Summary

This guidance outlines an approach to inspection of dutyholder’s arrangements for managing health risks offshore associated with Noise and Hand-arm vibration. It also sets out criteria for satisfactory and unsatisfactory performance factors against which the duty holder performance will be rated for each of these areas. References are made to technical standards and guidance that inspectors will use to form opinion for legal compliance. The effectiveness of such systems is a key component of occupational health risk management and securing effective control of health risks to prevent or minimise the incidence of occupational diseases such as noise induced hearing loss, hand arm vibration syndrome.

Introduction

The aim of this Operational Guide (OG) is to provide information and guidance to offshore inspectors to support the delivery of consistent and effective health risk management. It does this by highlighting current key areas to be covered during inspections, providing a framework for inspectors to judge compliance, assign performance ratings, and decide what enforcement action to take should they find legislative breaches. In doing so, it complements HSE’s Enforcement Policy Statement (EPS) and Enforcement Management Model (EMM).

The operational guidance outlines HSE’s priorities for inspection of Noise and Hand-arm vibration health risks offshore. It is important to note that this guidance does not include detailed information on other offshore health risks such as Hazardous Substances, Asbestos, Ergonomics/manual handling, Ionising and Non-ionising Radiations, Thermal
Environment, Personal Protective Equipment, Food/Water hygiene, First-Aid and Welfare, which continue to form part of the remit of the Offshore Occupational Health Team (ED3.6)

**Action**

Inspection of this topic should include both inspection of the priority areas as well as an inspection of the overall policy, procedures and organisation for managing occupational health risks to establish a consistent and complete coverage of the topic. In inspecting individual topic areas it may be necessary to have input from the relevant specialist inspectors where there are technical issues beyond the competence of the IMT inspector.

Success criteria are listed under the inspection topics (see appendices); these cover the key issues that inspectors should consider when carrying-out inspections against each core intervention issue. In some instances, not all of the success criteria will apply so inspectors should make a judgement regarding which of these are relevant in each case. If the relevant success criteria cannot be met, inspectors should assess how serious the consequences of failure to comply could be. This will inform their decision making in terms of the performance ratings that they assign and the enforcement action they take (if any) based on the findings of the inspection. The Offshore Occupational Health Team (ED3.6) should be consulted where formal enforcement action is being considered.

When carrying out inspections covered by this guidance inspectors should:

- check the key issues against their success criteria in Appendices 1 & 2;
- use the generic performance descriptors in Appendix 3 to:
  - determine the appropriate performance rating; and
  - the initial enforcement expectation to use alongside the EMM.
- consider how and when the issues raised during an inspection are to be closed out and recorded using the COIN issues tab;
- Where other occupational health, safety and welfare concerns are encountered during an inspection, deal with such issues as a matter of routine and apply existing standards to determine what action to take in each case according to HSE’s Enforcement Policy and EMM.

**Background**

The aim of Occupational Health is to prevent or control exposure to health risks by recognising health hazards, evaluating the risk and establishing appropriate control measures. The occupational health hazards may include

- Physical agents (e.g. noise, vibration, radiation)
- Hazardous substances (e.g. chemicals, asbestos)
- Biological agents (e.g. Legionella, food hygiene)
- Ergonomics/manual handling

The essential requirements for managing occupational health are the same as those for any management system. Any sub-system for managing occupational health risks
should therefore have the key features of any good management system i.e. policy, organisation, planning and setting standards, performance measures and auditing and review. Confirmation should be obtained that a recognised code, standard or body of guidance has been taken into account in determining the required performance of the occupational health management system.

Relevant legislation, ACOP and guidance includes:

- **Offshore Installations (Safety Case) Regulations 2005** (specifically Regulation 12), including associated guidance (L30)
- The Offshore Installations and Pipeline Works (Design and Construction etc) Regulations 1996 (specifically Regulation 12 and Schedule 1).
- Offshore Installations Safety Representatives and Safety Committees Regulations 1989
- **Control of Noise at Work Regulations 2005**, including associated guidance (L108).
- **Control of Vibration at work Regulations 2005**, including associated guidance (L140)

Technical issues:

This section gives an overview of the topics covered by the Offshore Occupational Health Team. More specific guidance is provided for the priority topics in Appendices 1 & 2.

**Noise** - Each installation should implement a noise control policy. This should include risk assessment, a ‘Noise Action Plan’, demarcation of high noise areas and health surveillance (audiometry) based on risk. Over reliance on ‘blanket’ hearing protection policies is often an indication of poor understanding of the regulations as priority should be given to control of noisy plant and machinery by engineering means. Noise criteria should be incorporated into design specifications of new plant and equipment. Consideration also needs to be given to the effect of modifications on existing plant and structures. Formal arrangements should be put in place for co-operation between operator and contractor to ensure that, where appropriate, contractor employees are placed under suitable health surveillance.

**Hand-arm vibration (HAV)** - A control strategy should be in place to eliminate or reduce the risk of hand arm vibration syndrome as a result of working with hand held power tools and other vibrating equipment. This should include a Tool register, with ‘in-house’ or ‘suppliers’ data on vibration levels for each tool and an assessment of who
may be at risk. Control options to consider are alternative work methods, equipment selection, workstation design and management of work schedules. The tools should be maintained and health surveillance provided for workers who are likely to be exposed above the exposure action value.

**Organisation**

**Targeting**
Inspections should be planned within the timescales set out by ED divisional management.

Although the inspection may be carried out at any installation it is particularly important to carry this out where there are known risks that may affect health. It is essential to ensure that duty holders are robust in their assessment of health risks and that suitable controls measures are in place. All complaints relating to occupational health risks or welfare should be referred to the Offshore Occupational Health Team (ED3.6) for information and/or advice.

**Timing**
Inspectors should undertake Occupational Health inspections as part of the agreed ED offshore intervention plan, when intelligence indicates intervention is necessary or when investigation due to incident is required.

**Resources**
Resource for the undertaking of Occupational Health interventions will come from discipline specialist inspectors and Inspection Management Team inspectors as appropriate.

**Recording & reporting**
The duty holder performance ratings should be entered on the Inspection Rating Form (IRF) tab of the relevant installation Intervention Plan Service Order. Findings should be recorded in the normal post inspection report and letter.

**Further references**

- Environmental Health Guidelines, Oil and Gas UK.
- [Occupational Health web site, Offshore Division, HSE](#)

**Contacts**
ED Offshore: Offshore Occupational Hygiene Team (ED3.6 Specialist Inspectors)
Appendix 1: Noise

Fundamental requirements

The duty holder is required to ensure that risks arising from noise are eliminated, or, where they cannot be eliminated, at least controlled to ALARP. The risks arising do not only include the risk to hearing, but also the risk from impaired communication, inability to hear emergency alarms and announcements, and sleep deprivation. Similarly, DCR requires that Measures shall be taken to ensure that the exposure of a person on an installation to a risk to his health or safety from [noise and] vibration of plant shall be prevented or, where that is not reasonably practicable, adequately controlled.

CoNAWR requires that the noise must be controlled by organisational or technical measures. In practice, offshore, this will often require an action plan comprising planning for low noise during design and purchase, and engineering modifications to ensure that noise and vibration is controlled, preferably at source. It is important to note that exposure must be controlled by means other than hearing protection. The regulations specify clear duties where exposure is likely to exceed the upper exposure action value (UEAV) 85 dB.

In addition, the regulations require that, in certain circumstances, other provisions including training, provision of hearing protection, demarcation of hearing zones and provision of health surveillance (audiometry) are in place. In practice, this means that there needs to be good exchange of information between operator and contractor companies, in terms of quantifying the risk, as well as taking the steps necessary to protect those with existing damage.

Success criteria

The duty holder is required to have in place a risk assessment that includes a record of the measures they intend to take in order to comply with the other regulations (control, training, health surveillance etc). It is insufficient to have a noise ‘survey’ without identifying those persons exposed at or above the action values, and any required actions. Action plans should be appropriately resourced, managed and monitored. In particular, those tasked with delivering and managing noise action plans should have management support and commitment at a high level. This will also require communication and cooperation with the relevant technical authorities (TAs).

There are two general indicators of a poor approach to noise, both of which can lead to a lack of action in other areas. These are:

- Over reliance on blanket hearing protection policies, and;
- Repeated assessments with no indication of progress in the implementation of an action plan.
Offshore inspection should include, but not necessarily be limited to, the following matters:-

**Management and review**

- Has the duty holder appointed competent persons to manage and deliver all relevant aspects of their noise control and management system?
- On the installation, are those who are appointed to carry out the role of noise focal point (noise competent person, or similar) suitably informed, instructed and trained?
- Have the employees been engaged, via the Safety Committee/Safety Representatives, in the development and implementation of action plans to manage and control noise risks?

**Risk assessment (Reg. 5)**

- Is there a risk assessment representative of all relevant operating conditions and covering all those likely to be exposed (ie recent, including full load)?
- Are there arrangements for maintaining the relevance of the current assessment? (note: dosimetry is not a requirement, but can be a useful sampling and verification tool)
- Is there a coherent noise action plan, describing measures (other than those referring to hearing protection)?
- If there are identified noise problems in accommodation (see OTO 2001/068), does the action plan include measures to control transmitted noise?

**Noise control (Reg. 6)**

- Is the action plan being acted upon, and is it being monitored and reviewed?
- Have any previous consultants’ reports on engineering feasibility of noise control measures, for example, been acted upon?
- Is there evidence that TAs have been proactively involved in the action plan?
- Is there evidence of engineering control measures, such as anti-vibration mounting, sound absorbing lagging, panels or curtains, enclosures?
- Is there evidence of organisational measures such as re-routing pedestrian traffic, relocating machine monitoring readouts to low noise areas, limiting entry into high noise areas?

**Hearing protection and zones (Reg. 7)**

- Are zones appropriately demarcated, and is it clear what level of protection is required?
- Are double protection zones (usually >100dB, eg diesel engine rooms, turbine housing) observed?
- Do the hearing protection devices provide sufficient attenuation for the areas they are used in?
**Maintenance and use of equipment (Reg. 8)**

- Are any items provided to control the noise maintained, replaced and in good condition (this includes plant silencers and anti-vibration mountings)?

**Health surveillance (Reg. 9)**

- Are those persons exposed at or above the upper exposure action value provided with health surveillance (ie audiometry; this is the responsibility of a direct employer)?
- Are persons who are at increased risk (eg with existing damage) similarly covered?
- Are anonymised results provided to ensure that any necessary actions may be taken, including revision of risk assessment?

**Information, instruction and training (Reg. 10)**

- Are persons (including those tasked with delivering the policy) suitably informed, instructed and trained in the arrangements in place?
- Are contractor staff sufficiently informed about the risks arising from the noise in their work areas?

**Specialist assistance for inspectors**

For advice or inspection of any aspects of noise management, including any of the technical areas above, the ED Offshore Occupational Health Team is able to provide specialist assistance.

**Rating the DH performance**

Inspectors should use the generic performance descriptors in Appendix 3 to determine the appropriate performance rating for the management of noise risks. Appendix 3 also gives guidance on the initial enforcement expectation and should be used alongside the Enforcement Management Model (EMM). The local factors that apply in each case will ultimately determine whether there should be any enforcement action. Consideration also needs to be given as to how and when the issues raised during an inspection should be closed out. Inspectors must adhere to the relevant operational guidance (e.g. on use of the COIN issues tab).
Appendix 2: Hand-arm vibration

Fundamental requirements

The duty holder is required to ensure that risks arising from hand-arm vibration are eliminated, or, where they cannot be eliminated, controlled to ALARP. The risks arising mainly include the risk to the hand-arm system, including vascular and sensorineural damage. As with Noise, CoVAWR requires that the vibration must be controlled by organisational or technical measures. In practice, this will often require task design and advance project planning to ensure that residual risks are managed effectively. This means demonstrable effort to look for alternatives to the use of vibrating equipment, and to minimising any residual risk where action values are likely to be exceeded. In practice, as with noise, this may require an action plan.

It is important to note that there is no PPE for hand-arm vibration, so there is no interim fall-back measure, and so effective management of residual risks is a requirement. In particular, exposure is not effectively managed by exposure recording systems alone.

Because of the large amount of contracted work offshore involving exposure to vibration, the regulations require that, in certain circumstances, other provisions including training, provision of health surveillance for Hand-arm Vibration Syndrome (HAVS) are in place. In practice, this means that there needs to be good exchange of information between operator and contractor companies, in terms of quantifying the risk, as well as taking the steps necessary to protect those with existing damage.

The systems required to manage HAV need not be overly complex. Some operators have now devised simple procedures for ensuring contractor management is effective, particularly at managing residual risk.

This document does not cover Whole-body Vibration.

Success criteria

The duty holder is required to have in place a risk assessment that includes a record of the measures they intend to take in order to comply with the regulations (control, training, health surveillance etc). It is insufficient to have tool tagging and exposure recording alone, without identifying those persons likely to be exposed at or above the action values, and any required actions. Action plans should be appropriately resourced, managed and monitored. In particular, those tasked with delivering and managing HAV action plans should have management support and commitment at a high level. This will also require communication and cooperation with the relevant technical authorities (TAs) and contractor management.

There are general indicators of a poor approach to HAV management, which can lead to a lack of action in other areas. These include:
- Over reliance on tool tagging and paper or electronic, recording exposure systems, and;
- A lack of evidence of a feedback system, whereby task design may be revised and improved, and recorded exposures acted upon.
Offshore inspection should include, but not necessarily be limited to, the following matters:-

**Management and review**

- Has the duty holder appointed competent persons in order to manage and deliver all relevant aspects of their HAV control and management system?
- On the installation, are those who are appointed to carry out the role of HAV focal point (HAV competent person, or similar) suitably informed, instructed and trained?
- Have the employees been engaged, via the Safety Committee/Safety Representatives, in the development and implementation of action plans to manage and control vibration risks?
- Are contractor companies similarly equipped, and is there sufficient oversight of their systems by the installation operator?

**Risk assessment (Reg. 5)**

- Is there a risk assessment representative of the tasks being undertaken, and covering all those likely to be exposed?
- Are there arrangements for maintaining the relevance of the current assessment? (note: exposure recording is not a requirement, but can be a useful component of sampling and verification)
- Is there a coherent feedback system to improve the task and associated risk assessment, based on sample comparisons between predicted and actual exposure?
- Is consideration given to keeping the operators warm and dry, eg by clothing or gloves, and have the effects of environment or changing weather conditions been taken into account?
- Does the risk assessment take account of persons with existing HAVS (see Health surveillance Reg 7), for example, by restricting planned exposure?
- Are the risks from alternative processes adequately examined (for example blasting introduces very high noise risk (120+ dB), whereas automated processes are available)?

**Elimination or control of exposure (Reg.6)**

- Is the action plan being acted upon, and is it being monitored and reviewed?
- Have tool selection processes considered suitability as well as vibration performance (in some cases a high efficiency tool is the better option for reducing exposure)?
- Do tool box talks have sufficient check to ensure the work conditions and the tools specified are as described in the workplan?

**Health surveillance (Reg. 7)**

- Are those persons exposed at or above the upper exposure action value provided with annual health surveillance/screening, as described in L140 (this is the responsibility of a direct employer)?
Are persons who are at increased risk (eg with existing damage) similarly covered?
Are anonymised results provided to ensure that any necessary actions may be taken, including revision of risk assessment?

**Information, instruction and training (Reg. 8)**

- Are persons (including tool users, supervisors (and those tasked with delivering the policy) suitably informed, instructed and trained in the arrangements in place?
- Are contractor staff sufficiently informed about the risks arising from use of vibrating tools in their work?

**Specialist assistance for inspectors**

For advice or inspection of any aspects of HAV management, including any of the technical areas above, the ED Occupational Health team is able to provide specialist assistance.

**Rating the DH performance**

Inspectors should use the generic performance descriptors in Appendix 3 to determine the appropriate performance rating for the management of hand arm vibration risks. Appendix 3 also gives guidance on the initial enforcement expectation and should be used alongside the Enforcement Management Model (EMM). The local factors that apply in each case will ultimately determine whether there should be any enforcement action. Consideration also needs to be given as to how and when the issues raised during an inspection should be closed out. Inspectors must adhere to the relevant operational guidance (e.g. on use of the COIN issues tab).
Appendix 3: Performance monitoring

On undertaking an Occupational Hygiene inspection the performance criteria identified in the table below need to be considered. An overview or holistic approach should be taken in forming an opinion as to the effectiveness of the health risk management arrangements on the installation, also onshore arrangements need to be considered.

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<th>EXTREME</th>
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<td>30</td>
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<td>10</td>
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<td>Poor</td>
<td>Broadly Compliant</td>
<td>Fully Compliant</td>
<td>Exemplary</td>
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<thead>
<tr>
<th>EMM INITIAL ENFORCEMENT EXPECTATION</th>
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<th>Enforcement Notice / Letter</th>
<th>Enforcement Notice / Letter</th>
<th>Letter / Verbal warning</th>
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<td>Prosecution / Enforcement Notice</td>
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