

# SAFETY AND HEALTH INDUSTRIAL HYGIENE

## Hearing Conservation Program

<b>Effective Date:</b> 08/07/14	<b>Standard:</b> 10.3	<b>Document Number:</b> KUSHIH0003	<b>Rev:</b> 01
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### **Introduction:**

A Hearing Conservation Program (HCP) is required whenever employee exposure to noise exceeds a shift accumulated time weighted average of 85 dB (A) when measured during a full shift or less. The program is designed to meet the requirements of 29 CFR 1910.95 (OSHA) and 30 CFR part 62 (MSHA) as well as relevant Rio Tinto and Kennecott Utah Copper Standard requirements.

The specific requirements for a hearing conservation program include:

- Noise Exposure Monitoring
- Noise Controls
- Use of Hearing Protector Devices (HPD)
- Audiometric Testing
- Interpretation of Data
- Assessment of Effectiveness and Control of Further Noise Exposures
- Employee Training
- Recordkeeping and Reporting

### **Responsibilities:**

#### Company Responsibilities:

1. Establish and maintain a Hearing Conservation Program (HCP).
2. Identify areas/occupations where noise exposures exceed acceptable limits.
3. Determine and implement feasible engineering controls.
4. Provide approved hearing protection devices (HPDs) for use by employees to protect their hearing from the effects of excessive noise.
5. Provide hearing tests (audiometric tests) for employees who may be potentially exposed to noise in excess of 85 dB (A).

#### Employee Responsibilities:

1. Use hearing protection devices in accordance with instructions and training received.
2. Report defects or malfunctions of hearing protector devices to his/her supervisor.
3. Proper care, use, and storage of hearing protector devices.

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### Hearing Conservation Program:

#### I. Noise Exposure Monitoring:

Industrial hygiene is responsible for determining noise exposure levels for employees who are required to work in areas where noise exposure levels may equal or exceed 85 dB(A) during a regular shift based on time weighted averaged measurements.

1. When noise monitoring indicates that the 95-percentile value of an 8-hour Leq mean exceeds 85 dB(A), or impulse noise exceeds 140 dB(C), the area is mapped, signposted or otherwise clearly communicated to employees working in the area.
2. The sampling strategy shall include a sufficient number of measurements to both identify employees for inclusion in the Hearing Conservation Program and to enable the proper selection of hearing protection devices.
3. Noise dosimeters will be used to determine the exposure of an employee or represent Similar Employee Exposure Groups (SEG).
4. The noise dosimeter will have the capability to integrate into the exposure measurement all continuous, intermittent, and impulsive sound levels from 80 to 130 dB(A) and will be set to compare the dose measured with the 90 dB(A) 8-hour OSHA/MSHA Permissible Exposure Limit (PEL) and 85 dB(A) KUCC Occupational Exposure limit (OEL).
5. Sound level meters will only be used for determining the daily exposure of employees when noise levels and exposures are continuous or when dosimeters are not readily available. When a dosimeter is used to monitor exposure, it must be worn for the duration of the shift.
6. Dosimeters and sound level meters used for determining employee exposures must conform to the minimum requirements of ANSI S.1.25-1991 and ANSI S1.4-1983 respectively and shall be calibrated according to the manufacturer's instructions at the beginning and end of each shift they are used.
7. Monitoring shall be performed regularly or whenever a change in production process, equipment or engineering controls is instituted for employees working in areas included in the HCP. Employees whose exposures reach or exceed a TWA of 85 dB (A) will be notified in writing concerning the results of their noise exposure measurements.

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### II. **Noise Controls:**

Noise controls are the first line of defense against excessive noise exposure. The uses of controls aim to reduce the hazardous exposure to a point where the risk to hearing is eliminated or minimized. With the reduction of even a few decibels, the hazard to hearing is reduced, communication is improved, and noise-related annoyance is reduced. There are several ways to control and reduce worker exposure to noise in a workplace.

1. Engineering controls involve modifying or replacing equipment, or making physical changes at the noise source or along the transmission path to reduce the noise level at the worker's ear. This is the most preferred method of control. Examples of engineering include some of the following:
  - i. Choose low-noise tools and machinery (Buy Quiet Policy)
  - ii. Maintain and lubricate machinery and equipment
  - iii. Place a barrier between the noise source and employee (e.g., sound walls or curtains)
  - iv. Enclose or isolate the noise source.
2. Administrative controls are changes in the workplace that reduce or eliminate the worker exposure to noise. Examples include:
  - i. Operating noise machines during shifts when fewer people are exposed.
  - ii. Limiting the amount of time a person spends at a noise source
  - iii. Providing quiet areas where workers can gain relief from hazardous noise sources.
  - iv. Restricting worker presence to a suitable distance away from noisy equipment.

### III. **Use of Hearing Protection Devices (HPD):**

In environments where noise is known to be in excess of 85 dB (A), personal protective devices shall be worn. HPDs are considered the last option in the hierarchy of controls. If engineering and/or administrative controls are not feasible in the noise reduction, the employee will continue to wear hearing protection

1. Each employee will be provided the opportunity to select their HPDs from a suitable variety.

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2. The task of fitting and selecting proper hearing protectors is the responsibility of the Medical Department. Industrial Hygiene will provide the Medical Department with noise exposure data to aid in determining the proper type of protector to be used.
3. Educational programs for use of hearing protectors will be provided to employees and their supervisors via the KUC Intranet.
4. Signs shall be posted in areas where protective equipment is mandatory.
5. Supervisors are responsible to assure that employees wear hearing protectors where required. Failure to comply with use of personal hearing protector requirements will result in disciplinary action.

#### IV. **Audiometric Testing:**

The Medical Department will be responsible for establishing and maintaining or contracting, outside audiometric testing for all employees whose time weighted average noise exposure equals or exceeds 85 dB (A).

1. Baseline audiograms are a reference audiogram against which future audiograms are compared. The initial examination will be conducted within six months of an employee's first exposure to noise at or above the action level. Ideally, this exam will be incorporated into the new-hire physical examination. Employees should not be exposed to workplace noise for 14 hours before the baseline test or wear hearing protectors during this time period. This information will not be used to discriminate against the hiring of the hearing impaired but rather will be used to determine the safety and protection of an employee in the performance of job related functions.
2. Annual audiograms are collected to identify deterioration in an employee's hearing ability as early as possible. The annual audiogram will be compared to baseline audiograms to determine whether the audiogram is valid and whether the employee has lost hearing ability or experienced a Standard Threshold Shift (STS). An STS is a change in hearing threshold relative to the baseline audiogram of an average of 10 or more dBA at 2000, 3000, and 4000 hertz.

If an employee is determined to have sustained a Standard Threshold Shift (STS):

1. The employee will be sent a notification letter and required to undergo retesting within 30 calendar days. The Medical Clinic is responsible for

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issuing the letter of the audiometric testing within 10 working days of receiving the results. Copies of the notification letter will go to the employee's home, the superintendent, and the facility safety engineer. The supervisor is responsible to communicate this option with the employee.

2. If the repeat audiometric testing confirms the STS, the employee will receive another notification letter from the clinic. Copies of the confirmation letter will go to the superintendent, and the facility safety engineer. If the employee is not retested within 30 days, the STS is considered permanent.
3. If an employee is determined to have an STS, the supervisor is responsible for re-instructing the employee concerning the components of the Hearing Conservation Program and the Medical Clinic is responsible for instructing the employee on the proper use of hearing protectors. All instruction must be documented.
4. In addition, the Medical Clinic will determine the cause of hearing loss and the percent of hearing impairment that has occurred.
5. Each supervisor is responsible for auditing and documenting use of hearing protectors. If the supervisor discovers violations in usage appropriate action must be taken and documented.
6. If the employee is determined to have a hearing loss that could impact his safety, the employee's work environment must be evaluated.
7. If improved engineering controls can be instituted or more effective hearing protectors can be provided, or through job modification a significant reduction in noise exposure occurs, the employee can then be returned to the work force and repeat audiometric testing scheduled in six months.
8. If the next annual audiogram shows additional hearing loss, and no reduction in noise exposure is possible, then to prevent further hearing loss the Area Manager must review the employee's job situation and the effects of continued employment.
9. If required, information regarding possible compensation claims, the possibility of medical retirement, and any available vocational rehabilitation programs should be reviewed and discussed with the employee by a Human Resource representative.

### V. **Employee Training and Education**

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1. Periodic training of employees in the proper use of hearing protectors is a critical aspect of the program. All employees will complete the *KUC Hearing Conservation* module on an annual basis. Training will include the following components:
  - i. The effect of noise on hearing;
  - ii. Purpose of hearing protectors;
  - iii. The advantages and disadvantages of various types of hearing protectors and instructions on fitting, use and care;
  - iv. The purpose of audiometric testing and an explanation of the test procedures.
2. Copies of the OSHA and/or MSHA standard and this written program shall be made available to any employee upon request. The employee training and information requirements will be repeated on an annual basis. Training modules have been developed by Industrial Hygiene and are available on the KUC Intranet site.

### VI. **Recordkeeping and Reporting**

1. All Industrial Hygiene, Safety and Medical records involving the Hearing Conservation Program will be maintained and stored for archival purposes. Data concerning noise exposure level monitoring and audiometric testing will be made available to individual workers upon request. Audiograms will be kept for at least ten years beyond the last date of employment for each employee tested. Industrial hygiene exposure data will be retained for at least ten years beyond the last date of employment.
2. In the event an audiogram indicates a recordable shift in hearing, as defined by a regulatory agency or Rio Tinto Standards, the clinic will notify the safety department. Each case will then be evaluated to determine if the proper classification and reporting / recording requirements.
3. If a case meets the MSHA/OSHA recordable definition, an Employer 1st Report must be filed either accepting or alleging the case.
4. **The case will be alleged "not work related" if any of the following:**
  - i. The audiogram does not have the typical noise pattern.

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- ii. The employee is not exposed to harmful noise in his / her work area.
  - iii. The employee works in a regulated noise area, but wears hearing protection.
5. If the case meets the Rio Tinto recordable definition and is determined to be "not work related" the case would not be required to be reported to Rio Tinto.
6. **The case will be accepted as work related if:**
- i. The audiogram demonstrates a typical noise pattern, and
  - ii. It is determined that the employee is has been working in a high noise area that has not been previously identified, mapped, signposted or otherwise clearly communicated to employees working in the area and the employee did not use hearing protection.
  - iii. If the case meets the Rio Tinto recordable definition and is determined to be work related the case will be reported to Rio Tinto on the monthly Rio Tinto Group Safety Statistics.

### **REVISION HISTORY:**

MOC#	Description of Change	Prepared By	Date
25994	Creation of document.	Kelli Hamilton	4/23/14