

Overview of the EU Offshore Oil and Gas Safety Directive

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Introduction

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Topics

- Background to the Directive
- Key Obligations
- UK North Sea Transposition

Safety Moment

- Pemex Abkatum platform (April 2015, Offshore Mexico)
- Major fire
- 7 fatalities
- 45 injuries
- 301 personnel evacuated – some jumped to sea
- Fire extinguished after 16 hrs – successful isolation – but major damage
- No oil spill reported

A major accident :

prevention and mitigation barrier failures



EU Offshore Safety Directive

- New Legislative regime to:
 - Reduce **occurrence** of Major Accidents
 - Limit **consequences** of Major Accidents

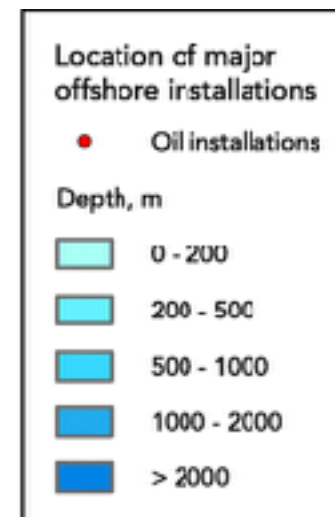
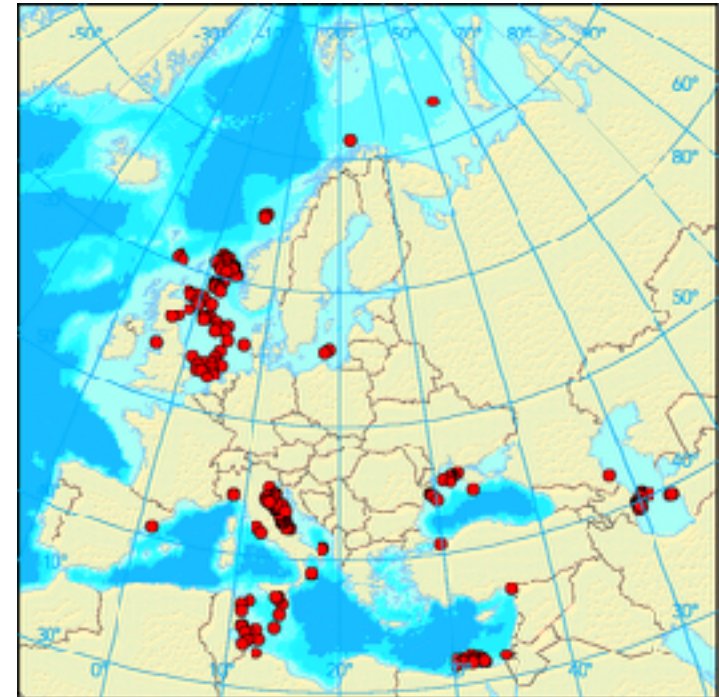
*Risk based, goal setting,
demonstration regime*



Why the Directive

Europe :

- ~500 + installations (ex Norway), ~50% in UK waters
- UK - Offshore Safety Regime – reforms following Piper Alpha (1988)
- Europe : 3 x challenges recognised :
 - **Fragmented legislative** regime
 - Current regulatory framework/arrangements **do not provide effective response** to major accidents
 - Liability regimes – responsible party may **not be identifiable/able,/liable** to pay to remedy damage



New Major Hazard Control Basis

Several regime options proposed :

- **Option 0** : Do nothing – Commission takes no role in offshore safety and environmental protection (“baseline”)
- **Option 1** : “North Sea Basic” – all EU regions to N.Sea standard – Safety Case, inspection regime by Competent Authority
- **Option 1+** : as Option 1, + some improvements to existing EU law, consider technical capacity of applicants for licences
- **Option 2** : Comprehensive reform raising all EU (inc. N.Sea) to agreed best practice. Integrated Safety and Environmental control
- **Option 3** : as Option 2, addition of EU agency to implement

New Major Hazard Regime Basis

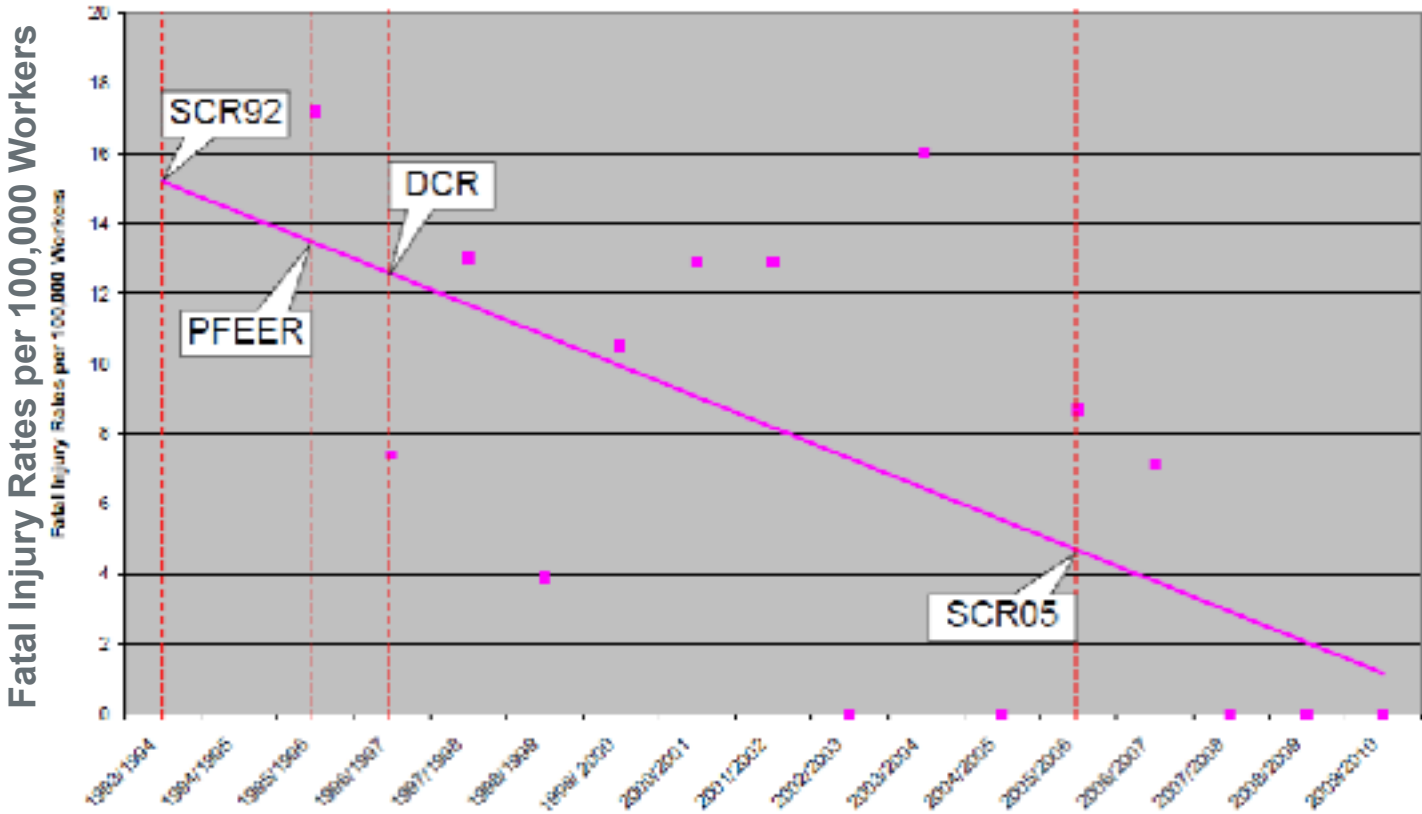
Summary

- **Option 2** : Comprehensive reform raising all EU (inc. N.Sea) to agreed best practice = Preferred
- Most risk reduction
- Meets most of regime measures/expectations
- *Overall vision – regime similar to Option 2, reflected in the Directive*

Objectives of the Directive

Regime to reduce risk – improve offshore HSE Performance

- North Sea Safety Case (SC) regime – viewed as contributing to improved safety



Key Requirements of the Directive

Report on Major Hazards (RoMH)

- Similar to Safety Case
- Describe Emergency Response Plans (ERP)
- Considers impacts of Major Accidents to the environment (oil spill)
- Reviewed, assessed, accepted by Competent Authority (CA)
- RoMHs required for Production and Non-production (e.g. MODUs)
- Summary of workforce involvement

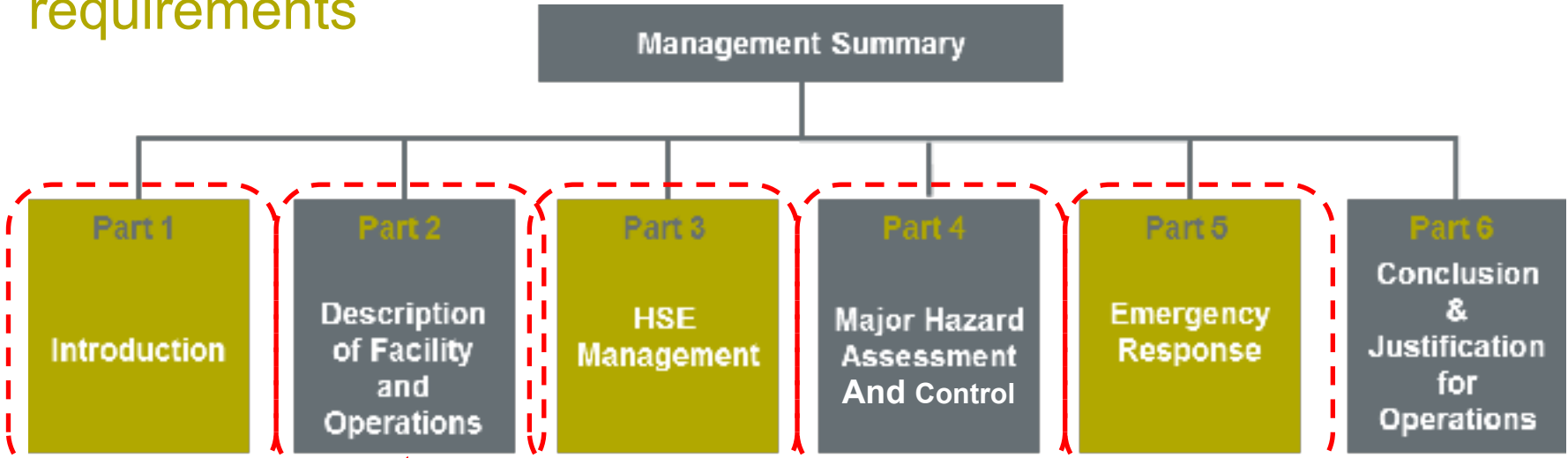
Key Requirements of the Directive

Report on Major Hazards

- Description of installation, activities, wells
- Description of equipment/arrangements to ensure process safety, well control, prevention fire/explosion
- Description of Escape, Evacuation, Rescue arrangements
- Design, construction, commissioning standards
- Description Safety and Environmental Management System
- **Demonstration** that.....
 - Hazards identified
 - Risks have been assessed (people and environment)
 - Control measures are suitable and sufficient (Safety and Environment Critical Elements)
 - Oil spill response will be effective

Key Requirements of the Directive

Typical Safety Case document structure – addressing new requirements



- Workforce Engagement

- Sensitive Environment

- Major Accident Prevention Policy
- Independent Verification (inc wells)

- Consequences of Major Accidents to the Environment
- Appropriate Oil spill risk assessment
- Safety and Environmental Critical Elements

- Internal Emergency Response Procedures
- Interface with external ERP

Key Requirements of the Directive

Licencing

- Operators to demonstrate technical and financial capability
- Mandatory public participation (new exploration)

Competent Authority

- Independent
- Verify HSE provisions
- Enforcement actions/penalties

Key Requirements of the Directive

Independent Verification

- Independent opinion on critical HSE systems (“SECEs”)
- Well plans

Transparency

- Sharing of Competent Authority and Industry performance data
- Protection of “whistle blowers”
- Submission of accident reports for operator overseas events – share lessons learned

Key Requirements of the Directive

Emergency Response

- Scenario based
- Appropriate resources available
- Member States base national emergency plans on operator plans
- Trans boundary
- Periodic testing

Liability

- Oil and gas companies will be fully liable for environmental damages.

Documentation Requirements

- *Design or relocation notification for a production installation*
- *Report on Major Hazards for Operation of a Production Installation*
- *Report on Major Hazards for a Operation of a Non-Production Installation*
- *Notification of Well Operation*
- *Verification Scheme*
- *Information related to a Material Change to an Installation*
- *Notification of Combined Operations*
- *Corporate Major Accident Prevention Policy*
- *Safety and Environmental Management System*
- *Internal Emergency Response Plan*

Monitoring the Effectiveness of the New Regime

- Major Hazard Indicator Regulations (13th October 2014)
- Operators required to submit incident data
- Submit information on details on SECEs failures – deterioration on critical controls
- Member States share performance data



<input type="checkbox"/> (a) Structural integrity systems			
<input type="checkbox"/> Topside structures	<input type="checkbox"/> Subsea structures	<input type="checkbox"/> Cranes & lifting equipment	
<input type="checkbox"/> Mooring systems (anchorage, dynamic positioning)		<input type="checkbox"/> Other, specify: ...	
<input type="checkbox"/> (b) Process containment systems			
<input type="checkbox"/> Primary well barrier	<input type="checkbox"/> Secondary well barrier	<input type="checkbox"/> Wireline equipment	
<input type="checkbox"/> Mud processing	<input type="checkbox"/> Sand filters	<input type="checkbox"/> Pipelines & risers	
<input type="checkbox"/> Piping system	<input type="checkbox"/> Pressure vessels	<input type="checkbox"/> Other, specify: ...	
<input type="checkbox"/> Well control process equipment - BOP			
<input type="checkbox"/> (c) Ignition control systems			
<input type="checkbox"/> Hazardous area ventilation	<input type="checkbox"/> Non-hazardous area vent.	<input type="checkbox"/> ATEX certified equipment	
<input type="checkbox"/> Electrical tripping equipment	<input type="checkbox"/> Earthing/bonding equipment	<input type="checkbox"/> Inert Gas system	
<input type="checkbox"/> Other, specify: _____			
<input type="checkbox"/> (d) Detection systems			
<input type="checkbox"/> Fire & gas detection	<input type="checkbox"/> Chemical injection monitor	<input type="checkbox"/> Sand	<input type="checkbox"/> Other, specify: _____
<input type="checkbox"/> (e) Process containment relief systems			
<input type="checkbox"/> Well control process equipment — diverter		<input type="checkbox"/> Relief systems	
<input type="checkbox"/> Gas tight floors		<input type="checkbox"/> Other, specify: _____	



- **Close consultation with industry**
- **Assessment templates prepared/available e.g.:**
 - **Safety Case**
 - **Well Ops Notification**
 - **SEMS**
 - **OPEP**
- **Regulator workflow processes, timescale commitments**

Risk	Likelihood of Occurrence	Consequences	Number of Assets	Worst Case	Notes
1	Low	Minor	1	Low	...
2	Low	Minor	1	Low	...
3	Low	Minor	1	Low	...
4	Low	Minor	1	Low	...
5	Low	Minor	1	Low	...
6	Low	Minor	1	Low	...
7	Low	Minor	1	Low	...
8	Low	Minor	1	Low	...
9	Low	Minor	1	Low	...
10	Low	Minor	1	Low	...

UK North Sea Transposition

EU Directive



Safety Case Regulations 2015

- Additional/amended requirements of the Directive – definitions, SECEs, SEMS, CMAPP

Marine Pollution (Environmental Functions) Regulations 2015

- Implements environmental requirements of the Directive
- Oil Pollution Emergency Plan (OPEP)
- Effectiveness

Petroleum Licencing Regulations 2015)

- Implements licencing requirements of the Directive

UK North Sea Transposition

Prevention of Fire and Explosion and Emergency Response Regulations (1995)

- Amended to align to definitions
- Implements requirement to maintain inventory of emergency response equipment
- Internal/external emergency plan requirements



Merchant Shipping Regulations 1998

- Amended to align to definitions
- Non-production Installation to hold Oil Pollution Emergency Plan (OPEP)
- 5 yearly review of OPEP
- Internal/external emergency plan requirements

- Revised OPEP Guidance Issued Jan 2015



Management and Administration Regulations 1995

- Amended to align to definitions
- Safety Zones requirements moved from Safety Case Regulations



UK North Sea Transposition

<p>Regulator</p> <p>A new 'Competent Authority' will be formed, with DECC and the HSE working together under a formal agreement.</p> <p>OSDR – Offshore Safety Directive Regulator</p>	<p>Major Accident Definition</p> <p>A Major Accident now includes the potential environmental impacts of accidents which also threaten life.</p>	<p>Policies</p> <p>A Corporate Major Accident Prevention Policy must be prepared (CMAPP).</p>	<p>Plans</p> <p>An 'Internal Emergency Response Plan' must be described in the Major Hazards Report. This includes provisions for responding to environmental and safety impacts.</p>	<p>Management Systems</p> <p>Management systems must be in place to cover both Safety and the Environment. These must be described in the Major Hazards Report.</p> <p>SEMS</p>	<p>Submissions</p> <p>A web portal is being created, and all submissions will go through this single portal.</p>
<p>Risk Assessment</p> <p>Hazard identification and risk assessment must also include the consequences of the major accident to the environment must address both frequency and consequences.</p>	<p>Risk Management</p> <p>The management of risk must address the adequacy of measures to protect against major accidents to the environment. (as well as safety)</p> <p>SECES</p>	<p>Verification Scheme</p> <p>The Verification Scheme must address both Safety and Environmental Critical Elements (SECEs).</p> <p>Verification of wells</p>	<p>Design Notification</p> <p>The Design Notification must include information relating to the management of the environmental impacts of major accidents. (as well as safety impacts)</p>	<p>Licence Applications</p> <p>The applications for licences must now include information on the safety performance of an operator.</p>	<p>Unchanged Provisions</p> <p>There is no change to the approval timescales, the need to do a thorough review (or the date), the need to seek approval for material changes, and the need to ensure that the Major Hazards Report is up to date.</p>