1. **PURPOSE**

The Hearing Conservation Program provides requirements for protecting employees from hazardous noise levels and preventing employee hearing impairment.

**2.0 DEFINITIONS**

Approved Hearing Protection Devices - Hearing protective devices, including ear plugs and ear muffs, which have been approved for use by the Safety and Health Department.

Audiogram - A chart, graph, or table resulting from an audiometric test showing an employee's hearing threshold level as a function of frequency.

Baseline Audiogram - The initial audiogram against which subsequent audiograms are compared.

Decibel (dB) - Unit of measurement for sound.

dBA (A-weighted Network) - Refers to one of three weighting networks of a sound level meter. The "A" network discriminates against low frequencies to a greater extent than the other networks and simulates the response of the normal ear to frequencies below 500 Hz. The A-weighting is used because studies have shown that it gives a better estimation of threat to hearing by noise than do the other weightings.

Standard Threshold Shift - A change in an employee's hearing threshold averaging 10 dB or more at frequencies of 2000, 3000, and 4000 Hz, relative to the baseline audiogram for either ear (after any adjustments for hearing changes due the aging process).

**3.0 REQUIREMENTS**

3.1 Workplace Noise Exposure Evaluations

3.1.1 The sampling strategy shall be designed to identify employees for inclusion in the Hearing Conservation Program (HCP) and to enable the proper selection of hearing protectors.

3.1.2 When reasonable information indicates that an employee's noise dose may equal or exceed an eight-hour time-weighted average (TWA) of 85 dBA, the Human Resources Department shall ensure that the appropriate noise surveys are performed to measure employee exposure levels through representative sampling by job classification.

3.1.3 Noise exposure levels shall be measured using a personal dosimeter. A sound level meter can be used to determine sound levels at specific locations, but will not be used to determine exposure levels. Dosimeter and sound level meters will both use the A-weighted network at SLOW response.

3.1.4 Employee noise exposure shall be computed without regard to any attenuation provided by the use of personal protective equipment.

3.1.5 Monitoring shall be repeated whenever a change in production, process, equipment or controls increases noise exposures to the extent that:

3.1.5.1 Additional employees may be exposed at or above an eight-hour TWA of 85 dBA; or

3.1.5.2 The attenuation provided by hearing protective devices being used by employees may no longer attenuate the employee's noise exposure to a TWA of 90 dBA or 85 dBA for employees have experienced a standard threshold shift.

3.1.6 To ensure measurement accuracy, dosimeters and sound level meters used to measure employee noise exposure shall be calibrated before and after each use according to manufacturer's instructions.

3.1.7 Affected employees or their representatives shall be provided an opportunity to observe any noise surveys conducted.

3.1.8 Noise exposure monitoring results shall be posted in a location readily accessible to all affected employees.

3.1.9 Periodic monitoring shall be conducted at least once every two years to ensure that all exposed employees are included in the HCP.

3.1.10 For noise doses exceeding 50% (or a TWA exceeding 85 dBA) engineering controls shall be implemented. If engineering controls are not feasible, administrative controls shall implemented.

3.2 Audiometric Testing

3.2.1 Each plant shall establish and maintain a mandatory audiometric testing program for all employees whose exposures equal or exceed an 8-hour TWA of 80 dBA. This will include baseline and annual audiometric testing.

3.2.2 Prior to employment all potential employees will have a valid baseline audiogram against which subsequent audiograms can be compared shall be established for each employee.

3.2.3 **Baseline audiometric testing shall be preceded by at least 14 hours without exposure to workplace noise. The use of hearing protectors during work hours may substitute for the 14 hour requirement. Employees shall be notified of this requirement, by their supervisor, to avoid high levels of non-occupational noise exposure during the 14 hour period immediately preceding the audiometric examination**.

3.2.4 At least annually after obtaining the baseline audiogram, the Plant Management shall obtain a new audiogram for each employee exposed at or above a TWA of 80 dBA.

3.2.5 Each employee's annual audiogram shall be compared to that employee's baseline audiogram to determine if there is standard threshold shift. In making this determination, allowance must be made for the contribution of aging (presbycusis) to the change in hearing level.

3.2.6 **If the annual audiogram shows that an employee has suffered a standard threshold shift, the Plant Management shall obtain a retest within 30 days and use the results of the retest for the annual audiogram**.

3.2.7 An audiologist, otolaryngologist, or qualified physician shall review audiograms which show that an employee has suffered a standard threshold shift to determine whether there is a need for further evaluation. The person performing this evaluation shall be provided the following information:

3.2.7.1 The baseline audiogram and most recent audiogram of the employee to be evaluated.

3.2.7.2 Measurements of background sound pressure levels in the audiometric test room.

3.2.7.3 Records of audiometer calibrations.

3.2.8 If a comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift, the following steps shall be taken:

3.2.8.1 Employees shall be informed of the standard threshold shift in writing, **within 21 days** of the determination.

3.2.8.2 Employees not using hearing protectors shall be fitted with hearing protectors, trained in their use and care, and required to use them.

3.2.8.3 Employees already using hearing protectors shall be refitted and retrained in the use of hearing protectors and provided with hearing protective devices offering greater attenuation, if necessary.

3.2.8.4 **Employees shall be referred, at no cost to the employee, for a clinical audiological evaluation or an otological examination, as appropriate, to determine if a medical pathology of the ear is caused or aggravated by the wearing of hearing protectors**.

3.2.8.5 Employees shall be informed of the need for an otological examination if a medical pathology of the ear that is unrelated to the use of hearing protectors is suspected.

3.2.9 An annual audiogram may be substituted for the baseline audiogram when, in the judgment of the audiologist, otolaryngologist or qualified physician who is evaluating the audiogram the following situation exists.

3.2.9.1 The standard threshold shift revealed by the audiogram is persistent; or

3.2.9.2 The hearing threshold shown in the annual audiogram indicates significant improvement over the baseline audiogram.

3.2.10 Audiometric tests, equipment and personnel administering the test shall comply with the requirements **of OH&S Act.**

3.3 Hearing Protectors

3.3.1 Hearing protective devices shall be made available, at no cost, to all XXXXX employees irrespective of whether or not employee exposure levels exceed the 85 dBA threshold.

3.3.2 Employees shall be required to wear hearing protective devices whenever exposed to:

3.3.2.1 An eight hour time-weighted average of 85 dBA or greater.

3.3.2.2 Where exposure is at or above 100 dBA, on an eight hour daily average, double hearing protection must be worn (ear plugs and ear muffs).

3.3.2.3 For exposures which equal or exceed 110 dBA, for time periods which equal or exceed 15 minutes (regardless of the daily TWA), double hearing protection must be worn.

3.3.2.4 For impact/impulse exposures that exceed an instantaneous level of 140 dBA peak, double hearing protection must be worn.

3.3.3 Employees shall be given the opportunity to select their hearing protectors from a at least two of approved hearing protectors. It recommended that the foam rubber disposable earplugs are not used in the plant by employees due to the hygienic concerns. This disposable type are still most economic for use by visitors.

3.3.4 Employees who have difficulty wearing any of the available required hearing protectors shall be evaluated by the Company Physician. The Human Resources Department and the Company Physician will determine the appropriate type of hearing protection in such instances.

3.3.5 **Hearing protector attenuation shall be evaluated by the Human Resources Department based upon the specific noise environment in which the device will be used.**

3.3.6 Hearing protectors shall reduce employee exposure to a time-weighted average of 85 dBA or below. Double hearing protection may be necessary in some instances to reduce the noise level to 85 dBA or less.

3.3.7 The adequacy of hearing protection attenuation shall be re-evaluated by the Human Resources Department whenever employee exposures increase to the extent that the hearing protector provided may no longer provide adequate protection.

3.4 Employee Training

All employees who are exposed to noise at or above the time-weighted average of 85 dBA shall participate in a training program as specified in the XXXXX Employee Safety Training Program.

3.5 Employee Notification

3.5.1 Employee exposure records, audiometric test records, and audiometric test room records shall be provided upon request to employees presently employed, and to representatives designated by the employee.

3.5.2 Noise level monitoring results shall be posted in a location readily accessible to all affected employees. Employees exposed to TWA of 85 dBA or higher as determined by personal monitoring shall be informed of the their exposure level in writing.

3.5.3 Each employee shall be notified of the results of the audiometric test and whether or not there has been a hearing level decrease or improvement since the previous test.

3.5.4 If a comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift, the employee shall be informed of this fact in writing within 21 days of the determination.

3.6 Posting

3.6.1 High noise areas shall be identified with appropriate placards placed in those areas by the plant management.

**4.0 RECORDS**

4.1 A record of each employee audiogram shall be retained by the Plant for the period of employment plus 30 years and shall include:

4.1.1 Name of the employee.

4.1.2 Date of the audiogram.

4.1.3 Results of the audiogram.

4.1.4 \*The examiner's name.

4.1.5 \*Date of the last acoustic or exhaustive calibration of the audiometer.

\* These items do not need to be on the audiogram but must be kept on file and easily assessable if there is a question of the validity of the audiogram.

4.2 Accurate records of the measurements of the background sound pressure levels in mobile audiometric test vans shall be maintained by the plant.

4.3 Area and personnel noise exposure measurement records shall be maintained for at least 30 years by the plant.

4.5 Equipment calibration records shall be maintained for the life of the equipment.

**5.0 REFERENCES**

**6.0 ATTACHMENTS**

None