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		H&S-GUID-009
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1. INTRODUCTION

The employer acknowledges that exposure of employees to industrial noise in excess of a time-weighted average over 8 hours (8-hour TWA) of more than 85 decibels (dBA), may lead to noise induced hearing loss (NIHL). The employer also acknowledges that it has a legal and moral duty to protect its employees against the ill-health effects of exposure to excessive noise, and therefore commits to the implementation and maintenance of the following programme.

2. NOISE MEASUREMENT

The *employer* commits to appoint an Authorised Inspection Authority (AIA) Occupational Hygienist to measure the noise exposure levels in all suspected noisy areas as per the specific sampling according the risk identified, and to report back to management and the employees on the levels of 8-hour TWA noise exposure in the different sections within the organisation. Mines will submit these reports to the DMRE on a quarterly basis.

3. NOISE ZONING

The employer commits to identify all areas where noise exposure in excess of 8-hour TWA of 85 dBA were identified as noise areas, and to zone these areas as such.

These areas should be clearly zoned and identifiable on a map of the plant, and should also be clearly identified through the use of pictograms identifying the area as a noise area at all entrances to the areas concerned.

4. NOISE TRAINING

The employer commits to train, and to document such training, all employees exposed to excessive noise in the workplace on the hazard of noise exposure in the workplace, every year after resumption of work after shutdown or every time there is a change in the process.

Training shall include basic information on the nature of noise, the hazards of exposure to excessive noise, the consequences of Noise Induced Hearing Loss (NIHL), protective measures available to protect employees against ill-health effects due to noise exposure, the proper use and maintenance of personal protective equipment (PPE), and the right to compensation of employees suffering from industrially-caused NIHL.

5. Equipment procurement considerations

When the need arises to procure new or replacement equipment at mining operations, the person responsible for procurement may wish to consider the IBMQI Industry-wide Buy and Maintain Quiet Initiative principles listed below, with a view to making an informed decision regarding the procurement of the appropriate equipment from an IBMQI perspective:

- Confirm that where the noise levels emitted by the equipment exceed 85dB(A), a noise certificate supplied by a certified service provider is available. The noise level can be confirmed by obtaining a third-party noise verification measurement
- When the Original Equipment Manufacturer (OEM) is engaged and the parties involved agree that the equipment does not meet the set noise emission limit, consider initiating a noise reduction process (IBMQI Industry-wide Buy and Maintain Quiet Initiative process)
- If an industry noise emission limit does not currently exist for any given piece of equipment, or equipment population, then the operation could consider

establishing its own internal limit, based on their equipment noise screening results (IBMQI process)

- Request the OEM to provide details of any alterations made to the equipment which may reduce the noise emissions from the equipment, accompanied by a third-party noise verification measurement from the OEM, or from a certified service provider
- Request the OEM to indicate other noise-related issues (i.e. vibration) that need to be considered
- Request OEM upgrades (if available) for replacement or alterations to be made to the equipment exceeding 85dB(A)
- Request the OEM to indicate the likelihood of equipment noise emission increases as a result of wear and tear
- Obtain the repair/maintenance procedure from the OEM
- Obtain an agreement on the repair/replacement strategy and frequency if an external service provider is used to service the equipment
- Apply a price modifier based on compliance or non-compliance and calculate the cost
- Select the final supplier having regard, *inter alia*, to the above parameters relating to noise emission
- Ensure that all the equipment documentation is obtained prior to equipment delivery, to enable the operation to verify compliance with the relevant aspects listed above

6. REPAIR / MAINTENANCE OF EXISTING EQUIPMENT

In most cases, an operating mine will already have numerous pieces of equipment in operation. These pieces of equipment might not all meet the

industry noise milestone or the company internal noise emission limits. It is important that mines initiate processes which will enable the achievement of these limits for the IBMQI to be effective. The section below describes the process that could be considered to reduce noise levels to below the required noise emission limits:

- When the OEM is engaged and the parties involved agree that the equipment does not meet the set noise emission limit, consider initiating a noise reduction process (IBMQI Industry-wide Buy and Maintain Quiet Initiative process)
- Determine whether the equipment noise emission exceeds the relevant industry noise milestone or internal operational noise emission limits and confirm whether the piece of equipment was identified as a 'critical noise equipment' (IBMQI Industry-wide Buy and Maintain Quiet Initiative process)
- Confirm that noise certification exists when the equipment exceeds 85dB(A) and when equipment is repaired/maintained by a third party. This could be confirmed by obtaining a third-party noise verification measurement from the service provider
- If an industry noise emission limit does not currently exist for any given piece of equipment, or equipment population, then a mine could consider establishing their own internal noise emission limit, based on their equipment noise screening results (IBMQI Industry-wide Buy and Maintain Quiet Initiative process)
- Obtain the details of any alterations and updates made to the equipment to reduce the noise emission
- Obtain details of any other noise related issues (i.e. vibration) that need to be considered

- OEM upgrades (if available) for replacement or alterations to be made to the equipment exceeding the relevant operational noise limit of 85dB(A) if no operational limit is defined
- Establish the likelihood of equipment noise emission increases, as a result of wear and tear
- Consult the OEM on the appropriate repair/maintenance procedure and intervals and agree on a repair/maintenance/replacement strategy
- Conduct noise emission verification measurements of the equipment after onsite modifications/repairs have been completed to confirm compliance (as per the Noise Measurement Guide)

7. RISK CONTROL

The employer commits to evaluating all sources of excessive industrial noise for attenuation of the risk to employees. Attenuation may include engineering and administrative controls to reduce the risk, and all possible solutions will be evaluated for cost-effectiveness.

8. Personal protective equipment

The employer will, at its costs, ensure that all employees and visitors entering noise-zoned areas are provided with effective hearing protection. The hearing protectors provided will be evaluated to effectively reduce the exposure to industrial noise in these areas to less than 8-hour TWA of 85 dBA.

9. Hearing testing

The employer will ensure that all employees entering noise zones as part of their duties undergo hearing testing (audiometry) in the following manner:

- During a pre-placement medical examination - to determine the baseline hearing status of the prospective employee.
- During periodic medical examinations at intervals not exceeding 1 year – to determine early health status deterioration indicating failure of the hearing protection interventions. Where emissions are over 105 dB, regulations require this be done every 6 months.
- At exit medical examination – to determine the hearing status of the employee on termination of employment with *the employer*.

10. INCIDENT INVESTIGATIONS.

The employer commits to do incident investigations on all cases where impairment or deterioration of more than 15dBA is noticed at any frequency, and where this deterioration was certified as being due to exposure to excessive noise by an occupational medical practitioner. The reports there-of to be submitted to the Department Mineral Resources and Department of Health where required.

Corrective actions on all non-conformances found to the hearing conservation programme will be implemented and documented.

11. EMPLOYEE DUTIES

The employer expects all employees to comply with all reasonable measures to protect their hearing in the workplace and may not allow any person to enter or remain in a noise zone without adequate protection. Employees must maintain and look after their hearing protection and replace it at required intervals. Failure to comply with these measures may lead to implementation of the disciplinary process.

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