Hearing Conservation

SAFETY POLICY MANUAL - SECTION 1 - POLICY NO. SM 1.11

SAFETY DEPARTMENT | 6001 UNIVERSITY BOULEVARD MOON TOWNSHIP, PA 15108 412-397-4343

1. PURPOSE:

The purpose of this policy is to establish criteria for the Hearing Conservation Program at the University. The primary goal of the Hearing Conservation Program is to protect Robert Morris University (RMU) personnel from noise overexposure as defined in OSHA 29 CFR 1910.95.

2. SCOPE & APPLICABILITY:

This policy applies to all (RMU) employees who are exposed to noise levels that equal or exceed 85 dBA.

3. REFERENCES:

29 CFR 1910.95 Occupational Safety and Health Administration, “Occupational Noise Exposure”.

Federal Register, Volume 48, No. 46, March 8, 1983; Dept. of Labor; 29 CFR 1910; Occupational Noise Exposure: Conservation Amendment.

29 CFR 1910.20 Occupational Safety and Health Administration, “Access to Employee Exposure and Medical Records”.

4. DEFINITIONS:

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 chart, graph, or table resulting from an audiometric test showing an individual’s hearing threshold levels as a function of frequency.

Audiogram – A chart, graph, or table resulting from an audiometric test showing an individual’s hearing threshold levels as a function of frequency.

Baseline Audiogram – the initial audiogram against which future audiograms are compared.

dBA – The measurement of sound level as measured on the A scale of a sound level meter.

Dosimeter – An instrument for the measurement of sound, commonly used for personal monitoring. It integrates a function of sound pressure of period in such a manner that it directly indicates a noise dose.

HCP – Hearing Conservation Program.

Permanent Threshold Shift (PTS) – Permanent hearing loss because of noise exposure.

Sound Level Meter – An instrument for the measurement of sound, commonly used for area noise monitoring.

- Type 1 Sound Level Meter – Precision type instrument intended for accurate measurements in the field and laboratory.
- Type 2 Sound Level Meter – An instrument with more lenient design tolerances than type 1, intended for general field use, particularly in applications where high-frequency (over 10kHz) sound components do not dominate.

Standard Threshold Shift (STS) – A change in hearing threshold relative to the baseline audio of an average of 10 dB or more at 2000, 3000, 4000 Hertz in either ear.

Time-weighted Average (TWA) Sound Level – That sound level, which if constant over an 8-hour exposure, would result in the same noise does as is measured.

5. PROCEDURE:

INCLUSION IN HEARING CONSERVATION PROGRAM:

Any employee whose noise exposures equal or exceed an 8-hour TWA sound level of 85 decibels measured on the A scale (slow response) or, equivalently a dose of 50 percent will be included in the HCP.

For purposes of the HCP, employee noise exposure shall be computed in accordance with 29 CFR 1910.95 Appendix A and Table G-16, and without regard to any attenuation provided by the use of personal protective equipment.

NOISE MONITORING:

Site characterization / industrial hygiene survey will be conducted annually (as part of the Hazard Surveillance Inspection) for potential noise exposure concerns.

Area noise surveys and personal monitoring will be conducted for areas identified in the site characterization.

In addition, area noise surveys and personal monitoring shall be conducted:

- Upon request of a Department Manager/Supervisor.
- Upon notification that the noise levels in an area may have changed due to the addition or deletions of equipment/machinery/process operation; or
- At least annually in area designated as requiring routine use of hearing protection.

Noise surveys shall be conducted using a type 1 or type 2 sound level meter for continuous noise and a type 1 sound level meter for impulse noise and shall be calibrated to ensure measurement accuracy.

ENGINEERING CONTROLS:

Engineering controls will be used as the initial control method to reduce sound levels to the levels of Table G-16 Appendix A of 29 CFR 1910.95. These engineering controls shall include, but not be limited to:

- Replacement with quieter equipment/processes/materials.
- Sound source modification.
- Sound path modification.

ADMINISTRATIVE CONTROLS:

Administrative controls will be used secondarily to engineering controls as a control method to reduce sound levels. These administrative controls shall include but not be limited to:

- Limiting employee exposure time by schedule adjustment.

PERSONAL PROTECTIVE EQUIPMENT:

When feasible engineering and administrative controls fail to reduce sound levels to the levels, personnel are required to wear personal hearing protection. This shall be for the entire work shift when working in areas where the eight-hour time-weighted average sound level (or its equivalent) equals or exceeds 85 dBA.

Several types of hearing protection will be made available to the employee and each type of hearing protector will be capable of attenuating to or below an eight-hour time-weighted average sound level (or its equivalent) of 85 dBA. Adequate hearing protection attenuation will be determined in accordance with 29 CFR 1910.95 Appendix B.

The initial set and all subsequent set of hearing protectors must be fitted/sized under the direction of RMU Safety Services.

If there is any change in the work process, the current hearing protection being used will be evaluated. If it is inadequate, new protectors will be selected. Adequate hearing protection attenuation shall be determined in accordance with 29 CFR 1910.95, Appendix B.

AUDIOMETRIC TESTING:

All employees working in areas where the eight-hour time-weighted average level (or its equivalent) equals or exceeds 85 dBA will be included in the audiometric testing program.

The audiometric testing will be provided at no cost to the employee.

Audiometric testing will be conducted by a licensed or certified audiologist, otolaryngologist, or physicians or by a nurse or technician who is certified by the Council of Accreditation in Occupational Hearing Conservation.

A valid baseline audiogram will be established within six (6) months after an employee is assigned to an area where the eight-hour time-weighted average sound level equals or exceeds 85 dBA.

Testing to establish a baseline audiogram will be preceded by at least 14 hours without exposure to workplace noise. Hearing protectors may be used as a substitute for the requirement that baseline audiograms be preceded by 14 hours without workplace noise. Employees will be notified of the need to avoid high levels immediately preceding the audiometric examination.

The baseline audiogram may be revised when, in the judgment of the audiologist, otolaryngologist or physicians who is evaluating the audiogram:

- The standard threshold shift revealed by the audiogram is persistent; or
- The hearing threshold shown in the annual audiogram indicates significant improvement over the baseline audiogram.

If there is a revision of the baseline audiogram, preceding audiograms must be retained and it must be documented as to why the baseline was revised.

Annual audiograms will be completed on employees who work in areas where the eight-hour time-weighted average sound level equals or exceeds 85 dBA.

The annual audiogram will include a hearing/noise exposure history on each employee.

The annual audiogram may be conducted at any time during the work shift but must be preceded by at least 14 hours without exposure to workplace noise. Hearing protectors may be used to meet this requirement. Employees will be notified of the need to avoid high levels of non-occupational noise exposure prior to audiometric testing.

Each employee's annual audiogram will be compared to that employee's baseline audiogram to determine if the audiogram is valid and if a standard threshold shift has occurred.

If the annual audiogram shows a standard threshold shift, a retest may be done within 30 days and these results may be considered the annual audiogram.

An audiologist, otolaryngologist, or physician will review all problem audiograms and determine whether there is a need for further evaluation.

RMU will provide to the person performing any further evaluation the following information:

- A copy of the Hearing Conservation Amendment.
- The baseline audiogram and the most recent audiogram of the employee to be evaluated.
- Measurement of background sound pressure levels in the audiometric test room.

The following will be done unless a physician determines that the standard threshold shift is not work related or aggravated by occupational noise exposure:

- The employee shall be referred for a clinical audiological evaluation or an ontological evaluation, as appropriate. If additional testing is necessary; or if the employer suspects that a medical pathology of the ear is caused or aggravated by the wearing of hearing protectors.
- The employee is 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.

An exit audiogram will be performed on all employees who during their employment have been included in the hearing conservation program.

The determination of a standard threshold shift may allow for the contribution of aging (presbycusis) to the change in hearing level by correcting the annual audiogram according to the procedure described in 29 CFR 1910.95 Appendix F.

If a comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift has occurred, the employee will be informed in writing within 21 days of the determination.

If a standard threshold shift is found, there will be a review by Human Resources and Safety Services and documentation of the employee's exposure to noise.

If a standard threshold shift is found:

- Employees' not wearing hearing protectors will be fitted with them, trained in their use and care, and required to use them.
- Employees wearing hearing protectors will be refitted, retrained, and reinstructed in their use, and provided with hearing protectors offering greater attenuation if necessary.

EMPLOYEE NOTIFICATION:

All employees who are included in the Hearing Conservation Program will be notified of the following:

- The results of the monitoring conducted in the Annual Sound Survey or where any follow-up monitoring is done. All work areas will utilize some form of posting designation of affective areas.
- The designation which is being utilized in a work area in which hearing protection is required.
- His/Her most recent noise exposure assessment.
- The mandatory requirement to wear personal hearing protection for the entirety of the work shift, if working in an area where the eight-hour time-weighted average sound level (or its equivalent) is greater than or equal to 85 dBA.

The following information concerning audiograms:

- The date, time and place that the annual audiogram will be given. This may be included in the scheduling of the employee's annual physical.
- If a comparison of the baseline and annual audiograms does not indicate a standard threshold shift, the employee will be informed of the new audiometric interpretation.
- If a comparison of the baseline and annual audiogram indicates a standard threshold shift, the employee will be notified in writing, within 21 days of the determination.

Prior to the baseline or retest audiometric examination, employees will be informed of the need to avoid non-occupational noise.

6. RESPONSIBILITIES:

DEPARTMENT MANAGERS:

Department managers must visit area(s) under their supervision periodically to inspect for potential noise hazards and that employees are properly using hearing protection assigned to them.

Notify and coordinate with RMU Safety Services regarding potential noise exposure concerns.

Ensure compliance with the procedures outlined in this policy as applicable.

Notify Safety Services of any change in noise levels/exposure in your area of responsibility.

HUMAN RESOURCES:

Evaluate and make recommendations on all problem audiograms (assisted by Safety Services).

Make follow-up recommendations for any employee who must be sent for further audio logical and/or medical evaluation (assisted by Safety Services).

SAFETY SERVICES:

Conduct noise-monitoring surveys and prepare associated reports.

Assist and/or conduct training for affected departments.

Provide Human Resources with a list of departments and/or employees that are to be included in the HCP.

Assist departments with coordination of employee medical exams / audiometric testing.

The Safety Services Department shall verify the calibration of sound level meters and dosimeter at least annually.

7. TRAINING & EDUCATION:

This training is directed toward the primary goal of the program: the prevention of noise-induced permanent threshold shift caused by workplace noise exposure.

RMU has instituted a training program for all employees who are exposed to noise at or above the action level of an eight-hour time-weighted average of 85 dB and shall ensure employee participation in the program.

The training program will be repeated annually for each employee included in the hearing conservation program. Information provided in the training program will be updated to be consistent with changes in protective equipment and work processes.

Each employee is informed of the following:

- The effects of noise on hearing.
- The purpose of hearing protectors, the advantages, disadvantages and attenuation of various types, and instructions on selection, fitting, use, and care.
- The purpose of audiometric testing and an explanation of the test procedures.
- A copy of 29 CFR 1910.95 shall be posted and made available to affected employees or their representatives.
- Affected employees will be provided with any informational materials pertaining to 29 CFR 1910.95 that are supplied to the employer by the Assistant Secretary of Labor.
- Upon request, all materials related to the employer's training and education program pertaining to 29 CFR 1910.95 to the Assistant Secretary of Labor and the Director of OSHA.

8. DOCUMENTATION & RECORD KEEPING:

All records retained under this hearing conservation program will be provided upon request to employees, former employees, representatives designated by the individual employee,

and the Assistant Secretary of Labor. The provisions of 29 CFR 1910.20 (a)-(e) and (g)-(l) also apply to access these records.

If the employer ceases to do business, the employer shall transfer to the successor employer all records required to be maintained. The successor employer shall retain them for the remainder of the required period.

Safety Services will maintain accurate records of all employee exposure measurements.

Human Resources (contracted physician) will maintain accurate measurement records of the background sound pressure levels in the soundproof booth or test room used for audiometric testing.

Human Resources will maintain all employee audiometric test records and these records shall 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.

The Department Manager and Safety Services will maintain records of training attendance for those individuals that are exposed to noise levels that equal or exceed 85 dBA.

Copies of all exposure monitoring information including calibration records, field notes, monitoring results, and recommendations for exposure reduction shall be maintained by the Safety Services for the duration of the affected employee's employment plus 30 years.

Copies of all audiometric testing, physician recommendations, employee notifications, audiometer and sound level booth calibrations will be maintained by Human Resources for a minimum of the duration of the affected employee's employment.

9. REVIEW FREQUENCY/INTERPRETATION & CHANGES:

This policy will be reviewed on at least every 3 years by Safety Management Committee.

Implementation Date: April, 2009 **Last Reviewed/Revised:** May, 2022