1.0 PURPOSE

To provide a safe and healthy work environment by eliminating employee hearing loss as a result of job-related noise exposure. OSHA’s standards identify areas where protection is needed and has mandated certain procedures/safety measures to minimize or eliminate hazards and accidents associated with occupational noise hazards. This Hearing Conservation program serves to meet the requirements of:

- Other OSHA regulations may also apply.

This program, while written in adherence with OSHA regulations, should not be considered a substitute for any provisions or standards of OSHA.

2.0 DEFINITIONS

**Audiogram:** A means of recording the results of a hearing test. It will include a table and a graph for each ear displaying how well you are able to hear sounds at various frequencies.

**Hearing Protection Device:** Any type of device which protects the ear from loud noises including ear muffs, foam and preformed ear plugs, and canal cap, abbreviated HPD.

**Time-Weighted Average Sound Level:** The sound level, which if constant over an 8-hour exposure, would result in the same noise dose as is measured, abbreviated TWA.

**A-Weighted Decibel:** The unit used to measure sound levels adjusted to mimic how the ear perceives the sound, abbreviated dBA.

**Decibel:** The unit used to measure sound levels, abbreviated dB. Sound measurements are taken while standing near the sound.

**Baseline:** A reference audiogram to which subsequent audiograms are compared.

**Sound Level Meter:** An instrument that measures sound pressure level.

**Noise Dosimeter:** A distinctive sound level meter intended specifically to measure the noise exposure of a person integrated over a period of time.
Standard Threshold Shift (STS): A change in hearing threshold, relative to the baseline audiogram for that employee, of an average of 10 decibels or more at 2,000, 3,000, and 4000 hertz in one or both ears.

Action Level: An 8-hour time-weighted average of 85 decibels measured on the A-scale, slow response, or equivalently, a dose of fifty percent.

Attenuation: A reduction in noise level. Hearing protectors are rated for their attenuation – a higher attenuation means a greater reduction in noise.

3.0 SCOPE

This program applies to all work operations or situations where employees are or might be exposed to job-related noise exposure. The following is required for employees exposed to a time-weighted average (TWA) of 85dBA, otherwise known as “action level”.

- An ongoing monitoring program.
- Identification and evaluation of noise hazards.
- Annual hearing tests for employees.
- Follow-up procedures for employees who have experienced a standard threshold shift of 10dB or more.
- Hearing protectors to reduce noise exposure levels below 90dBA TWA. For employees who have experience a standard threshold shift, noise must be attenuated below 85dBA TWA.
- Training.
- Access to information and training materials.
- Record keeping.

Common work activities to be evaluated include, but are not limited to:

a) Use of mowers;

b) Use of power tools;

c) Time spent in the building services server room;

Every department and employee will follow this Hearing Conservation Program. Copies of the program can be obtained from the Environmental Health and Safety Coordinator. Assistance is available from the Safety Coordinator to facilitate monitoring programs, recommend hearing protection options and coordinate personnel training on hearing conservation.
4.0 PROCEDURES

Assignment of Responsibilities:

ENVIRONMENTAL HEALTH AND SAFETY COORDINATOR:
Help establish and maintain the Hearing Conservation program and all records pertaining to the plan. This includes reviewing and updating the plan as necessary, facilitating training and conducting evaluations of program effectiveness. Records will be kept on file in Building Services.

SUPERVISORS:
Supervisors will work with the Environmental Health and Safety Coordinator to establish the Hearing Conservation Program. Supervisors will be capable of identifying existing and predictable hazards in the work area and/or working conditions which are hazardous or dangerous to employees. Supervisors will develop written procedures addressing these hazards and the safety procedures to be utilized. Supervisors are responsible for enforcing the Hearing Conservation Program. Supervisors will work with the Environmental Health and Safety Coordinator to conduct Job Hazard Assessments, determine specific duties requiring the use of hearing protectors, create specific worksite safety procedures and help determine the type of hearing protection devices to be provided.

EMPLOYEES:
Employees share the responsibility for employing proper work practices, following safety rules, maintaining a clean work area and to use and maintain all PPE and equipment in the correct manner. Employees required to use hearing protection devices must follow the specific rules and guidelines stated in this Hearing Conservation Program and other related material as directed by their supervisors. Employees must inform their supervisors of any change in medical condition that might affect their ability to use hearing protection devices effectively. Employees must report any problems with the hearing protection devices to their supervisors.

Monitoring Program
Employees who are suspected to face job-related noise exposure above the action level must be included in a “monitoring program. This program will include a sampling strategy that will determine which individuals must be included in the hearing conservation program. Sampling will be carried out using noise dosimeters to evaluate and determine employee’s time weighted average (TWA) noise exposure. Employees who’s TWA is at or above the action level shall be included in the hearing conservation program.

Determination of Sampling:
1. Individuals to be sampled will be determined based on recommendations/requests from employees as well as best judgment practices from the Environmental Health & Safety Coordinator. All employees that are suspected to have exposure beyond the action level are
required to go through the sampling process. A noise level meter may also be used to measure sound levels of specific activities/tasks. When using a noise level meter, employees who participate in activities which results in sound levels between 80 and 130dB should be included in the sampling process.

2. The Environmental Health and Safety Coordinator will conduct sampling using a noise dosimeter device. This device shall be calibrated to ensure measurement accuracy and used to determine the exact TWA of noise exposure for each individual. Individuals must wear the noise dosimeter on the upper should with the microphone as close to their ear as possible during testing. The dosimeter must remain in this position for at least 8 hours. Additional instructions for dosimeter users can be found in the following folder:

- Share (S:) > SHARED FOLDERS > Environmental > Safety > Hearing Protection > NOISE DOSIMETER USER INSTRUCTIONS.docx

3. Dosimeters will be returned to the Environmental Health and Safety Coordinator so that data may be analyzed and recorded. Any individuals whose results show a time waited average exposure level of 85 decibels or greater shall notified of their results and added to the Hearing Conservation Program. Affected employees will be provided with an opportunity to observe, upon request, any noise measurements being conducted. The results of the noise monitoring process will be recorded and maintained for a period of two years.

Monitoring shall be repeated whenever a change in production, process, equipment or controls increases noise exposures to the extent that:
- Additional employees may be exposed at or above the action level; or
- The attenuation provided by hearing protectors being used by employees may be rendered inadequate to meet decrease the exposed level of noise to below 85 decibels.

**Obtaining a Baseline:**
All employees who have been determined to meet or exceed the action level for noise exposure in the workplace must have a baseline audiometric test within the first 6 months of this determination.

Employees must be informed of date and time of their baseline audiometric test and must not be exposed to workplace noise for at least 14 hours preceding this test. If employees are unable to avoid workplace exposure during these 14 hours, hearing protection can be used as an alternative.

Information from the baseline audiogram should be kept on record for the entirety of the employee’s inclusion in the Hearing Conservation Program.

**Audiometric Testing:**
The Environmental Health and Safety Coordinator will establish and maintain an audiometric testing program by making audiometric testing available to all employees whose exposures equal or exceed the action level. The program will be provided at no cost to employees.
Annual Exams:
1. All employees in the Hearing Conservation Program must have audiometric tests completed at least annually after obtaining the baseline audiogram by a professional certified by the Council of Accreditation in Occupational Hearing Conservation.
2. Audiometric tests must follow all codes set forth in OSHA 1910.95(h) as summarized below:
   a. Tests must be pure tone, air conduction, hearing threshold examinations.
   b. Must include test frequencies 500, 1000, 2000, 3000, 4000 and 6000 Hz for each ear.
   c. Testing room must meet specific OSHA requirements.
   d. Audiometer must be checked daily for functional operation.
   e. Calibrations must be completed based on OSHA requirements.

Audiogram Evaluations:
1. Each employee’s annual audiogram shall be compared to that employee’s baseline audiogram by a qualified evaluator to determine if the audiogram is valid and if a standard threshold shift has occurred.
2. If the annual audiogram shows that an employee has suffered a standard threshold shift, a retest may be obtained within 30 days and used in place of the previous test. An allowance may also be made for the contribution of aging based on the calculation set forth in OSHA 1910.95 Appendix F. If the retest still shows that the employee has suffered a standard threshold shift, codes set forth in OSHA 1910.95(g)(7) will be followed. This code is summarized below:
   a. A certified professional shall review all problem audiograms to determine whether there is a need for further evaluation. The following information must be provided to the professional reviewer:
      i. A copy of the requirements for hearing conservation
      ii. The baseline audiogram and most recent audiogram of the employee to be evaluated
      iii. Measurements of background sound pressure levels in the audiometric test room where the most recent test was completed.
      iv. Records of audiometer calibrations for devices used on the employee in question.
3. If the certified professional confirms that a standard threshold shift has occurred and is not the cause of outside sources that are unrelated to work, then:
   a. The employee must be notified within 21 days of the determination.
   b. Employees not wearing hearing protection devices will be fitted with hearing protectors, trained in the use and care and required to use them.
   c. Employees already using hearing protection will be refitted and retrained and provided with hearing protection offering greater attenuation if necessary
   d. Employees will be referred for a clinical audiological evaluation as is appropriate.
e. Employees will be informed of the need for an ontological exam if a medical pathology of the ear that is unrelated to the use of hearing protectors is suspected.

**Hearing Protection:**

The Environmental Health and Safety Coordinator will provide hearing protectors to all employees exposed at or above the action level at no cost to the employee. Hearing protectors will be replaced as necessary. Supervisors must ensure that hearing protectors are worn by all individuals included in the Hearing Conservation Program.

- Employees will be given the opportunity to select their hearing protectors from a variety of suitable hearing protectors at no cost to them.
- Training will be provided in the use and care of all hearing protectors.
- Supervisors will ensure proper initial fitting and supervise the correct use of all hearing protectors.

**Hearing Protector Attenuation:**

- Employees must properly use and maintain all hearing protectors provided to them.
- The Supervisor will evaluate the hearing protector attenuation to ensure a given protector will reduce the noise exposure to the required level based on the following requirements:
  a) Protectors must attenuate the exposure to at least an 8-hour TWA of 90 decibels or below.
  b) Protectors must attenuate employee exposure to an 8-hour TWA of 85 decibels or below for employees having experienced a standard threshold shift.
  c) When Employee noise exposures increase to the extent that the hearing protectors provided may no longer provide adequate attenuation, more effective hearing protectors will be required.

### 5.0 TRAINING

Employees included in the Hearing Conservation Program are required to receive annual training on hearing conservation. Training must include the following topics:

- a) The effects of noise on hearing
- b) The purpose of hearing protection
  a. Advantages and disadvantages
  b. Attenuation of various types
  c. Instructions on selection, fitting, use and care
- c) The purpose of audiometric testing & explanation of test procedures

Training must be repeated annually for each employee included in the hearing conservation program. Information contained in the training program must be updated to be consistent with changes in protective equipment and work processes. The Environmental Health and Safety Coordinator will provide training in the use and care of all hearing protectors.
6.0 RECORDKEEPING

The following records are maintained by the Health and Safety Coordinator as part of the Hearing Conservation Program:

- Training records to include an outline of topics covered and a sign in sheet of those employees attending.
- A baseline audiometric exam for each employee in the Hearing Conservation Program to be retained for the duration of the affected employee’s employment plus thirty years, unless the baseline exam is replaced by an updated baseline exam from the recommendation of a licensed professional.
- Audiometric test records for each employee in the Hearing Conservation program to be retained for the duration of the affected employee’s employment plus thirty years. The test records must include:
  - Name and job classification of the employee.
  - Date of the audiogram.
  - The examiner’s name.
  - Date of the last acoustic or exhaustive calibration of the audiometer.
  - Employee’s most recent noise exposure assessment.
- All records required by this program must be provided upon request to employees, former employees, representatives designated by the individual employee and OSHA.
- Noise exposure measurement records must be retained for two years.