Inspection of Noise and HAV Offshore

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The Presentation

- Inspection of noise offshore
- Aspects of HAV inspection offshore
Noise and HAV inspection

For a number of years, across many industries, HSE has undertaken targeted, proactive inspections aimed at ensuring compliance, including:

1. the adoption of known *reasonably practicable* measures to eliminate or reduce exposure to N&V by technical and/or organisational means

2. that there is effective cooperation and communication between operator and contractor organisations

3. there is adequate provision of good quality health surveillance
Noise management: Common areas of weakness

- Policy
- Assessment
- Control
- Resourcing
Policies and procedures

- Lack of emphasis on control (organisational and technical)

- Poor understanding of the concept of Action plan

- Lack of planning to eliminate or reduce the problem
Risk assessments, measuring and exposure models

- Compliance with the law is not simply a matter of measurements, prediction models (and repeat measurements)

- However, these may be useful in complying with requirements for risk assessment and formulating an action plan

- The duty is to assess the risks to health and safety arising from the noise
The risk to health and safety

- These are not just the ‘deafness’ regulations…

- Communications, as well as emergency evacuation may also be affected

- This is important in all industries, but may be even more critical in the major hazard environment offshore

- Consider also the consequences of sleep deprivation
The regulations require control, by organisational or technical means

Note: new L108 to be published soon
Action on Control

- A specialist consultant’s recommendation only becomes an action plan when it is formally adopted into the duty holder’s system.
Action plan explained

- Time bound **Action Plan**, which sets out the measures you intend to take reduce noise exposures to as low as reasonably practicable

- Examine all reasonably practicable options, organisational and technical, which may be effectively applied

- Clear roles and responsibilities should be allocated, and appropriate training and support provided to the responsible persons
Resource

- Management of noise control and engineering change may often be driven from onshore

- There needs to be sufficient **resource** allocated, both on- and offshore.

- This includes consideration at design stage, as well as procurement for refit and life extension projects
Competence and coordination

- Offshore Noise coordinators need to have sufficient training and support, including in noise control.

- Whether onshore or offshore, decisions taken should be made on the basis of technical knowledge of the subject; in some cases this may require expert advice.

- The relevant TAs must be involved.
Audiometry

- The offshore ‘medical’ is not intended to comply with the requirements of the regulations for health surveillance

- Supplementary arrangements may be required, in terms of frequency of testing, analysis of results and feedback
Noise Examples
Noise in engine rooms

- 110-113 dB
- 108 dB
Good and bad examples

- Split engine rooms
  - Reduces exposure in planned maintenance
- Remote monitoring
- Workbench in engine rooms

Attitude to noise control:
- “…No need, not 100% occupied”
- “…No need to train coordinator”
- “…Deal with it at toolbox talk”
Blasting – fabric maintenance

- 120 dB

- Sometimes the contractor brings the noise source
Turbine intake baffle removed

- 105 dB at walkway
- Crane and laydown area adjacent
Offshore Accommodation Noise

- Regulations (CoNAWR. 6(5) and DCR. 12) apply

- HSE publication OTR 2001/068 contains recommended noise limits for both working and rest areas on offshore installations (cabins: 45 dB(A))

- NORSOK S002 sets similar limits in the Norwegian sector - there are differences in the approach of the regulators to these limits
Accommodation noise characteristics

- It is not always the noise level that is the issue

- The noise characteristics that can also produce sleep deprivation include:
  - Tones and harmonics
  - Low frequency noise
  - Intermittent noise
Structural vibration
Good practice engineering controls (1)

The principles of engineering control of noise and vibration are well established:

- Vibration isolation
- Enclosure
- Close-coupled covers, lagging etc
- Lower flow velocities and machine speeds
Good practice engineering controls (2)

- Sometimes the solutions are not complex

- Sometimes the solution is to ‘treat the worker’

- Plan ahead – model – modify - reconfigure

- There is often a good reason why some plant is much quieter than apparently similar plant
Hand-arm Vibration
Key differences in management of HAV

- HAV involves exposure to individuals, usually in direct control of a tool/handle.
- There is NO PPE for HAV.
- Damage (HAVS) can prevent individuals working.
Contractors

- It is more likely that those exposed to HAV are contractor staff.

- There remain some duties (Reg. 3(4)) on the site operator to ensure compliance, in terms of risk assessment and control, and also the planning of the work.

- There have been some recent industry initiatives in management of contractors.
### HAV - Simple assessment

<table>
<thead>
<tr>
<th>Tool type</th>
<th>Time to EAV</th>
<th>Time to ELV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotary</td>
<td>1 hour</td>
<td>4 hours</td>
</tr>
<tr>
<td>Percussive</td>
<td>15 mins</td>
<td>1 hour</td>
</tr>
</tbody>
</table>

- Employers need to justify usage beyond these times
- Older designs of tools may reach the action values much sooner
Exposure recording

- There is over emphasis on time recording and tool-tagging

- This can, in effect, result in the gathering of ‘guilty knowledge’, if the results are not read and acted upon

- It is also reliant on tool emissions data, and the accuracy of the recording system

- *The regulations do not require endless recording*…
Planning to *avoid* exposure

- There are many ‘traditional’ processes offshore involving significant vibration exposures to the operator:
  - Needle scaling, grinding, chipping, nibbling
  - Impact driving

- These should be ‘planned out’ or minimised
  - Perhaps by maintaining surface coatings.

- There are low vibration (or high efficiency) tools available, as well as alternative processes

- Tool maintenance is also essential to maintain emissions performance
‘No vibration’ options exist
Working to the Exposure Limit Value (ELV)

- Working up to the limit value is not only bad practice, it is against the law, where a reasonably practicable alternative method is available.

- Some companies have over-exposure flagging systems, where an individual’s exposure exceeds the ELV.

- Employers must have good reason to justify exposures above the exposure action value (EAV).
Health surveillance for HAVS

- All those exposed above the EAV must be provided with health surveillance equivalent to that described in L140, eg:
  - Feedback to the individual
  - Focused on preventing progression
  - Anonymised feedback to the company

- The offshore medical is not intended to provide this
Thank you