir 2) and where there are strategic stockpiles of equipment ready to be delivered worldwide (Teir 3). This is almost without exception the common industry model and the T2 and T3 arrangements often shared by operators and interested parties. I can take pride in saying that BP was at the forefront of this model and helps to promote and explain the model itself and via international associations such as IPIECA . The model is an effective solution to proving global cover for our areas of risks and operations.

The model does require us to have in place expertise. Our consideration is to have all of our HSSE personnel competent with at least a basic understand spill preparedness knowledge, supported by a number if in house professional experts to advising the local HSSE staff. This is when I get busy with my role of " Advisor ".

We also must ensure that our partner response communities, our service providers and others are competent to help us with planning and response. The Tiered model really helps here, as these facilities become centres of oil spill excellence and provide us with the resources to support our own in house capability. Our consideration is to utilise these services and for our in house experts to ensure a quality product is delivered.

In determining whether or not to completely outsource expertise we considered it would be much preferable to maintain the "informed buyer" capability. I suggest that having this capability ensures that the service providers understand the wider oil company context of their work and gives more ownership of the final products within our company

4.3. Response team considerations

BP, like most large oil companies is a risk of many different types of incidents, oil spills are only one albeit with large consequences if it goes wrong. The consideration is whether or not to have one type of response organisation to cover all risks or to have separate oil spill response organisation.

We have chosen to go for the former, ie to have a single team, predominately in house, that is designed to respond to all incidents. We call these teams;- Incident Management Teams (IMT) and they are , by and large, common across BP. They allow for a specialist function to be part of the team that fits the relevant emergency, so for example in the event of an oil spill the specialist(s) would be an oil spill trained person, either in- house or from a service provider, Normally a mixture of both. As these teams need to integrate with local agencies in all parts of the world a flexible approach needs to be taken.

We consider that it is essential to be leading the response when appropriate or leading the support to agencies as the case may be, and to be visible.
We do have the ability to grow the teams, on a similar Tiered basis, with what we call Regional Response Teams. These teams of mainly BP staff can support local Incident Management Teams.
There are over 1000 local IMT's across BP and approximately 5 Regional response teams. All are trained and exercised in accordance with what we call our Group Crisis Management Framework, which is effectively the Group's operating standard for crisis management.

I have focused on the front line response teams but we also must prepare for the wider impacts and thus we have considered the need for what we call Business Support Teams , whose responsibility is to consider business risk, strategic communications and ensuring we can continue to operate. Supporting these teams are Country and Regional networks that consider national and regional issues. The last part of the Crisis Management structure is the Group Crisis Team, where the Group's leadership consider Group wide issues.

4.4. Strategies for response

I do not intent to discuss the practical response techniques in detail in this paper but it is worth discussing response from a different perspective.
We consider our response priorities in the following order:- People, Environment, Property; which guides us in decision making and setting priorities. We also consider it best to "over prepare "for an incident, that is to mobilise teams and resources immediately upon an alert ready to go into action, and be ready when assessment and verification of an incident has occurred. We do not wish to delay any response. We do not wish to " over react " by which I mean taking inappropriate measures which could make matters worse. This is a difficult dilemma on occasions and the guidance we give responders to always be ready to go into action.

5. Conclusion

I have hoped to describe a number of considerations that we take into account when determining or prevention, preparedness and response model. All flow from a number of key policy documents for the BP Group; Our HSSE policy of no accidents, no damage, no harm. Our ethical policies within the "Code of Conduct", our Integrity Management Standard" that stipulates that we must be prepared for emergencies , our HSSE management system, Getting HSE right and our Crisis Management Framework.
These all act as the pillars of our arrangements and guide us in the considerations I have described.

Thank you for your attention