NOPSEMA
Australia's offshore energy regulator

GUIDANCE NOTE

Noise Exposure Standards

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Core concepts

Overview

Excessive noise is a recognised occupational health and safety hazard. This guidance note supports dutyholders in meeting legislative requirements in managing noise to ensure they are reduced to a level that is as low as reasonably practicable (ALARP).

Legislative requirements

Under the Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2024, workforce exposure must not exceed:

$L_{Aeq,8h}$: 85 dB(A) (8-hour equivalent continuous A-weighted sound level).

$L_{C,peak}$: 140 dB(C) (C-weighted peak sound pressure level).

Measurement and assessment of noise immission and exposure must comply with AS/NZS 1269.1:2005.

Occupational Noise Management Standards

The AS/NZS 1269 series sets standards for managing occupational noise, covering measurement and assessment (Part 1), noise control strategies (Part 2), hearing protector programs including attenuation calculations (Part 3), and auditory health assessments (Part 4), providing dutyholders with comprehensive guidance for managing workplace noise exposure.

Assessment and Control

If assessments indicate noise exceeds prescribed limits:

- investigate sources and prioritise noise reduction (AS/NZS 1269.2)
- implement a hearing protector program, including attenuation calculations (AS/NZS 1269.3)
- conduct follow-up assessments:
    - every 5 years: Review changes due to equipment, processes, or controls
    - supplementary: targeted assessments for new plant, changed practices, or seasonal variations.

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Definitions

Competent Person	A competent person is someone with formal training and practical experience in occupational noise assessment, capable of conducting measurements, interpreting results, and recommending controls in accordance with AS/NZS 1269.1, inlcuding the competency requriements outlined in Appendix A.
Dutyholder	For the purpose of this guidance note a dutyholder includes an operator of a facility, a person who is in control of any part of a facility, or of any particular work carried out at a facility and an employer.
Exposure to noise	Exposure to noise is determined at the person's ear position without taking into account any protection that may be afforded by personal hearing protectors, as per Section 3 Definitions AS/NZS 1269.1.

Abbreviations/Acronyms

ALARP	As low as reasonably practicable
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
OHS	Occupational health and safety
OPGGSA	Offshore Petroleum and Greenhouse Gas Storage Act 2006
OPGGS(S)R	Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2024
SMS	Safety Management System

1. Legislative Duties

The overriding legislative requirements applicable to noise exposure are the duties that are set out in Clauses 9 to 15 of Schedule 3 to the *Offshore Petroleum and Greenhouse Gas Storage Act 2006 (OPGGS Act)*, and in the corresponding clauses of the relevant state and Northern Territory Acts, where powers have been conferred on NOPSEMA. References hereafter are to the Commonwealth (Cth) legislation.

In addition, the Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2024 (the Safety Regulations) requires the operator of any facility, as part of the safety case development process:

- to identify all hazards to health and safety including noise
- assess the risks
- put in place control measures that reduce the risks to as low as reasonably practicable, and
- to do this within a comprehensive and integrated safety management system.

2. Noise Exposure Limits

Under Regulation 3.6 of the Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2024, workforce exposure must not exceed the exposure limits:

$L_{Aeq,8h}$ (8-hour average): 85 dB(A)

$L_{C,peak}$ (peak level): 140 dB(C)

Exceeding these limits without a NOPSEMA exemption constitutes a strict liability offence and may result in penalties.

3. Standards

Occupational Noise Management Standards:

The AS/NZS 1269 series provides a structured framework for managing occupational noise exposure. The series outlines key requirements across five parts:

- Part 0 – Overview and general requirements
  Introduces the series and outlines general principles for effective noise management.
- Part 1 – Measurement and assessment of noise immission and exposure
  Details methods for accurately measuring and assessing noise levels in the workplace.
- Part 2 – Noise control management
  Focuses on strategies and engineering controls to reduce noise at the source.

- Part 3 – Hearing protector program
  Provides guidance on the selection, use, and maintenance of hearing protection devices.
- Part 4 – Auditory assessment
  Covers health surveillance requirements, including baseline and periodic hearing tests.

Together, these standards support duty holders in implementing effective noise risk controls and maintaining compliance with workplace health and safety obligations. Duty holders should consult all parts to ensure a comprehensive approach to hearing conservation.

Part 1: Measurement and assessment

This part outlines procedures for assessing noise immission and occupational noise exposure using calibrated instruments and standardized protocols.

Details measurement requirements:

- measure at the ear position, excluding the effect of hearing protection
- use sound level meters compliant with AS IEC 61672
- calibrate instruments before and after use.

Key metrics are defined:

- $L_{Aeq,8h}$: 8-hour equivalent continuous A-weighted sound pressure level
- $L_{C,peak}$: Peak C-weighted sound pressure level.

Provides guidance on assessment types:

- preliminary assessments
- task-based detailed assessments.

Provides protocols and guidance:

- instrument selection and calibration
- measurement procedures tailored to workplace conditions
- evaluation methods and standardised reporting formats
- competency requirements for assessors and recommended training topics.

AS/NZS 1269.1:2005 Section 6.2 requires further investigation by a competent person when excessive noise is identified. Upon identification of the major sources of excessive noise, reference shall be made to AS/NZS 1269.2 Part 2: for control strategies.

Part 2: Noise control management

Outlines requirements for designing and implementing noise control measures in both new and existing workplaces.

Emphasises the hierarchy of controls:

1. Elimination and substitution of noise sources.
2. Engineering controls (e.g. enclosures, barriers, dampening, vibration isolation).
3. Administrative controls (e.g. signage, scheduling, restricted access).
4. Personal hearing protection only when other controls are insufficient.

Technical guidance includes:

- practical noise control techniques
- emphasis on proactive design and continuous improvement.

Refer to AS/NZS 1269.2 for details on implementing engineering and administrative controls.

Part 3: Hearing protector program

Establishes administrative and operational requirements for managing hearing protection programs.

Program Elements:

- selection of protectors based on exposure levels, comfort, and compatibility with other PPE
- procedures for fitting, issuing, maintaining, and inspecting protectors
- training workers on correct use and care
- continuous use of protectors in designated noise hazard areas.

Selection Criteria:

- includes methods for selecting protectors when LAeq,8h or LC,peak exceed critical thresholds
- protectors must suit individual exposure profiles.

AS/NZS 1269.1:2005 Section 6.3 outlies assessment protocols for determining sound attenuation needs, with measurement described in Clause 8.5 and calculations of sound attenuation requirements in accordance with AS/NZS 1269.3.

Part 4: **Auditory assessment**

Details procedures for conducting audiometric testing to monitor hearing health

Purpose:

- detect early signs of hearing deterioration
- document existing hearing loss
- refer affected workers to rehabilitation
- support workplace accommodations.

Requirements:

- baseline audiometry testing within 3 months of employment
- follow-up testing at least every 2 years
- controlled acoustic environments and qualified personnel.

Additional Guidance:

- ambient noise level measurement protocols
- competency standards for audiometrists
- use of standardised audiometric symbols and reporting formats.

4. Application of Noise limits, assessment methods and control measures

This section provides practical guidance for applying the standards outlined in Section 3 to manage noise exposure in offshore petroleum facilities.

Measurement and assessment of noise immission and exposure

Noise exposure must be measured at the ear position without accounting for attenuation provided by personal hearing protection, in accordance with AS/NZS 1269.1:2005. For detailed measurement protocols, refer to Section 3, Part 1.

Assessment for Noise Reduction and Control

If assessments indicate potential exposure to excessive noise:

- investigate and identify noise sources
- prioritise noise reduction measures
- engage a competent person with expertise in engineering noise control.

Upon identifying major sources of excessive noise, refer to AS/NZS 1269.2 Part 2: Noise control management for detailed strategies for engineering and administrative controls.

Hearing Protector Program Application

If excessive noise exposure is confirmed and legislation or company policy mandates the use of hearing protectors, a detailed assessment must be conducted by a competent person. This includes:

- measurement of noise levels in affected areas (as per Clause 8.5 of AS/NZS 1269.1)
- calculation of required sound attenuation
- selection of appropriate hearing protectors in accordance with AS/NZS 1269.3 Part 3: Hearing Protector Program.

Refer to AS/NZS 1269.3: Hearing Protector Program (summarised in Section 3 of this guidance note) for program structure and selection criteria.

Applying the Hierarchy of controls

Noise should be controlled primarily through elimination or substitution of noise sources, followed by engineering controls. Administrative controls may be used where engineering solutions are not reasonably practicable.

Personal hearing protectors may be used, but it should be stressed that this is acceptable only if the noise exposure standard cannot reasonably be met by the engineering or administrative approaches.

Refer to AS/NZS 1269.2: Noise Control for detailed guidance and examples.

Summary Guidance for Dutyholders

Dutyholders should:

- use Section 3 as the technical reference for standards
- apply Section 4 as a practical guide for implementation
- ensure assessments are documented and signed off by senior management
- schedule reassessments at least every five years or when significant changes occur.

This approach supports compliance with legislative requirements and promotes continuous improvement in managing noise risks.

5. Compliance and enforcement

Dutyholders should develop a noise control and risk management process to effectively prevent, minimise and control noise exposure to members of the workforce. It is within NOPSEMA's powers

and functions to check compliance OPGGS Act and Safety Regulations requirements related to noise and undertake enforcement if deemed necessary.

Compliance

Compliance with regulation 3.6 can be achieved by conducting noise assessments in accordance with AS/NZS 1269.1:2005. The standard indicates the general objectives of these assessments are as follows:

> (a) Determine the exposure to noise of all people likely to be exposed to 'excessive noise' that is a level of noise in excess of either of the noise exposure limits $L_{Aeq,8h}$ of 85 dB(A) and $L_{C,peak}$ of 140 dB(C).
>
> (b) Obtain more specific information that will help decide what measures to take to reduce noise.
>
> (c) Check the effectiveness of any control measures which have been applied.
>
> (d) Assist in the selection of appropriate hearing protectors where other control measures are not practicable, or will take some time to plan and implement.

Enforcement

Where necessary, NOPSEMA will take enforcement action to ensure duty holders meet legislative requirements in accordance with its **Enforcement Policy (N-05000-PL0067)**, which may be viewed on the agency's website: www.nopsema.gov.au.

Under Regulation 3.6 of the Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2024, it is an offence to allow a member of the workforce at the facility, who is under the person's control, to be exposed to a level of noise that is in excess of either of the noise exposure limits LAeq,8h of 85 dB(A) and LC,peak of 140 dB(C).

A duty holder who fails to comply with this regulation may be prosecuted and fined up to 100 penalty units. If the duty holder is a body corporate, penalties may be ten times the standard penalty.

Importantly, the occupational noise exposure limits set a maximum exposure standard, but do not replace the duty to continually reduce risk a level that is as low as reasonably practicable at all times and at all locations.

When deemed to be reasonably practicable, NOPSEMA expects noise levels to be controlled to meet or fall below the standard limits, without any need to rely on hearing protection.

6. Noise levels in living quarters, offices, etc.

There are no prescriptive regulations that specifically provide for acceptable noise levels within accommodation areas on offshore petroleum facilities.

NOPSEMA's Expectations

Maintain acceptable noise levels in living and working areas. The noise levels in areas such as control rooms, offices, cabins and dining/recreation areas should be significantly below the noise exposure limits for occupational noise and to demonstrate a compliant approach operators should adopt the following or similar benchmarks as part of good practice for accommodation and support areas.[1]

Industry practice – Fixed platforms

In the absence of offshore-specific standards for fixed platforms, AS/NZS 2107:2016 is considered to be good industry practice. Many offshore operators and designers use Australian Standard AS/NZS 2107 *Acoustics—recommended design sound levels and reverberation times for building interiors* as a design benchmark for fixed platforms. Fixed platforms are not mobile like vessels or MODUs (Mobile Offshore Drilling Units). Their accommodation areas (cabins, offices, control rooms, recreation spaces) function similarly to land-based buildings. Therefore, applying building acoustics standards is appropriate for ensuring comfort and health. Its use helps ensure compliance with ALARP principles and supports risk reduction in accommodation areas.

AS/NZS 2107 provides recommended sound levels that support: sleep quality; communication and mental wellbeing. These are critical in offshore environments where personnel may spend extended periods in confined quarters.

The recommended ranges from AS/NZS 2107 for indoor noise levels:

Indoor noise environment	Recommended range
Sleeping areas (e.g. cabins)	35–45 dB(A)
Offices/control rooms	40-50 dB(A);
Recreation Rooms / Dining areas	45-55 dB(A).

Industry practice – Vessels and offshore mobile units

Historically, recommended noise levels for various areas of occupancy on vessels and offshore mobile platforms were outlined in **AS 2254-1988: Acoustics – recommended noise levels for various areas of occupancy in vessels and offshore mobile platforms.** However, this standard

[1] Additional guidance is available in the Technical Report – Offshore Petroleum Facility Accommodation - July 2011, issued by NOPSA. The report provides high-level goals and practical information based on international offshore petroleum industry good practice. It is intended for informational purposes only. It does not constitute a standard, code of practice or regulation. Where appliable, references are provided throughout the report to support information

became obsolete in 2014. Obsolescence of a Standard typically occurs when the responsible committee determines that the publication is no longer suitable for new equipment or current practice, though it may still be retained for servicing existing equipment installations. Operators are now encouraged to refer to the **International Maritime Organisation (IMO) Code on noise levels on board ship (2014)**. This code applies to new ships of a gross tonnage of 1,600 and above but excludes: dynamically supported craft (such as hovercrafts), pipe-laying barges, mobile offshore drilling units (MODU).

In the case of mobile facilities to which neither AS/NZS 2107: 2016 or the IMO Code apply (i.e. dynamically supported craft, pipe laying barges, MODUs) NOPSEMA expects that dutyholders will apply the principles described in Section 3 of this Guidance Note to reduce the risk to members of the workforce from noise exposure to ALARP. Failure to do so may result in enforcement action.

7. References

Legislation

Offshore Petroleum and Greenhouse Gas Storage Act 2006, Act No. 14 of 2006 as amended from time to time.

Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2024.

NOPSEMA Policy

NOPSEMA Publications. *Enforcement Policy* (N-05000-PL0067), Commonwealth of Australia.

Other sources – Standards Australia

Occupational noise management, Part 1 to 4: (Australian/New Zealand Standard No. 1269.1 to 4).

Acoustics – Recommended Design Sound Levels and Reverberation Times for Building Interiors, (Australian/New Zealand Standard No. 2107).

Disclaimer

This document is intended to provide guidance as to the approach that NOPSEMA takes in carrying out its regulatory functions under the Commonwealth *Offshore Petroleum and Greenhouse Gas Storage Act 2006* and associated Regulations, and any state or Northern Territory equivalent, where powers have been conferred on NOPSEMA. Any views expressed in this guidance should not be relied on as advice on the law, nor treated as a substitute for legal advice in any relevant situation.