

# Noise Management & Legislative Compliance

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# The cost of hearing loss in Australia

- Access Economics report – Listen Hear! The economic impact and cost of hearing loss in Australia - February 2006
  - In 2005, the real financial cost was estimated at **\$11.75 billion** (or 1.4% of GDP), mainly from loss of productivity
  - In 2005, the cost due to loss of wellbeing was estimated at **\$11.3 billion**
  - Hearing loss currently affects **1 in 6 Australians**, which is projected to increase to 1 in 4 by year 2050 mainly due to the ageing population

# The cost of hearing loss in Australia

- Access Economics report – Listen Hear! The economic impact and cost of hearing loss in Australia - February 2006
  - Exposure to **noise** accounts for **37%** of all hearing loss in Australia
  - Exposure to **ototoxins** and **age** related effects together make up much of the remaining cases of hearing loss
  - NIHL, from occupational exposures, is **preventable**

# “Accounting” for hearing loss

1. Hearing loss is a **liability** to business:
  - Incurred from **past events** - (e.g. from noise exposure)
  - Will result in **future economic loss** - (i.e. a cost to business)
  - Present or future **obligation** - (i.e. to manage noise – legislative duty)
2. **Account** for it now because it will cost you in the future

# What have our inspections and audits been telling us so far?

Many operators:

1. Aren't familiar with the **prescriptive legal requirements** to manage noise exposures
2. Don't appoint **senior line management** to develop, implement and maintain the noise management program
3. Don't ensure that **middle management** is capable of implementing noise management program

# What have our inspections and audits been telling us so far?

Many operators:

4. Don't necessarily engage **competent noise advisors** to assess noise risks and recommend controls
5. Don't know if noise exposures are significant because many **risk assessment reports** don't make statements on risk levels or who is at risk
6. Don't implement **effective recommendations** made in risk assessment reports in a timely manner

# Risk assessment reports need to improve

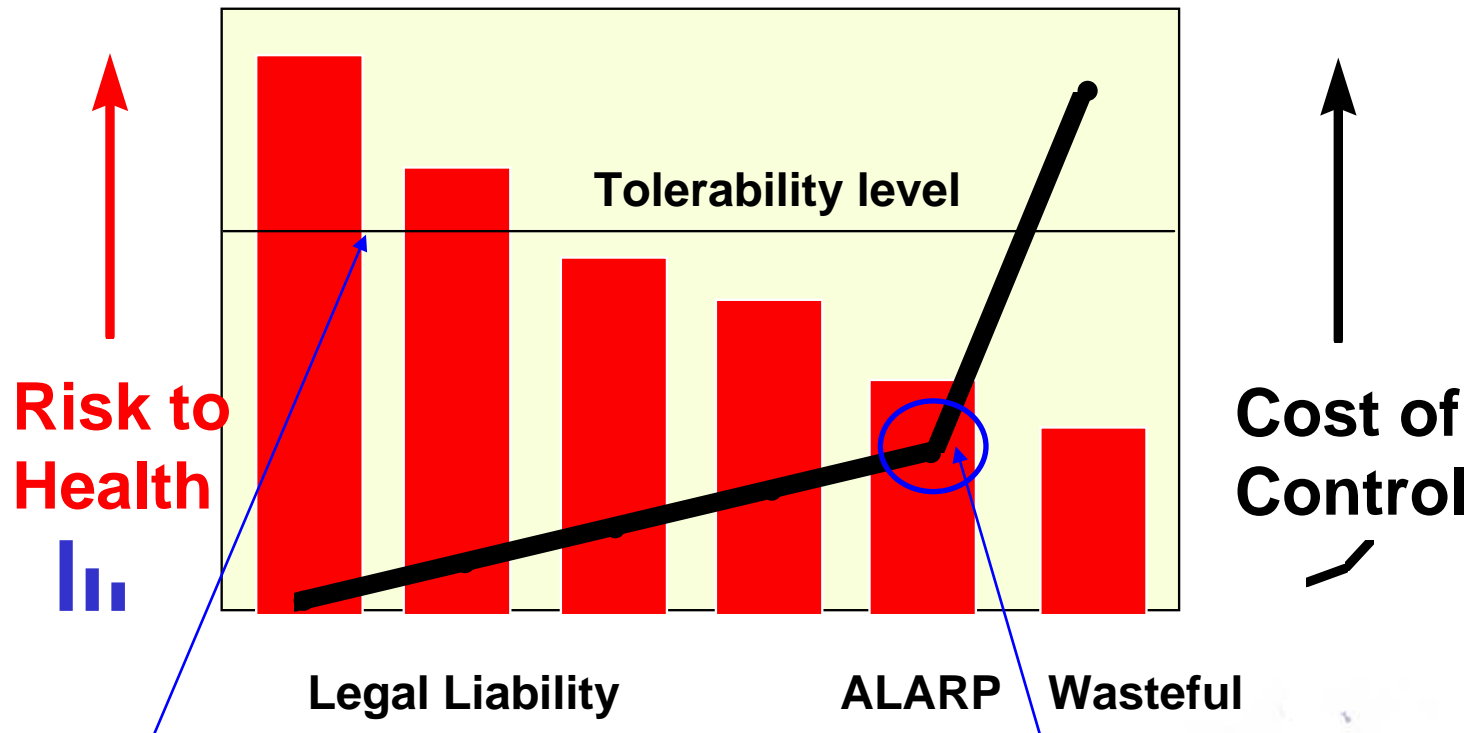
1. Many risk assessments conducted to date on offshore facilities either:
  - Don't adequately document workforce noise exposures (i.e. risks),
  - Don't consider other known risks to hearing, such as exposure to ototoxins,
  - Don't state the requirements of the legislation or whether these requirements are actually being met, and
  - Don't evaluate and recommend effective control options, following a hierarchy of controls, to meet the minimum requirements of the legislation.

# Promotion vs. Enforcement since 2005

1. NOPSA's **promotional initiatives** include:
  - Presenting at Noise Officer training courses since 2006
  - 4 NOPSA inspectors are now trained noise assessors
  - Various industry presentations since 2007
  - Providing advice to operators & consultants
  - 8% of inspections/audits include noise management in their scope
  - Working with the ASCC to gather noise exposure data offshore
2. NOPSA's **enforcement initiatives** include:
  - 3 warning letters issued
  - 6 improvement notices issued
  - No prosecutions yet – but these are early days!

# P(SL)(OHS) Regs 1993 and ALARP

- Helping you to comply with the P(SL)A 1967



Legal Liability Limit – The Regs

e.g. LAeq,8h and LC,peak

ALARP – The Act



Adapted from OGP & IPIECA (2006)

# Complying with the law

## 1. Compliance with the Regulations –

- Ensure shift-adjusted LAeq,8h exposures are  $\leq 85$  dB(A)
- Ensure that LC,peak exposures are  $\leq 140$  dB(C)
- Manage noise exposure in a manner consistent with the National Code of Practice for Noise Management and Protection of Hearing at Work [NOHSC 2009]

## 2. Compliance with the Act –

- Ensure that risks to hearing are **ALARP** – the real challenge!

# Guidelines for Noise Management

## - The Basis for the Guideline

1. Outlines legislative requirements for noise management:
  - P(SL)A 1967
  - P(SL)(OHS) Regs 1993
  - National Standard [NOHSC 1007]
  - National CoP [NOHSC 2009]
2. Risk Assessment principles adopted from the OGP & IPIECA publication (2006):
  - Controlling Health Risks at Work: A roadmap for the oil and gas industry: Health Risk Assessment template

# Guidelines for Noise Management

## - The Scope of the Guideline

1. Background issues – problems facing the industry
2. Forming a competent team for the HRA
3. Identifying noise hazards
  - Identifying Similar Exposure Groups (SEGs)
  - Identifying noise Hazards, Consequences and current Controls
4. Noise Risk Assessment
  - Preliminary risk assessments
  - Detailed risk assessments
    - Monitoring techniques (e.g. baseline, worst-case, etc)
    - Sampling and analysis (e.g. single sampling, statistically-based sampling)
    - Adjustments to exposures for extended work-shifts
    - Health surveillance monitoring
    - Exposure to ototoxins

# Guidelines for Noise Management

## - The Scope of the Guideline

5. Controlling Noise Risks
  - Preventative and Mitigative controls
  - Evaluating control options
  - Maintenance of controls
  - Training
6. Recovery Measures
7. Corrective Action Plans (CAP)
8. Auditing the Noise Management System
9. Record Keeping

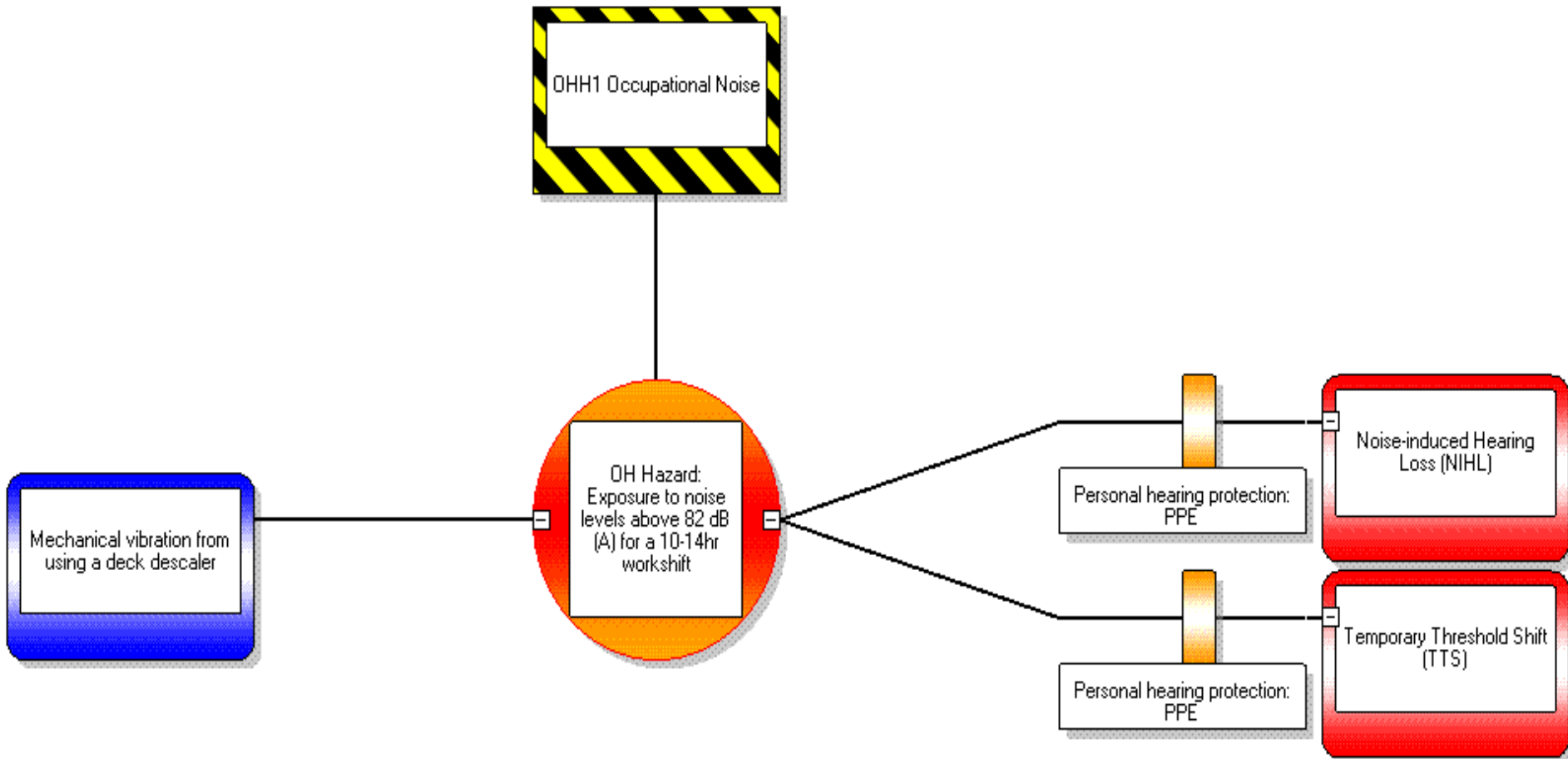
# Guidelines for Noise Management

## - Risk Assessment Tools

1. HRA Prompt Sheet (quick reference chart)
2. **Identification** of noise hazards
  - Hazard, Consequence and Control Diagram
3. **Assessment** of noise exposure (i.e. risk)
  - Risk Assessment Matrix (RAM) – qualitative assessment
  - Consequence and Likelihood Rating Charts – quantitative assessment (i.e. calculate exposures)
4. **Control** of noise exposures
  - Control Chart – prioritising actions based on risk from exposure to noise

# Identification of Noise Hazards

## - Hazard, Consequence and Control Diagram



# Identification of Noise Hazards

## - Risk Assessment Matrix (RAM)

		CONSEQUENCE			
		Negligible 1	Minor 2	Significant 3	Major 4
LIKELIHOOD	Very Low A	A1	A2	A3	A4
	Low B	B1	B2	B3	B4
	Medium C	C1	C2	C3	C4
	High D	D1	D2	D3	D4

Table adapted from OGP & IPIECA (2006)



# Assessment of Noise Exposure

## - Consequence and Likelihood Rating Charts

CONSEQUENCE RATING	DEFINITION (Consequence Category: Harm to People)
1. <b>Negligible</b>	Negligible health effects: Not affecting work performance or causing disability
2. <b>Minor</b>	Minor health effects: Minor sleep disturbance, minor communication impairment
3. <b>Significant</b>	Significant health effects: E.g. Temporary threshold shift, major sleep disturbance, mood-disorders, depression
4. <b>Major</b>	Major health effects. E.g. Permanent threshold shift, such as acoustic trauma, NIHL

LIKELIHOOD RATING (Based on assessed effectiveness of controls in place)	EXPOSURE EVENT (Use adjusted LAeq,8h or C,peak, as applicable)	DEFINITION
A. <b>Very Low</b>	<b>&lt;10% of Exposure Standard (ES)</b>	Exposures are negligible
B. <b>Low</b>	<b>10% ≤ 50% of ES</b>	Exposures are controlled well below ES and are likely to remain so in accordance with standards
C. <b>Medium</b>	<b>&gt;50% – 100% of ES</b>	Exposures are currently controlled below ES to meet standards but control may be reliant on less robust measures such as personal protective equipment
D. <b>High</b>	<b>&gt; ES</b>	Exposures are not adequately controlled to meet standards and continuously/regularly exceed ES, indicating unreasonable risk to exposed persons



**NOPSA**

Tables adapted from OGP & IPIECA (2006)

# Control of Noise Exposures

## - Control Chart

		Likelihood Rating →			
Consequence Rating ↓		Very Low A	Low B	Medium C	High D
1		No Immediate Action Required		Third Priority	Second Priority
2					
3		No Immediate Action Required	Third Priority	Second Priority	First Priority for Action
4					
Exposure Event →		<10% ES	10% ≤ 50% ES	>50% – 100% ES	> ES

Tables adapted from OGP & IPIECA (2006)

# Demonstrating that risks are ALARP

## - Good risk management practice

1. The Guidelines outline the processes for:
  - Conducting an **appropriate risk assessment**
  - Choosing **appropriate controls**
2. Compliance with the Guidelines is **not mandatory**, but the risk management principles behind them are
  - Compliance with the risk management principles outlined in the Guideline should assist compliance with the Act/Regs

# Final Thoughts -

1. **Account** for hearing loss now – it is a **liability** to your business
2. **Prevention** of noise exposures, so far as is reasonably practicable, **is a requirement of the law**
3. You **must** be able to **demonstrate** that you have **prevented** noise exposures as far as is reasonably practicable

# Final Thoughts -

## 4. Appropriate demonstration requires:

- Knowledge and understanding of the law
  - Noise management expertise
    - People
    - Plant
    - Procedures
  - Management/Workforce commitment and understanding
  - Evidence that noise exposures are being reduced
- The Guidelines fit in here

## 5. NOPSA will continue to promote noise management and will not hesitate to enforce the law in order to improve compliance



# References

1. Petroleum (Submerged Lands) Act 1967
2. Petroleum (Submerged Lands) (Occupational Health and Safety) Regulations 1993
3. NOHSC 1007 (2000)
  - National Standard for Occupational Noise
4. NOHSC 2009 (2004)
  - National Code of Practice for Noise Management and Protection of Hearing at Work
5. AS/NZS 1269 series (2005)
  - Occupational Noise Management

# References

6. NOPSA Guideline
  - Noise Management: Principles of Risk Assessment and Control
7. OGP & IPIECA (2006)
  - Controlling Health Risks at Work: A roadmap to Health Risk assessment in the oil & gas industry.
8. Access Economics (2006)
  - Listen Hear! The economic impact and cost of hearing loss in Australia

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