

A Regulatory Perspective on Human Factors

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Technical Officer – Human Factors



Outline

- What is NOPSEMA's role?
- How do we define Human Factors?
- What is NOPSEMA's approach?
- What can duty-holders expect?

NOPSEMA's role in Safety Performance Improvement



A History of Human Error

- Costa Concordia
- Deepwater Horizon
- Montara
- Texas City
- Columbia
- Glenbrook Train
- Longford
- Piper Alpha
- Kings Cross Fire
- Chernobyl
- Challenger
- Exxon Valdez
- Three Mile Island
- West Gate Bridge
- Titanic



Human Error in Australian Offshore Petroleum

- Human Factors identified as a causal factor:
 - in **nine out of ten** notified accidents and dangerous occurrences
 - in **100%** of actual or potential deaths and serious injuries
- Possible interpretations:
 - inaccurate reporting
 - blame-focused investigations
 - **human factors are critical to safe operations**

So What?

- If Human Factors contribute to accidents and dangerous occurrences...



- ...then regulator activity must address human as well as technical factors

Regulators

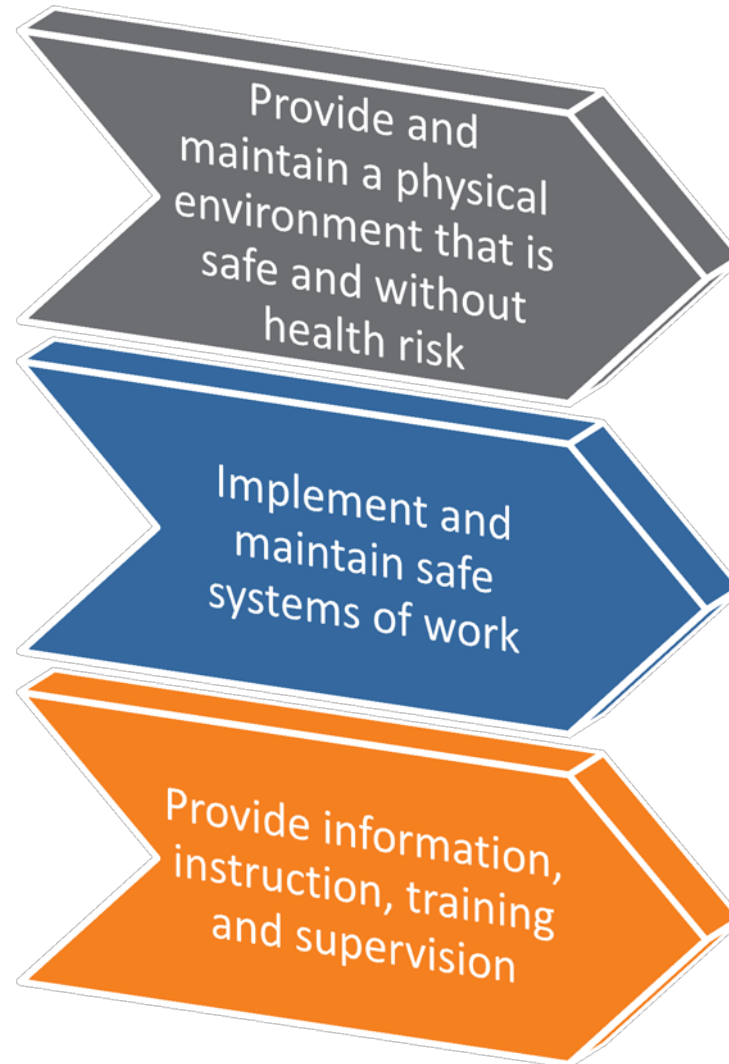
- NOPSEMA's functions¹:
 - Compliance
 - Improvement
 - Governance



1. *Offshore Petroleum and Greenhouse Gas Storage Act 2006*



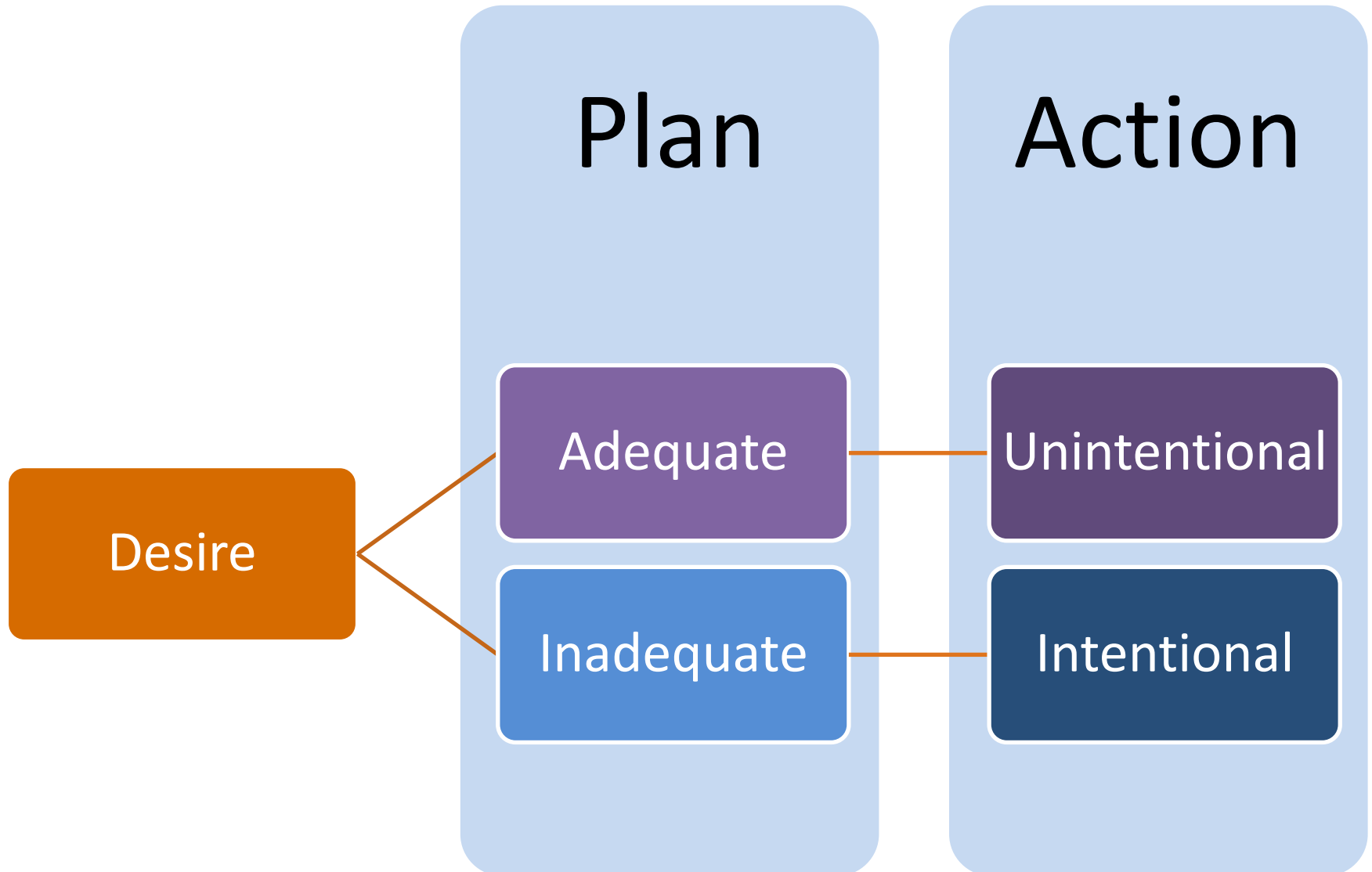
Duty Holders – Operators and Employers



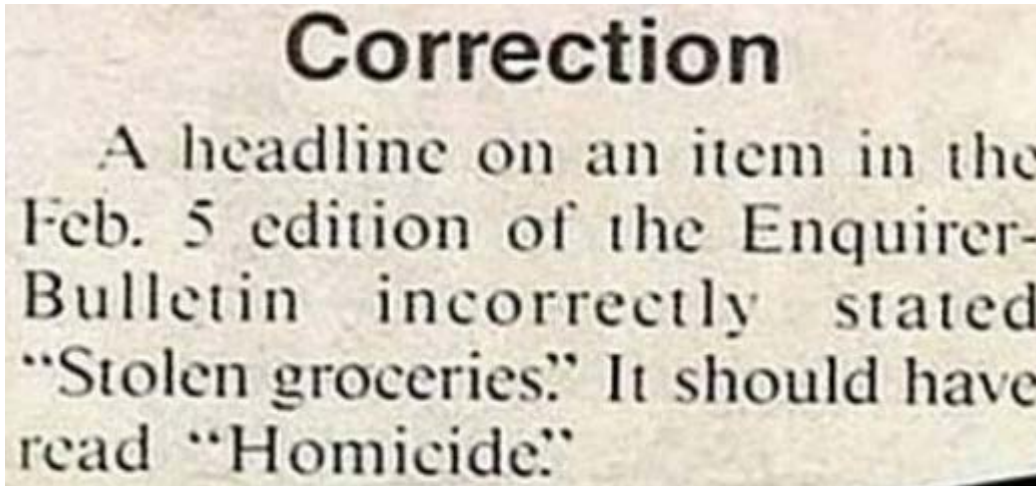
Defining Human Factors



“Failure of a Planned Action to Achieve a Desired Outcome”



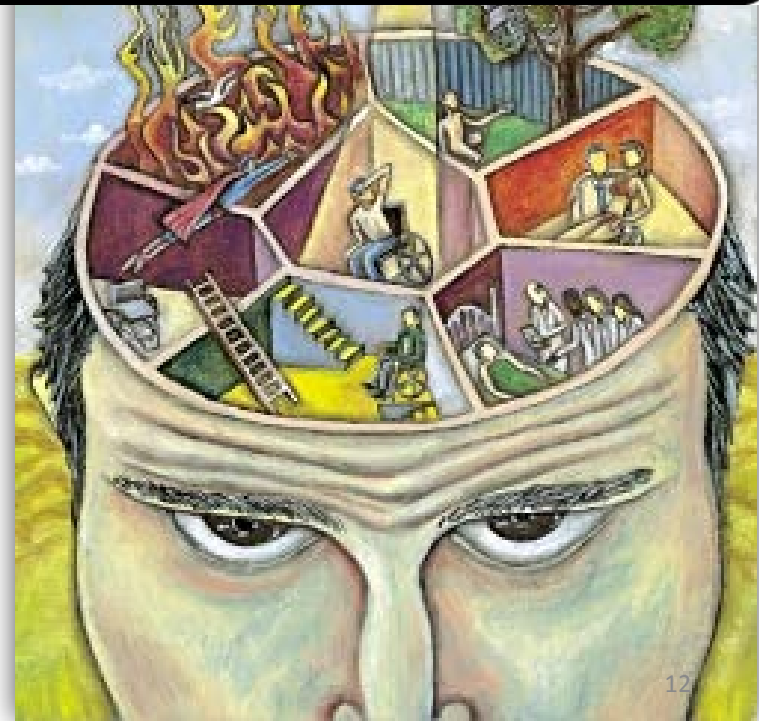
Human Reliability



- Humans are inherently unreliable
 - 1 error per 100 steps for procedure-based tasks
 - 1 error per 10 steps for critical alarm diagnosis and response
- What influences human reliability?

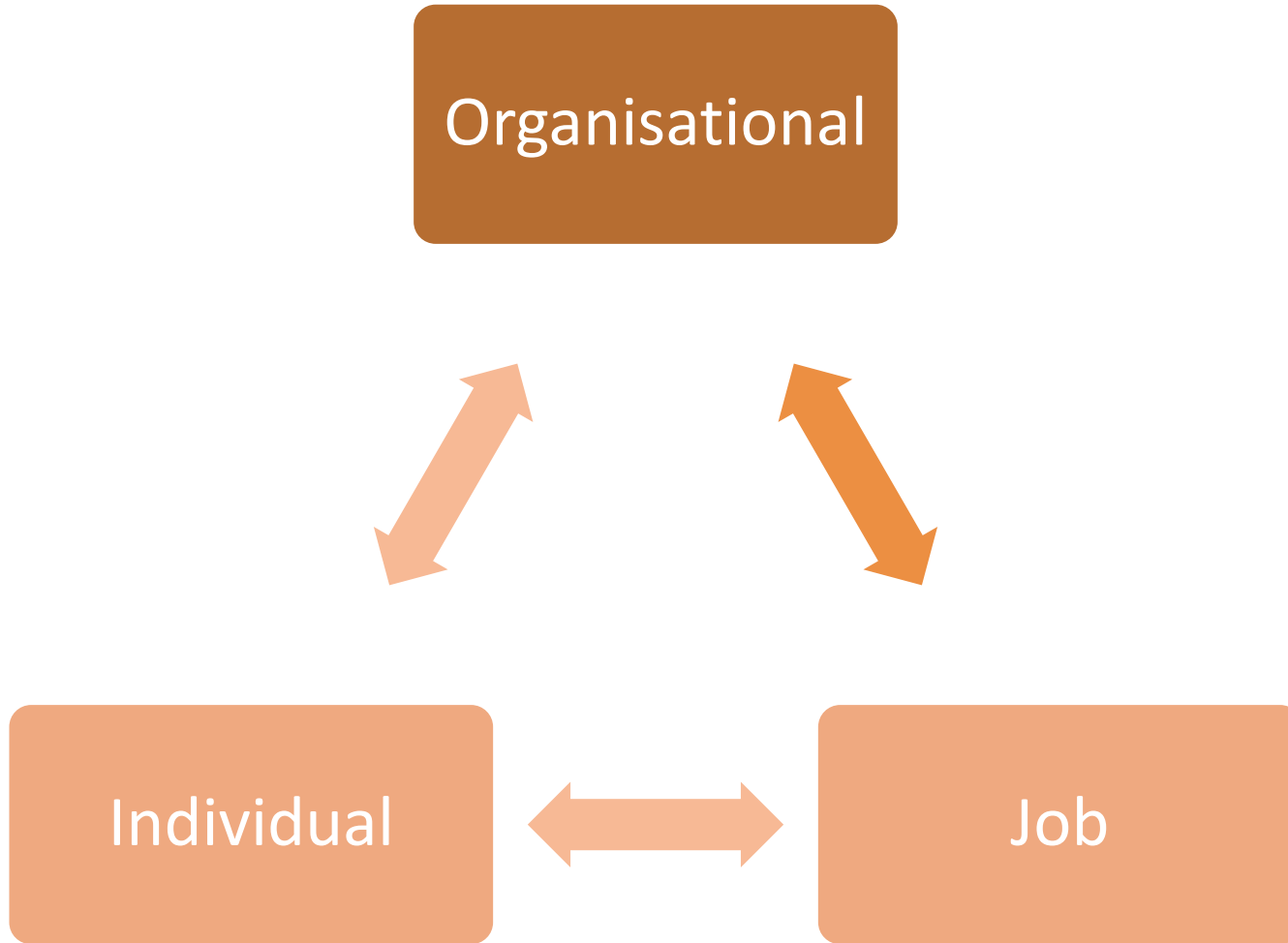
Human Factors

- Individual
 - Personality
 - Competence and skill
 - Mood



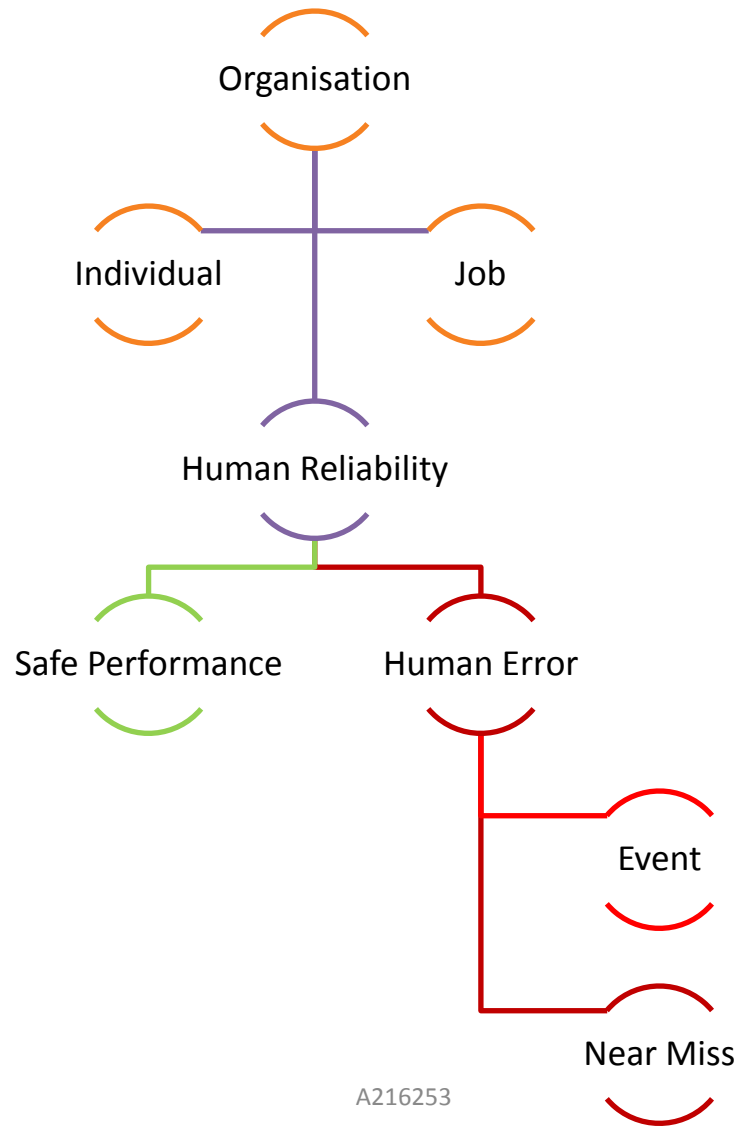


An Interaction





Model of Human Factors





NOPSEMA's Human Factors Definition

- *The ways in which the **organisation**, the **job**, and the **individual interact** to influence human reliability in **major accident event** causation in the offshore petroleum industry.*

A Series of National Programs



NOPSEMA's Functions

Monitor & Enforce

Investigate

Compliance

Promote

Advise

Improvement

Co-ordinate

Report

Governance



NOPSEMA's Approach to Human Factors

Compliance	Improvement	Governance
Inspection Tools	Industry Research	Inter-Agency Reporting
Inspection Reports	Guidance and Advice	



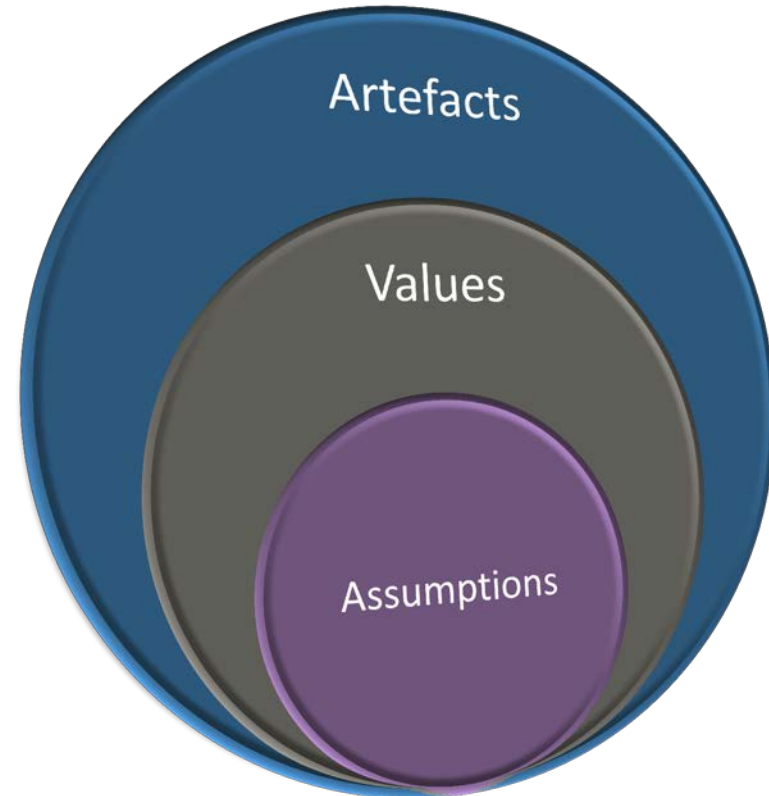
Promoting Human Factors

- Human Factors ‘Modules’, e.g.:
 - Safety Culture
 - Human Reliability in Risk Assessments
 - Psychosocial Risk Management
- Successive National Programs
 - Inspections
 - Industry Research
 - Guidance

Module 1 - Safety Culture

- Project Outline:
 - Defining Safety Culture
 - Tool development
 - Tool validation
 - Implementation
 - Results

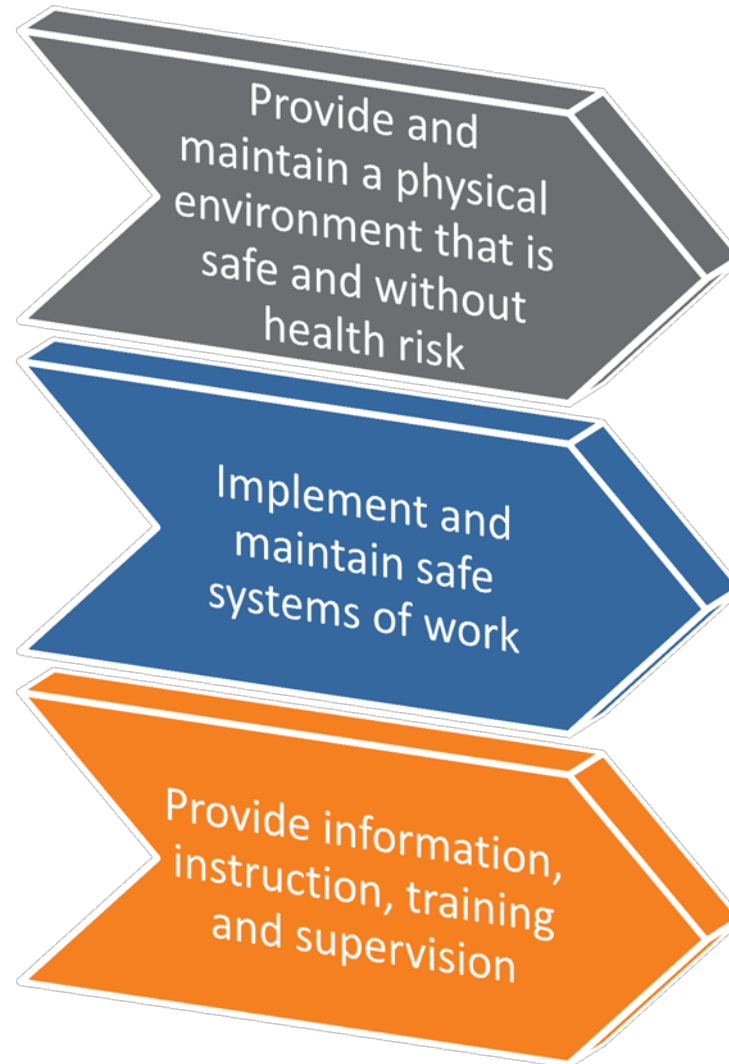
- Project Launch
 - Coming soon...



What can Duty Holders Expect?



Duty Holders – Operators and Employers





NOPSEMA's Activities

- During inspections:
 - Increased focus on human factors
 - Participation in research
 - Human Factors specialists
- Guidance and Advice
 - Access to research findings
 - Published materials
 - Forums, conferences, etc.



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Key Messages

- Human Factors are important
- Individual, Job, and Organisational interaction
- NOPSEMA will be focusing on Human Factors in Major Accident Event prevention