



The Scientific Risk-based Approach

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The Scientific Risk-based Approach

What is a risk-based approach?

The current situation at IMO

Why this progressive change?

Other industries: can we learn?

Formal Safety Assessment (FSA)

Safety Management

Embracing a more risk-based approach

Summary and conclusions



What is a Risk-based Approach?

Explicit hazard identification

Root causes of dangerous events

Proactive and predictive

Consistent with setting goals

Basis for safety management



The current situation at IMO

ISM Code

HSC Code

Alternative Design options

Formal Safety Assessment

Risk-based approach already accepted



Why this progressive change?

Changes outpace regulations

Design migration

Ineffective in face of new hazards

Assumptions & limitations implicit

Prescription can hamper progress

Unintended application

Reliance on lagging indicators

Accidents expose shortcomings



Other industries: What can we learn?

Nuclear

Chemical process

Aviation

Offshore oil & gas

Rail transportation



Formal Safety Assessment (FSA)

Generic application

Current shortcomings

ALARP

(As Low As Reasonably Practicable)



Safety Management

Division of responsibility

‘Duty holder’ concept

Safety management in design

Safety management through-life



Embracing a more risk-based approach

Sustaining FSA

Strategic review of prescriptive requirements

Beyond prescription

Case-specific ALARP

Holistic safety management

Fundamental regulatory reform

Foresight panel



Summary and conclusions

- Strategic FSA review of current prescriptive rules
- Collate specific risk-based application information
- Event and causation data reporting
- ALARP requirement for certain ships or systems
- Through-life safety management requirement
- Foresight panel to anticipate future circumstances
- Proactive fundamental IMO review of regulations





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