Oil Spill Response

Global Perspective on Tiered Preparedness & Response

New Approaches in Risk Assessment and Response Planning - an E&P Perspective

Overview

- Who are Oil Spill Response Ltd (OSRL)
- Joint Industry Project (JIP)
- JIP#6: Risk Assessment & Response Planning
- Risk Assessment Process
- Response Planning

Who we are




Largest industry-owned response cooperative with global remit

Responding to oil spills anywhere, anytime. Over 400 spills attended worldwide.

Industry's preferred provider of oil spill preparedness, response and subsea well intervention services (SWIS)

Serving stakeholders from strategic locations in the UK, Singapore, Bahrain, United States, Norway, Brazil and South Africa.

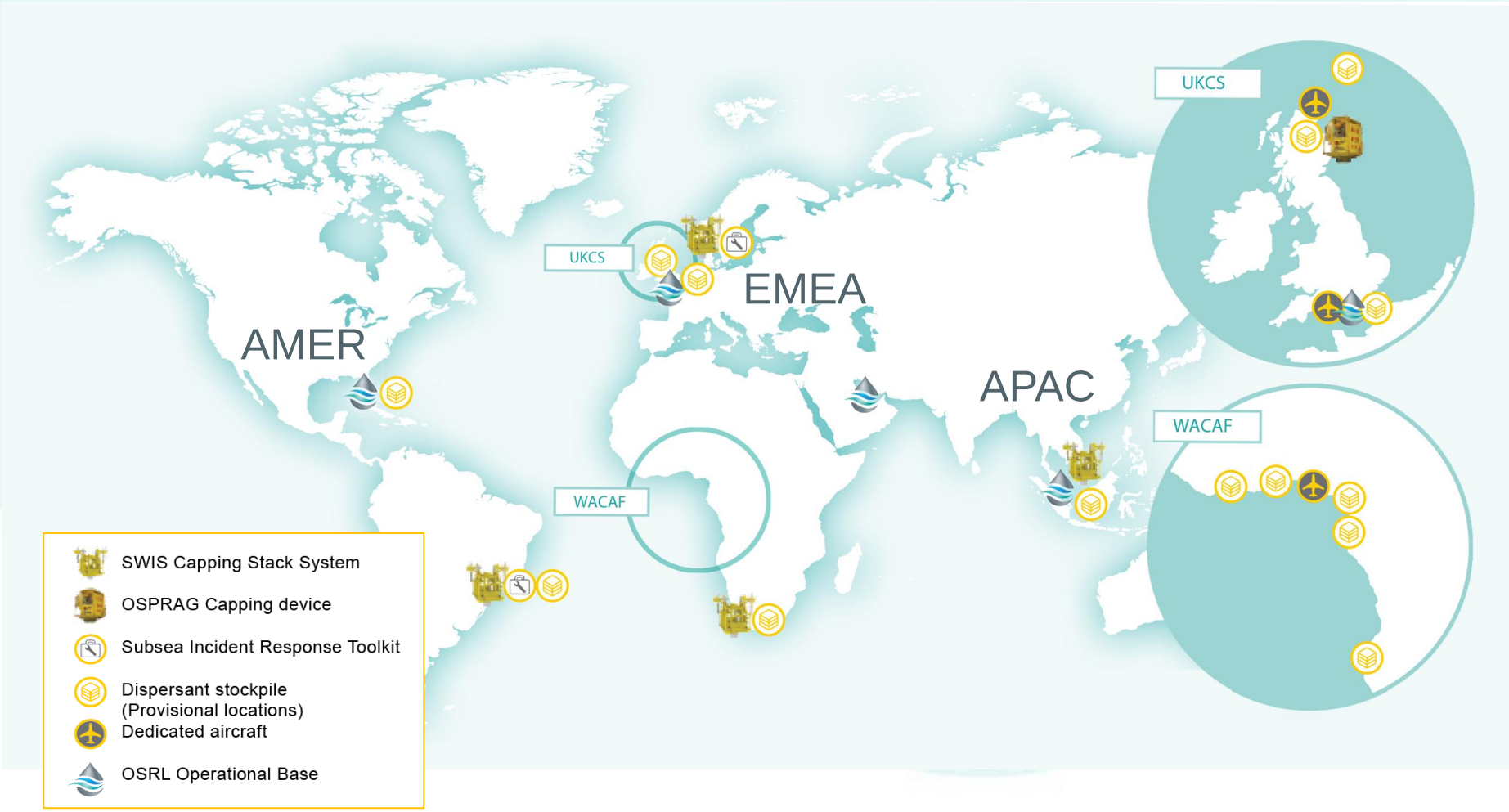
Over 160 environmentally responsible Members

from government, marine and energy-related sectors.

Collaboration with industry organisations e.g. IMO and IPIECA

to share expertise and develop knowledge.

Our global capability

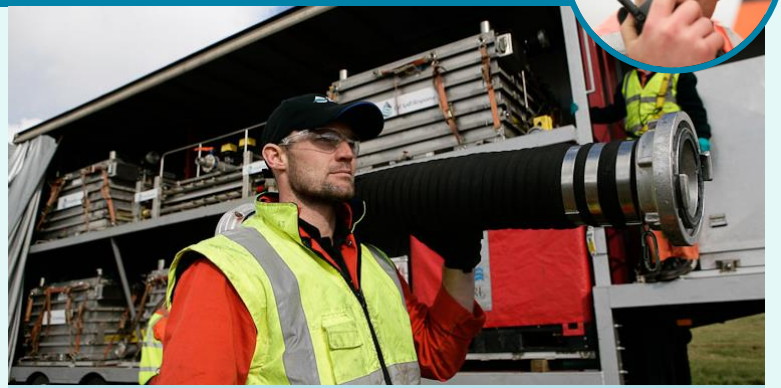


What we do

Preparedness

- Training
- Consultancy
- Oil spill modelling
- Capability reviews
- Equipment hire
- Exercises and drills

Response



- Technical advice
- Spill management
- Specialist personnel
- Equipment and transportation
- Aerial dispersant and monitoring systems

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Risk Assessment & Response Planning

The OGP-IPIECA Oil Spill Response JIP

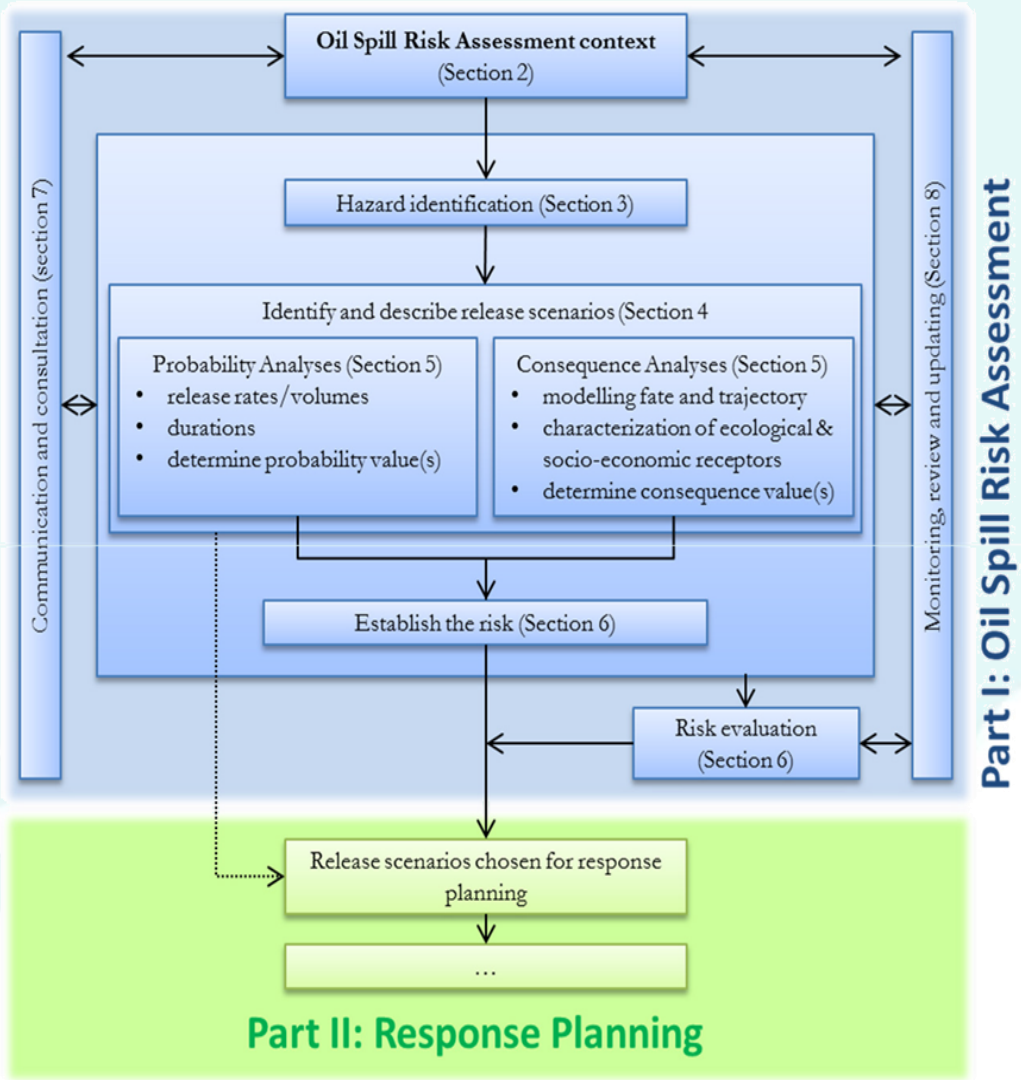
- Three-year project (2012 – 2014) addressing nineteen recommendations for spill response developed following Montara and Macondo incidents
- Developed as a joint industry project between nineteen OGP and IPIECA members
- Includes working cooperatively with the API JITF and OGP Arctic Technology projects, national and regional oil industry associations, and the capping / containment projects

JIP 6 – Risk Assessment Response Planning

- **Goal:** To write an accepted risk assessment-based methodology for the upstream, leading to:
  - A scenario-based planning standard for an upstream release and estimation of the associated quantities
  - An assessment of environmental/commercial resources at risk
  - An assessment of response resource needs and capability and the ability to cascade resources in to the spill area
  - Inculcating the above in contingency planning
  - “Proving” the response through drills and exercises

The JIP 6 Risk Assessment Process

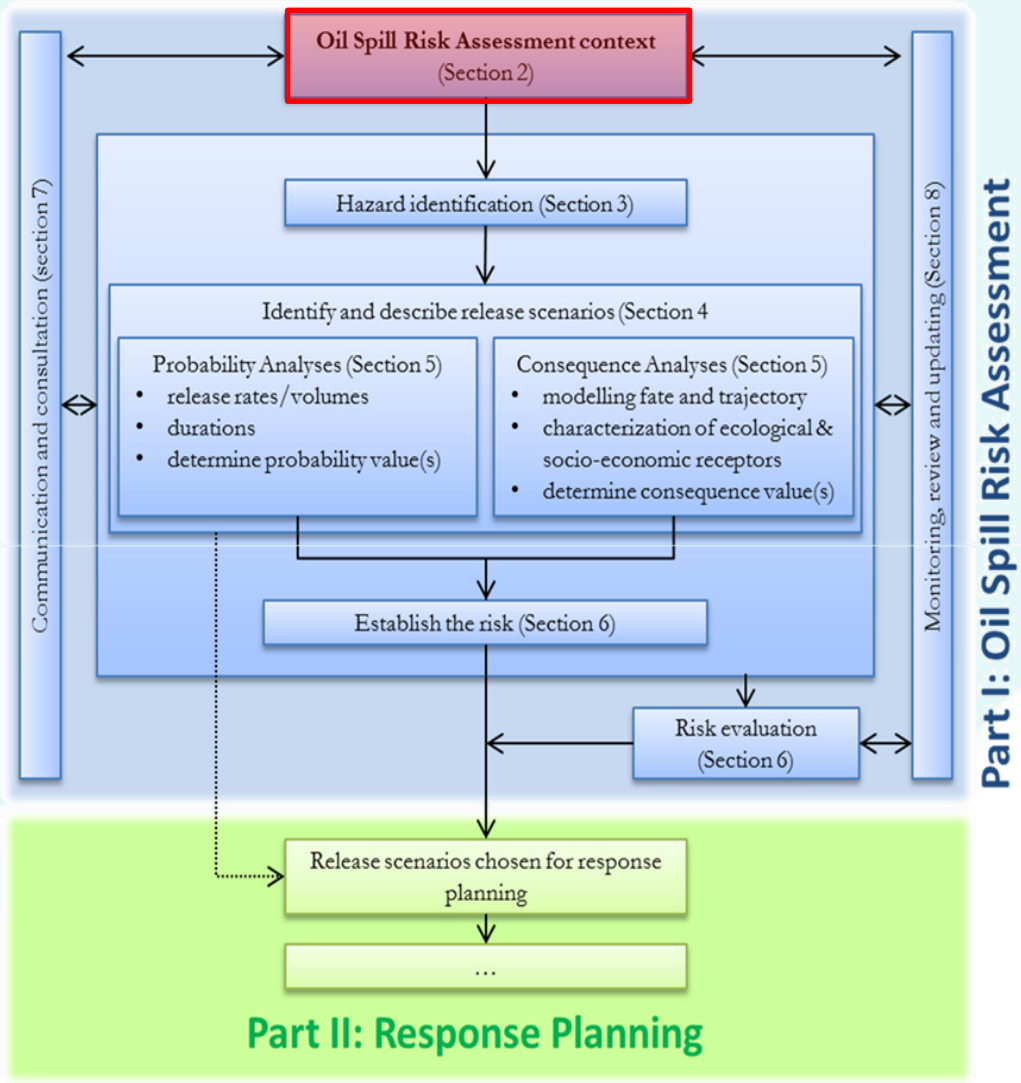
- **Key Questions – Part I:**
  - *What can go wrong, leading to a potential release?*
  - *How likely are the identified scenarios?*
  - *What happens to the oil?*
  - *What are the key environmental and socio-economic receptors?*
  - *What is the risk for environmental damage? Is it acceptable?*
  - *How is the established risk used in response planning?*



Risk Assessment Context

- **Objective: to determine that the offshore activity is in line with corporate risk tolerance**

- **Context**
  - objective, scope, methods, boundaries, risk tolerance criteria etc.
  - describing the activity to be assessed
  - Level of detail: qualitative, semi-quantitative, quantitative



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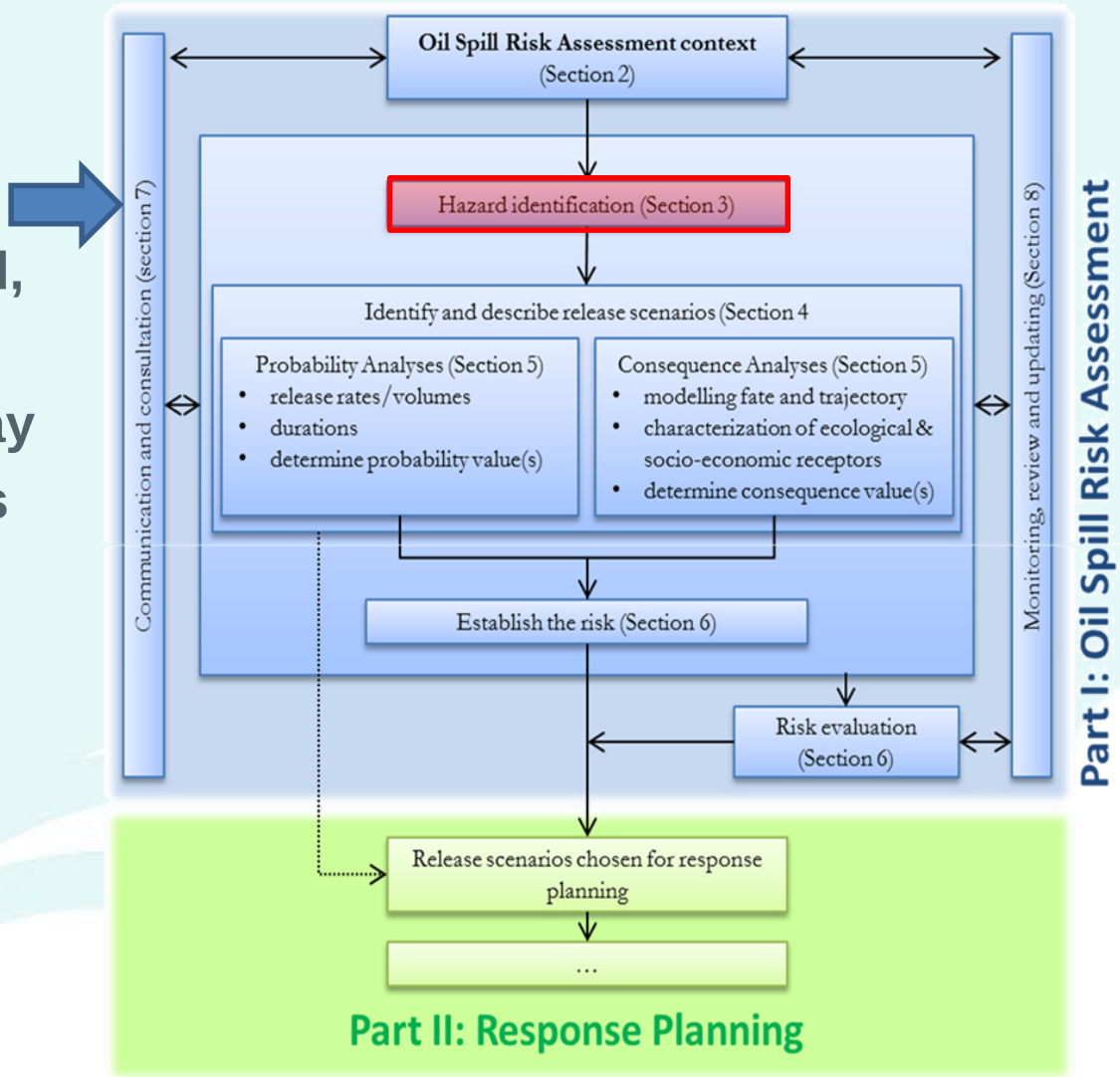
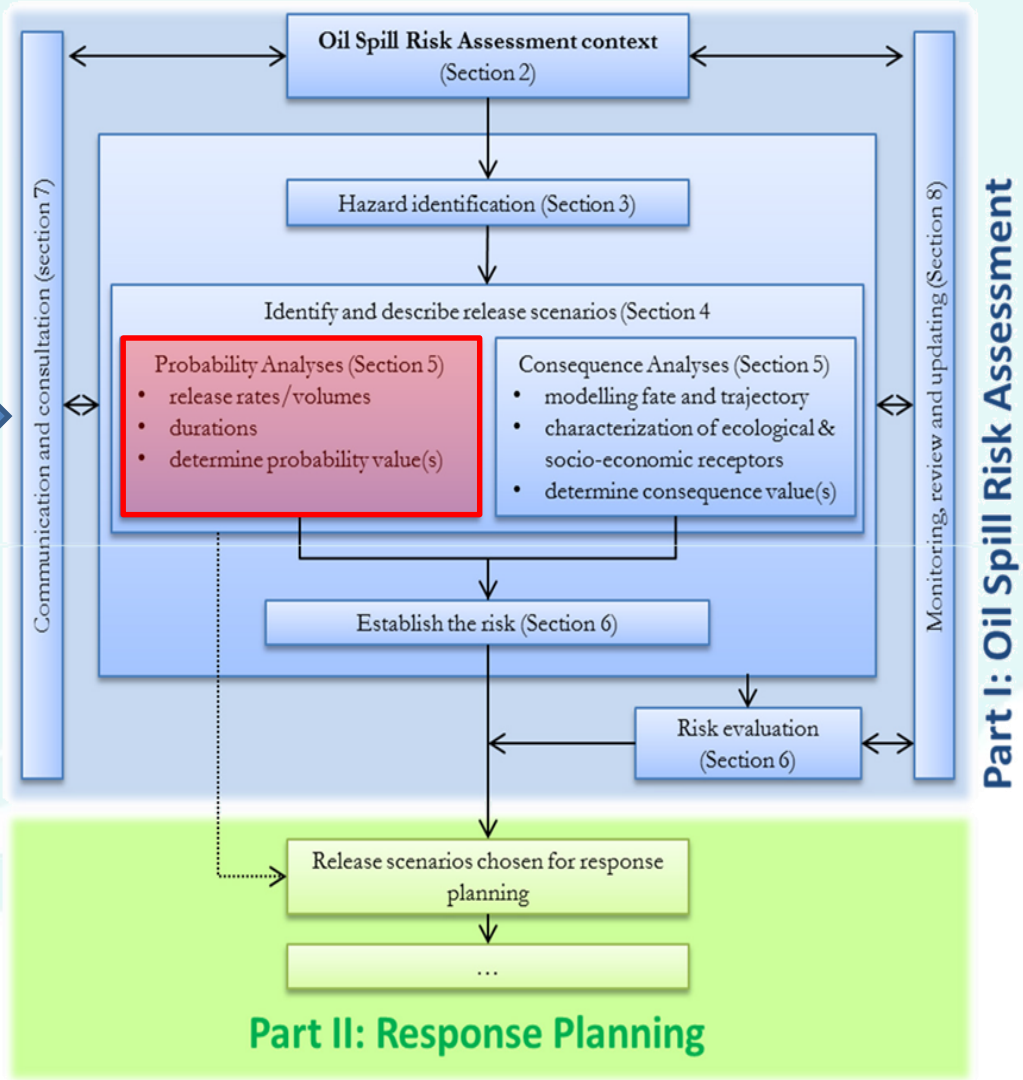
Hazard Identification

- **Objective: to identify hazards associated with the facilities and operations being studied, the threats, and the circumstances which may trigger hazardous events**
  - as comprehensive as reasonably practicable
  - appropriate hazard identification tools should be used
  - possible events



Likelihood Analysis

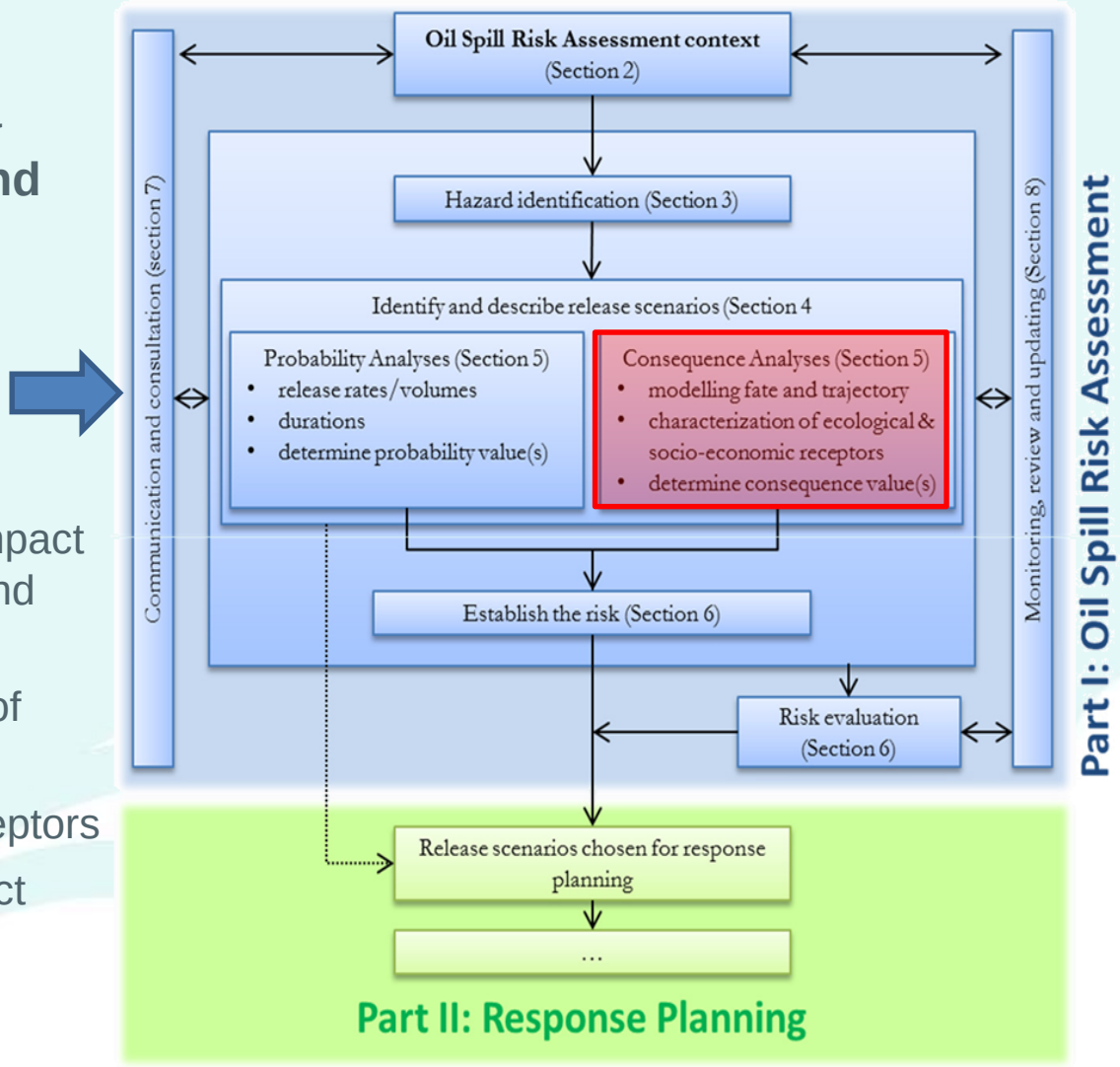
- **Objective: characterise the identified hazardous events, in terms of likelihood, the event duration and location, potential volumes of hydrocarbons discharged, and the type of hydrocarbon released.**
  - failure and accident data
  - modelling tools
  - all events that potentially have a significant contribution to the risk should be considered
  - consideration given to ensure that all three response tiers are covered



Consequence Analysis

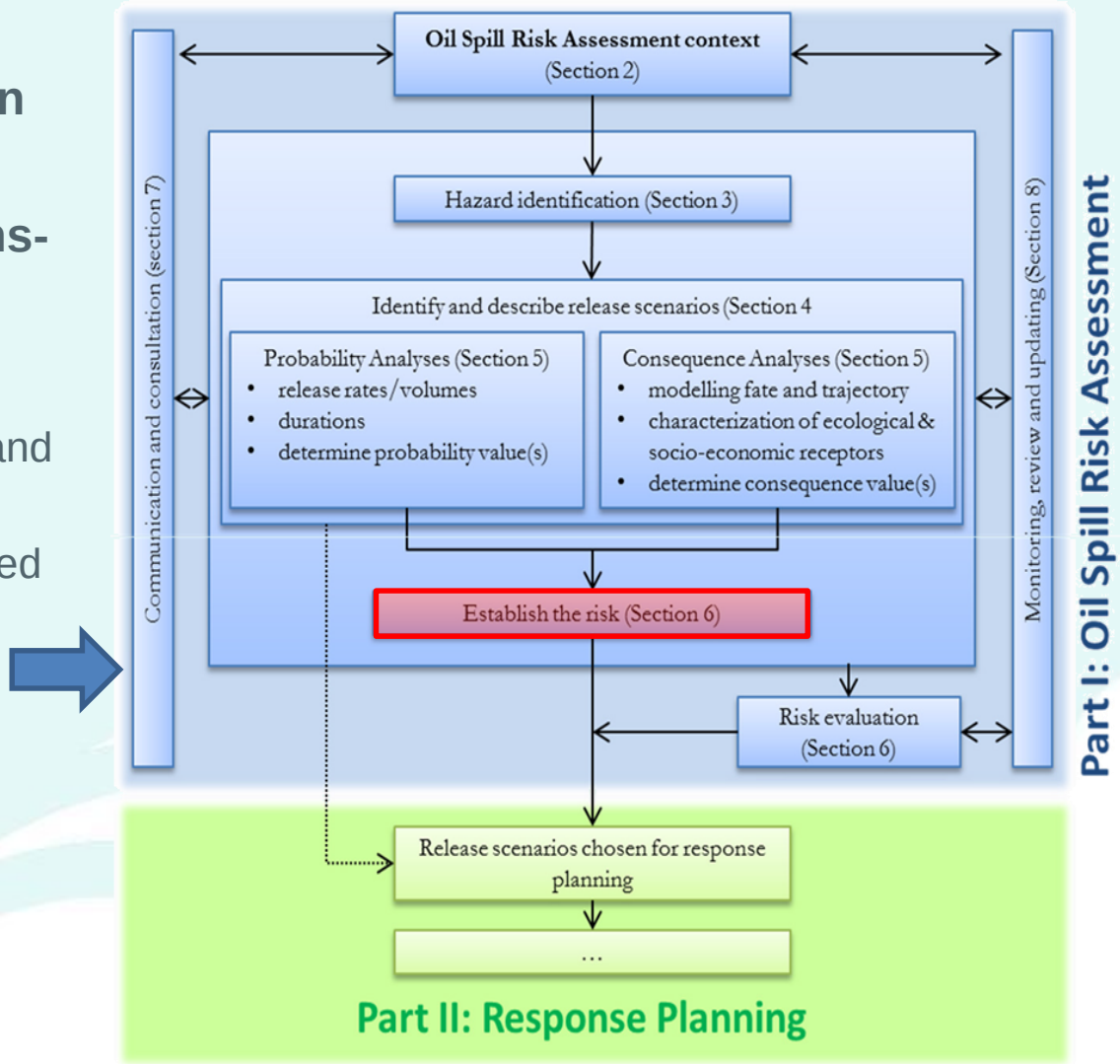
- **Objective: Estimation of environmental impact as a function of oil exposure and environmental sensitivity**

  - Oil spill modelling
  - Estimation of environmental impact as a function of oil exposure and environmental sensitivity
  - Identification/characterization of receptors
  - Evaluation of sensitivity of receptors
  - Identification/selection of impact indicators



Establishing and Evaluating the Risk

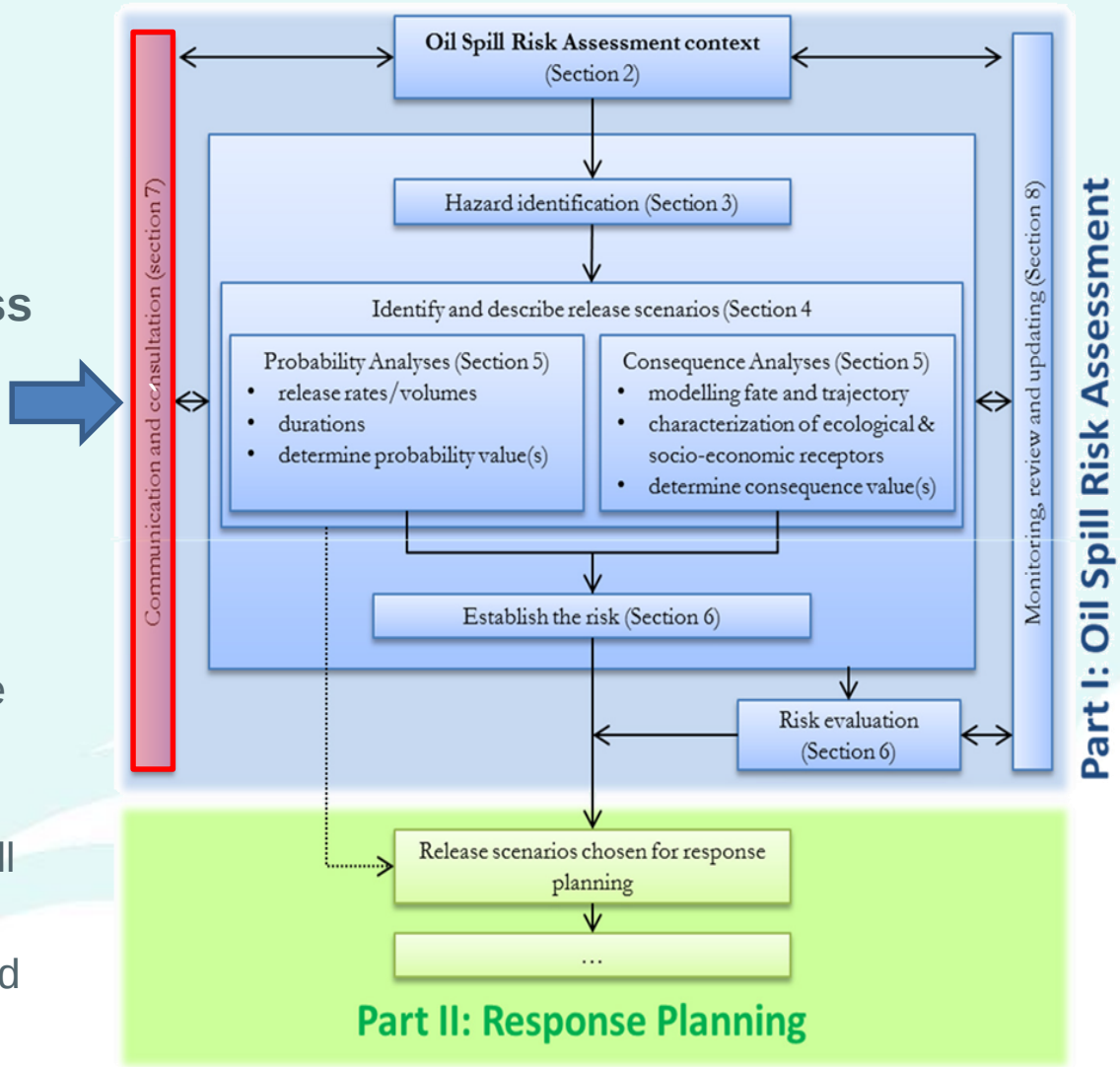
- **Objective: to evaluate and communicate the risk of an activity or scenario to stakeholders and decisions-makers in a logical and understandable way**
  - create different environmental and socio economic compartments
  - ALARP principle is recommended for all activities/risks
  - identification of possible risk reducing measures should be performed
  - the effect of the identified risk reducing measures should be evaluated to reduce:
    - Possibility
    - Potential
    - Consequence



Communication and Consultation

- **Objective: involve relevant stakeholders, whether internal or external, as a measure to improve the quality of the OSRA process and its suitability for its intended purpose(s)**

  - emphasis on early interaction to maximize understanding of key stakeholder issues and minimize potential project delays
  - plan developed early on to communicate and consult with all stakeholders
  - feedback mechanism established



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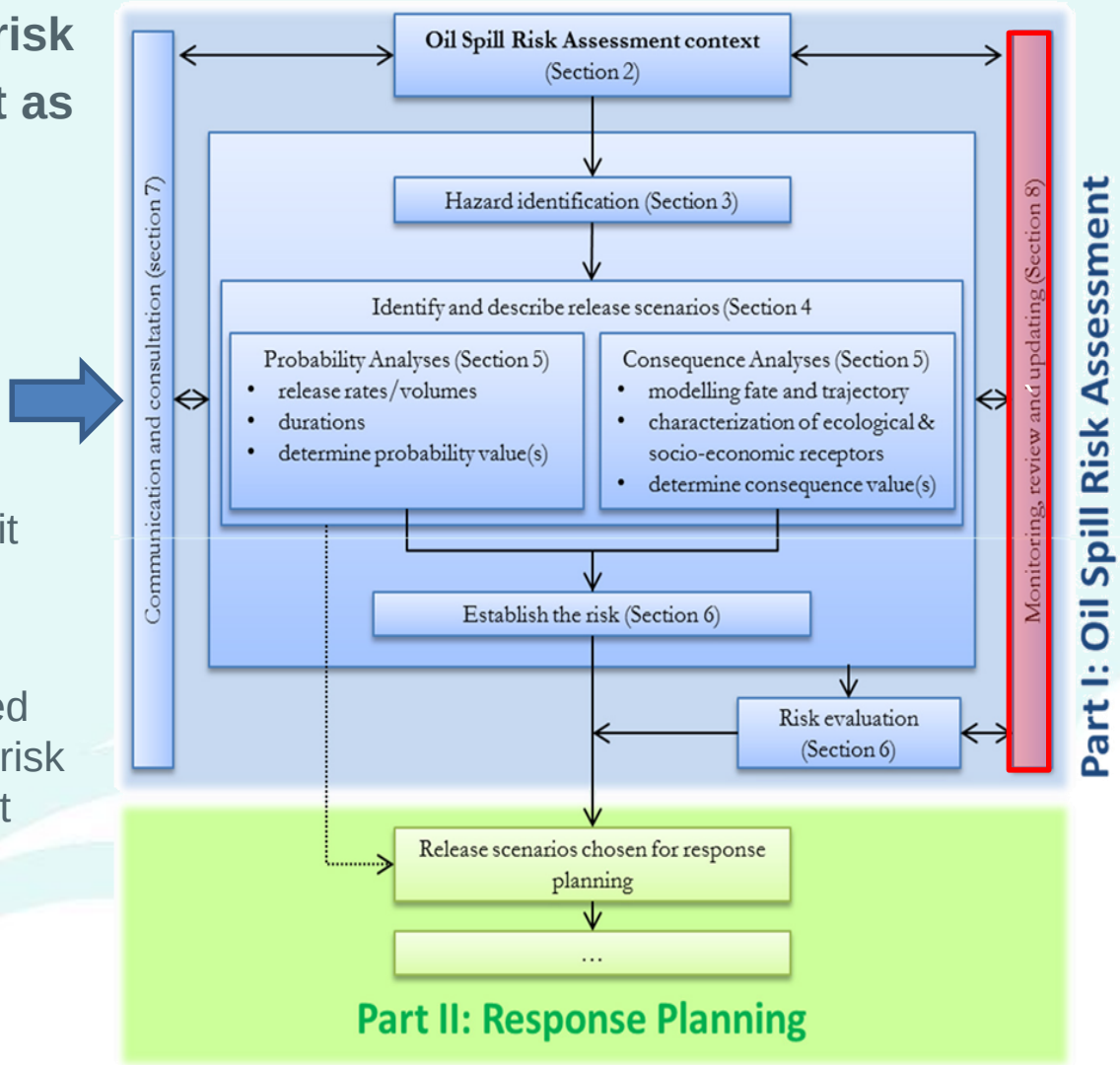
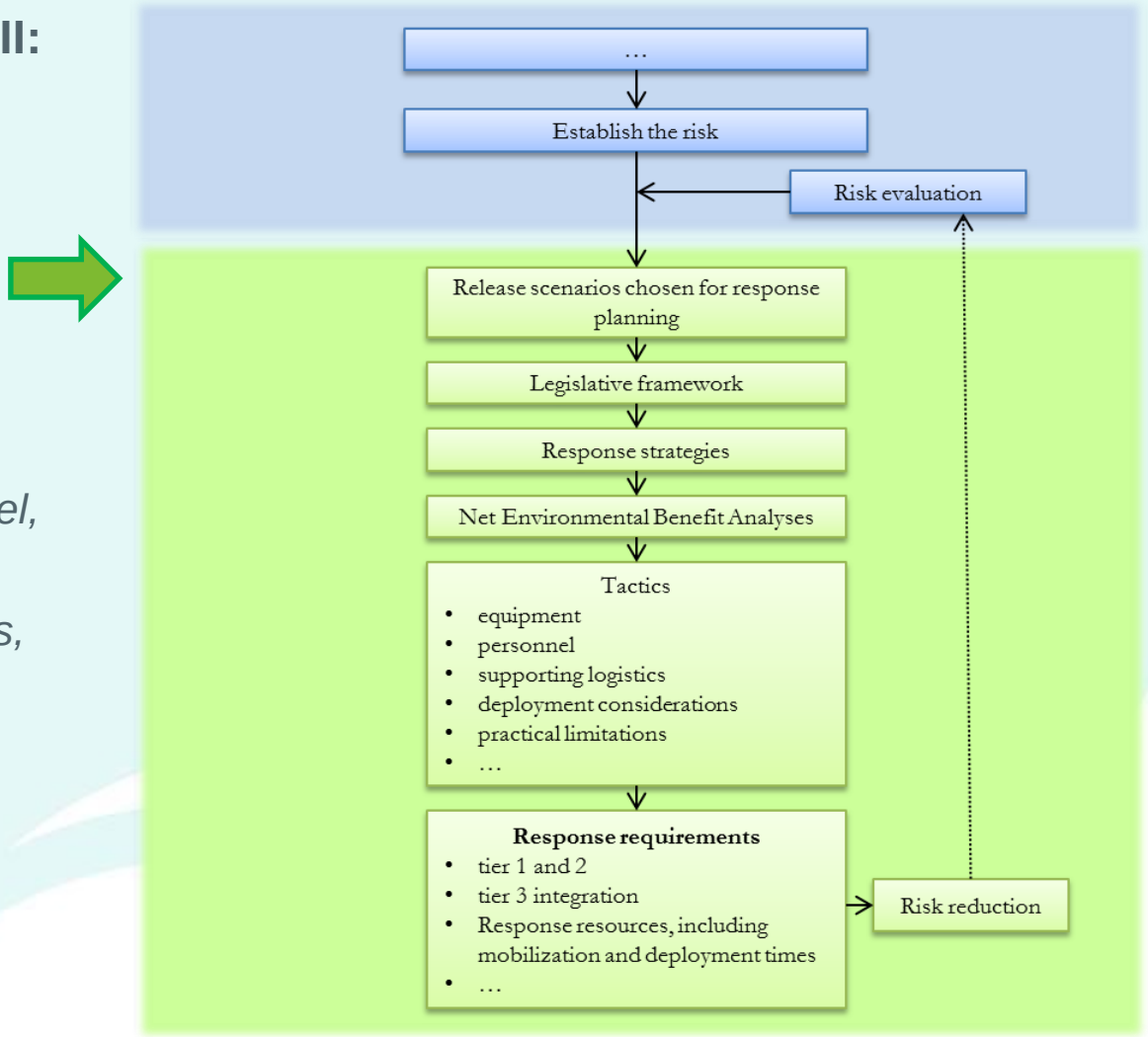
Monitor & Review

- **Objective: ensure that the risk assessment is still relevant as the project evolves. This is applicable to fields or facilities in operation over many years, or field development projects.**
  - a review of data used to ensure it remains current, relevant and accurate
  - any deviation should be assessed with respect to its effects on the risk and/or validity of the assessment and its results
  - consider update when:
    - new information
    - change in project phase



The JIP 6 Response Planning

- **Key Questions – Part II:**
  - *Which release scenarios?*
  - *Legislative framework?*
  - *Can we use NEBA to choose response options ahead of time?*
  - *What equipment, personnel, supporting logistics, deployment considerations, practical limitations…*
  - *How do we integrate with established Tier 2 / Tier 3 response capability?*



Scenario Response Planning Team

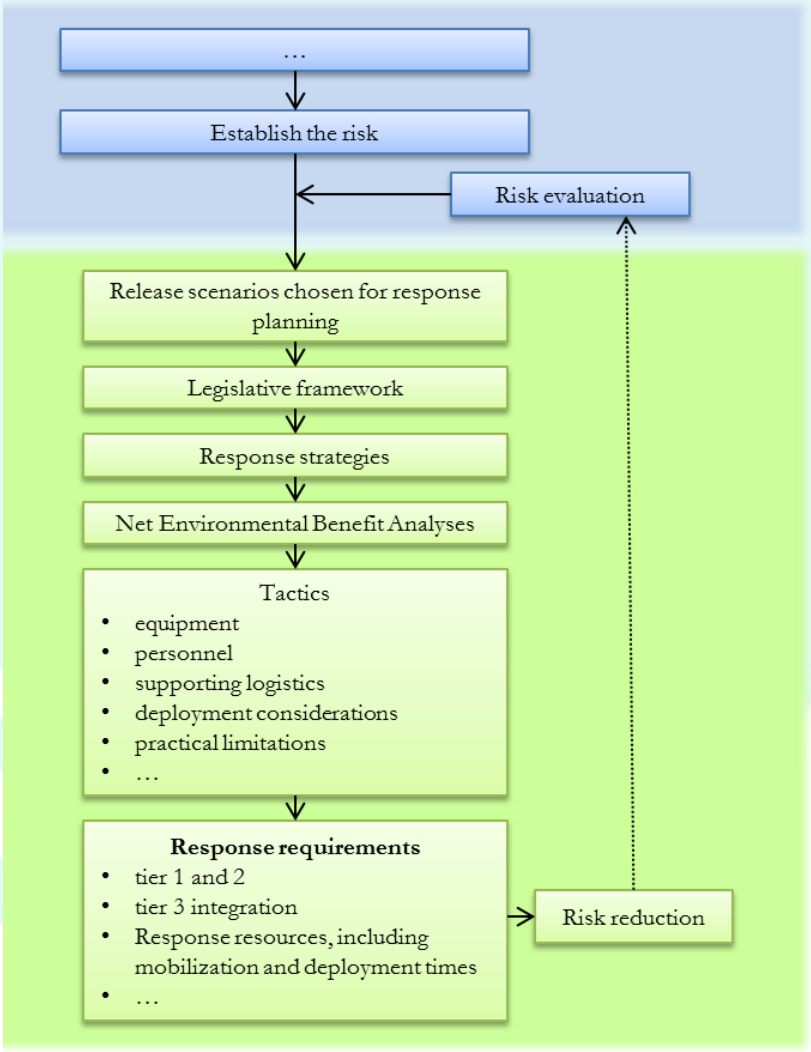
- **Person(s) with knowledge and experience of:**
  - The offshore installation
  - OSRA
  - Oil spill contingency planning
  - Logistical and support capacity
  - Legislative framework
  - Stakeholder & communication issues

Building Response Capability Guidance

- Preparedness measures need to be commensurate and balanced with the risk
- A real incident is unlikely to follow the planning scenario exactly, but the tiered response approach, strategic options and resource escalation processes can be applied to any incident
- NEBA principle should be applied and all viable options considered within the legislative/stakeholder context
- Equipment, personnel and logistics need to be considered
- Tactical plans detail how the strategies will be implemented
- Use of potential spill volume as the sole means of defining scale of response capability is not recommended.

Scenario Development & Response Planning

- One or two scenarios per tier, possibly only the Worst Credible Case Discharge (WCCD)
- Consideration of response actions:
  - Trajectory and fate modelling
  - Distribution and sensitivity of ecological and socio-economic resources
  - Response objectives
  - Legislative framework
  - Stakeholder/public factors
  - Response strategies, underpinned by NEBA
  - Capability assessment, identifying response limitations
  - Tactical plans – equipment, personnel and logistics
  - Sustainability in case of prolonged response



Determining Oil Spill Response Resources

- Strategic, tactical and logistical requirements need to be met
- Encompasses the type, quantity, location and mobilization times of equipment

AND

The organizational framework for effective incident management

Tactical Planning's Estimate of Resources:
- Equipment
- Personnel
- Supporting logistics

→

Evaluation of Existing Resources:
- Tier 1 and 2
- Tier 3 integration
- Mobilization and deployment times
- Changing capability with changing conditions / factors

→

Resource Gap Analyses:
- Additional equipment, personnel or logistics at Tier 1 and 2;
- Improved access, integration or logistics for Tier 3.

Cooperation

- Tier 2 and 3 cooperation is commonly practised with significant benefits
- Trans-boundary response issues should be addressed
- Tier 2 cooperation:
  - Mutual aid
  - Industry (or government) cooperative
  - Contracted services from commercial sector
- Seamless integration is the overall aim

JIP 6: What Now?

- JIP 6 “Oil Spill Risk Assessment and Response Planning for Offshore Installations” – completed Dec 2013
- Risk Assessment based planning
- Specific to offshore installations
- Contains worked examples
- Please use it… and give us your feedback

http://oilspillresponseproject.org/completed-products

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Thank you.

BACKUP