C1 Comparison of risk regulation regimes and challenges with soft law approaches – experience from offshore oil and gas operations.

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Abstract

The paper has two main components. Firstly it summarize and compare some of the key elements of the risk regulating regimes developed by Norway, UK and US towards the prevention of major accidents in the exploitation of offshore oil and gas resources by using three characteristics of control components (1) information gathering, (2) standard setting and (3) behaviour modification.

Secondly the paper address challenges and dilemmas embedded within the new modes of risk regulation with a "soft law approach". Such dilemmas can be found within the institutional arrangement among regulators and industrial stakeholders as: (1) developing strategies to cope with increasing complexity embedded in technological developments; (2) organizational change and innovation when firms adapt to new situations and new technology and thereby reframe their activity with new norms and rules; (3) inspectors’ role of compliance with the law and acting as a change agent to improve industrial safety performance; and (4) the issue of trust and relationship among actors internally and between the regulator and the industry.

Strengths and weaknesses of the different approaches and the interchangeability of elements in the regulatory systems are discussed in order to determine if there are consistence between the elements of the analytical framework and the regulatory approaches.

References

P.H. Lindøe and M. Baram and O. Renn

P.H. Lindøe, M. Baram and J. Paterson
P. H. Lindøe and O. A. Engen


P.H. Lindøe, M. Baram and G.S. Braut

Comparison of risk regulation regimes and challenges with soft law approaches – experience from offshore oil and gas operations

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Prof. Preben H. Lindøe

Outline

- What are the characteristics of the regimes?
  - The Norwegian offshore regime as a point of reference

- Comparing the regimes

- Dilemmas with soft-law regulation

- Conclusions
The Robust Regulation Project

Project goals:
- Understand and conceptualize the robustness of the Norwegian risk regulation regime
- Compare the Norwegian regime with UK and US
- Assessing relation between regulation, risk management systems and risk behaviour in the industry
- Partnership with industry, unions and regulators (PSA)

North Sea 1980s vs. Gulf of Mexico 2010: Lessons to be learned?

Context
Culture
Regulatory regimes

Influence of major accidents

<table>
<thead>
<tr>
<th>Time</th>
<th>Major accident</th>
<th>UK-regulations</th>
<th>Norwegian-regulations</th>
<th>US-regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amoco Cadiz (1969)</td>
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<td>1991-2000</td>
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</tbody>
</table>

A paradigm shift in risk regulation

Social production of wealth with increasing technical, ecological, social and medical risk (Beck 1996)

Old regulation regime: Reactive and prescriptive with technical requirements

New regulation regime: Pro-active with goal setting and functional requirements and “self-regulation”

Phases in European safety regulation

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Phase 4</th>
</tr>
</thead>
</table>


Change in regulatory strategy on the Norwegian continental shelf (1980s)

Regulators strategy

<table>
<thead>
<tr>
<th>Reward/punishment</th>
<th>Co-operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opponent USA North Sea I</td>
<td>Co-player GB North Sea II</td>
</tr>
<tr>
<td>The enterprise GB</td>
<td></td>
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</tbody>
</table>

8
A Risk Regulatory Regime

The control components

<table>
<thead>
<tr>
<th>Information gathering</th>
<th>Standard setting</th>
<th>Behaviour modification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>USDCS</strong></td>
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<tr>
<td>Legal requirement of Lost Time injury, oil and gas emission, but not yearly updating of safety performance data. Initiatives taken to improve voluntarily reporting.</td>
<td>Laws and regulations with prescriptive detailed rules providing a multitude of legally-enforceable requirements with industrial standards included.</td>
<td>Unannounced and announced inspections using detailed checklists of &quot;Potential Incidents of Non-Compliance&quot; (PINC). Hard policing and sanctions for non-compliance. Low involvement of workers and unions.</td>
</tr>
<tr>
<td><strong>UKCS</strong></td>
<td></td>
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</tr>
<tr>
<td>Requirement to report injuries, diseases and dangerous occurrences. Yearly reports and statistics provided by HSE. The &quot;Key program&quot; provides important safety indicators.</td>
<td>Goal and risk based regulation with a detailed &quot;Safety case&quot; has to be qualified by independent and competent actor and approved by HSE.</td>
<td>A flexible approach balancing enforcement with the industries choice of technology and systems to meet safety standards.</td>
</tr>
<tr>
<td><strong>NCS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A monitoring program of safety performance, based on tripartite effort has been developed since 2001. Gives priority for regulators enforcement strategy</td>
<td>Coherent and integrated laws and regulations. Risk and performance-based with use of legal standards with flexible interpretation and use of industrial standards.</td>
<td>Based on dialogue, trust based and soft instruments as enforcement strategy. Involvement of workforce unions at national, industrial and company</td>
</tr>
</tbody>
</table>

The control components: Information gathering, Standard setting, Behaviour modification.
### Comparing NCS and US (I)

<table>
<thead>
<tr>
<th>Area</th>
<th>Norwegian continental shelf</th>
<th>US outer continental shelf</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal framework</td>
<td>Coherent integrated performance based framework with functional requirements. A framework regulation with four more detailed regulations. Ambiguity re enforcement and liability.</td>
<td>Many laws and regulations with prescriptive detailed rules with a multitude of legally-enforceable requirements. Also reliance on liability law for deterrence.</td>
</tr>
<tr>
<td>Cost-benefit analysis</td>
<td>Ambiguous and not doctrinal</td>
<td>Presidential directive with strong emphasis on restricting burden of new regulations</td>
</tr>
<tr>
<td>Legal standards</td>
<td>Legal standards give flexibility and a space of interpretation. Companies follow industrial standards and are free to choose among these standards</td>
<td>Regulators adopt industrial standards for company implementation and agency enforcement. Also application of liability doctrines in lawsuits by government and other parties.</td>
</tr>
</tbody>
</table>


### Comparing NCS and US (II)

<table>
<thead>
<tr>
<th>Area</th>
<th>Norwegian continental shelf</th>
<th>US outer continental shelf</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspections and sanctions</td>
<td>One strong agency (PSA). Inspections announced and dialogue and trust based. Soft helpful approach.</td>
<td>Several agencies (BOEM, BSEE, Coast Guard, etc.). Unannounced inspections using checklists for &quot;Potential Incidents of Non-Compliance&quot; (PINC). Hard policing approach.</td>
</tr>
<tr>
<td>Involvement of work force</td>
<td>Strong involvement of unions in different arenas of cooperation; policy, industrial and company level</td>
<td>Non-involvement of workers, unions and occupational safety agency.</td>
</tr>
</tbody>
</table>
Challenges with a soft law approach

1. Combining a bottom-up and top-down approach and the use of legal binding- and non legal binding norms.

2. The paradox of flexibility in managing and controlling risk embedded in organizational change and technological innovation

3. Combining different roles of inspections from compliance with the law (command and control) toward being a change agent for improving safe and resilient operations

4. Balancing between trust and distrust in the relationship among regulator and the regulated and in the industrial relations

D-1: Different systems or a false dichotomy?

Prescriptive rules and regulation including industrial standards (Command & Control)

Self-regulation with voluntary and accepted standards

Regulator

Performance based rules with functional requirements

Legal standards

Voluntary industrial standards in compliance with regulations

Industry
D-1: Norwegian and US approach

NCS
- PSA delegates control and presumes willingness and capability among the actors to collaborate upon accepted standards for "good practice".
- Uses the legislation to establish a binding framework for mutual activities striving for consensus among the actors.
- Regulator’s role in enabling a collaborative process of continuous improvement (Forums, etc.).

US
- The regulators make clear distinctions between right and wrong as defined by legislation and industry standards.
- Regulators focus on each operator’s compliance with their prescriptive rules and standards.
- Regulator reliance on industry for technical standards to improve safety performance.

D-1: Top-down vs. bottom up

Knowledge - production and science
Legal binding norms
Civil society
Industry standards
Technology & industry driven
Value creation
Industrial activities
Scope of regulation
Best practice
Value and policy driven
Politics: Legislation, Administration, Inspection
Legal binding norms
Civil society, third party
Technology & industry driven
## D-1: Legal norms and standards

<table>
<thead>
<tr>
<th>Norms</th>
<th>Main groups</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal binding norms</td>
<td>Acts</td>
<td>Petroleum Act, Working Environment Act</td>
</tr>
<tr>
<td></td>
<td>Regulations</td>
<td>The Framework Regulation (Royal Decree) Regulations regarding (1) Management, Activity, (2) Information and (3) Installation (Passed by PSA)</td>
</tr>
<tr>
<td></td>
<td>Regulatory guidelines</td>
<td>Guidelines to the regulation Letters of interpretation</td>
</tr>
</tbody>
</table>
D-2: Self-regulatory systems

- The principles of self-regulation:
  Continuous learning and improvement
  Quality management, Deming circles: Plan-Do-Check-Act

D-2: Enforced «self-regulation»
### D-3: The inspectors dilemma

<table>
<thead>
<tr>
<th>Inspectors roles</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Controller</td>
<td>Change agent</td>
</tr>
<tr>
<td></td>
<td>Asymmetrical relation</td>
<td>Symmetrical relation</td>
</tr>
<tr>
<td>Legal binding norms</td>
<td>Investigator an control of compliance with laws and legal binding norms</td>
<td>Developing vague legal norms in order to match organizational and technological development</td>
</tr>
<tr>
<td>Legal standards</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-legal norms and standards</td>
<td>3 Negotiation and assessment of industrial standards and Best Practice in compliance with legal standards</td>
<td>4 Aiming at improving industry by matching professional interest and virtue among inspector and industry.</td>
</tr>
</tbody>
</table>

### D-4 The trust based tripartite model

- **Authority**
- **Employer**
- **Unions**
- **Employee**

Diagram showing the tripartite collaboration between employer, unions, and employee with safety organisation at the centre.
D-4: Initiatives to re-build trust

- Safety Forum
- Regulatory Forum
- “Working together for Safety” (project portfolio)
- The “Trend in Risk Level” Project
- The Competence project
- Performance Indicators

- Around year 2000: Mistrust arose between the industry and the regulator & unions on offshore safety
- NPD: "A culture of violating procedures. This is a management problem..."
- Public debate on offshore safety (as 20 years before)

D-4: Trust and distrust

<table>
<thead>
<tr>
<th>Trust</th>
<th>Functional</th>
<th>1 Trust based on mature cautions</th>
<th>2 Naive and blind trust</th>
<th>Dys-functional</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 Distrust, based on realistic precautions</td>
<td>4 Distrust based on detailed surveillance and control</td>
<td></td>
<td></td>
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</tbody>
</table>

Distrust
### Coping with the challenges (I)

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Norwegian regime</th>
<th>US regime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coping with complexity</td>
<td>Purpose, performance and risk based regime and compliance based on enforced self-regulation</td>
<td>Command and control with detailed technical &amp; prescriptive requirements. Low threshold for bringing conflicts to court hampers regulatory initiatives.</td>
</tr>
<tr>
<td>Paradox of flexibility</td>
<td>Agencies refrain from enacting detailed rules and instead use broadly stated legal standards and functional requirements to define company responsibilities.</td>
<td>Industry standards, developed by industrial associations, are adopted or recognized by regulators and thereby become inflexible requirements until changed over time by industry</td>
</tr>
</tbody>
</table>

### Coping with Challenges (II)

<table>
<thead>
<tr>
<th>Dilemma</th>
<th>Norwegian regime</th>
<th>US regime</th>
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</thead>
<tbody>
<tr>
<td>Inspectors’ roles</td>
<td>Combined role as controller and change agents. Mixing of roles may create confusion</td>
<td>Checklist inspection produces prescribed data for determining compliance and enforcement. Misses’ big picture of safety management.</td>
</tr>
<tr>
<td>Trust/distrust</td>
<td>High degree of participation by industrial actors, including the workforce &amp; unions, based on egalitarian values. Regulators facilitate arenas for consensus.</td>
<td>Adversarial roles of regulator and industry leads to lobbying against regulator reforms. Transparency. No role for labor. Low degree of trust</td>
</tr>
</tbody>
</table>
Summing Up (I)

- The Norwegian regime has evolved over 40 years of experience, with changes triggered by major accidents:
  - Risk- and performance-based with functional responsibilities and suggestion that companies follow industry standards at their discretion
  - Exchange of experience & ideas across the North Sea with UK
  - One strong coordinating regulatory body (PSA) which promotes a collaborative approach to improving safety.

- The US regime has not changed with regard to the main features of its design and implementation:
  - Regulators required by OCSLA to set prescriptive standards. Usually adopt industry voluntary standards making them mandatory and enforceable.
  - Reliance on industry for new standards, regional moratoria to satisfy opposition, and liability law for deterrence
  - No systematic collection and use of safety performance data

Summing Up (II)

- The Macondo accident caused producing nations to review their regimes:
  - Norway regarding enforcement ambiguities and new EU offshore safety regulations
  - US regarding value of performance-based approach leading to enactment of SEMS rule on functions to be performed according to API standards and recommended practices

- Interdisciplinary research reveals that the interplay of many factors in addition to accidents have shaped the 2 different regimes: e.g. established roles of industry and labor, national and industrial economic interests, other energy options, legal and administrative systems, number of offshore operations, technological prowess, regard for behavioral aspects of safety management, and cultural values and norms.
Thanks for your attention.

For further documentation see

**Risk Governance of Offshore Oil and Gas Operations**

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