



HEARING CONSERVATION PROGRAM

UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

Prepared By:

Safety and Environmental Health Office

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Introduction

The University Hearing Conservation Program applies to all University employees. It sets forth procedures, work practices and equipment intended to protect employees from the hazards presented by exposure to occupational noise. Definitions of key terms used in the Hearing Conservation Program can be found in the definitions section (Appendix A). The basis for the Hearing Conservation Program is the Occupational Safety and Health Administration (OSHA) standard 1910.95 Occupational Noise Exposure.

The University's primary objective is to maintain noise levels in the work areas of its employees below 85 dBA using accepted engineering control methods. However, when this is not feasible, or while such controls are being instituted or evaluated, hearing protection shall be provided to employees who may be required to work in situations where noise exposures are potentially unhealthy. The maximum Permissible noise Exposure Level (PEL) for an eight hour time weighted average (TWA) is 90 dBA. Exposure to noise levels over 90 dBA are permissible for shorter periods of time as defined by Table 1.

The University Hearing Conservation Program includes:

- The assignment of responsibilities under the program;
- Standard operating procedures for noise monitoring, program participation, hearing protection, audiometric testing, training, and record keeping;
- Appendices.

The University Hearing Conservation Program shall be reviewed at least annually by the University Industrial Hygienist and revised as needed.

Hearing Conservation Responsibilities

The following individuals bear responsibility for the implementation of this plan as described below:

1. The Safety and Health Director is responsible for:
 - Planning and recommending environmental health and safety programs which comply with all federal, state and local laws and regulations;
 - Overseeing the activities of the University Industrial Hygienist.

2. The University Industrial Hygienist, under the direction of the Safety and Health Director, has responsibility to:
 - Develop the Hearing Conservation Program;
 - Work with administrators, supervisors and workers to implement appropriate hearing conservation policies and practices;
 - Monitor procurement, and use of hearing protective devices;
 - Conduct spot inspections to assure compliance with the Hearing Conservation Program;
 - Conduct noise exposure surveys and maintain resultant records;
 - Know the current legal requirements concerning occupational noise exposure; and
 - Annually review the University Hearing Conservation Program and seek ways to improve it.

3. The Department Chair or Manager has overall responsibility for hearing conservation within that department.

4. The Supervisor has overall responsibility for the Hearing Conservation Program compliance of his/her workers including responsibility to:
 - Be familiar with the pertinent regulations and the University Hearing Conservation Program;
 - Ensure that workers know and follow the Hearing Conservation Program rules, that protective equipment is available and in working order, and that appropriate training has been provided;
 - Determine with the assistance of Safety & Environmental Health (S&EH) the required levels of protective equipment, ensure it's availability to personnel and enforce it's use; and
 - Request assistance from S&EH as needed;

5. Workers (including student employees), are responsible for:
 - Understanding and complying with University policies and programs which pertain to his or her work, including the University Hearing Conservation Program;
 - Using appropriate personal protective equipment as required by the operation being conducted;
 - Refraining from the operation of any equipment without proper instruction; and
 - Following both oral and written instructions from his or her supervisor.

Standard Operating Procedures

Noise Monitoring

S&EH shall implement a noise monitoring program. The sampling strategy shall be designed to identify employees for inclusion in the Hearing Conservation Program. Specifically, S&EH shall identify equipment use, or areas within the University's facilities which can be reasonably expected to subject operators or occupants to sound levels above 85 dBA (8 hour TWA). Monitoring shall be repeated whenever changes in equipment or processes may subject operators or occupants to sound levels above 85 dBA (8 hour TWA). Employees shall be notified when monitoring results indicate exposure above 85 dBA (8 hour TWA). S&EH shall provide the opportunity for affected employees to observe noise measurements.

Program Participation

When an employee of the University is exposed to sound levels at or above the action level of 85 dBA (8 hour TWA) they shall be required to participate in the University Hearing Conservation Program.

Hearing Protection

When the sound levels and duration in table 1 are exceeded, employee exposure will be reduced by:

1. Engineering controls: the installation of noise mufflers, use of quieter equipment, or the enclosure of noisy equipment; or
2. Administrative controls: the rotation of workers to reduce exposure time; or
3. Personal Protective Equipment (PPE): Hearing protection devices, ear muffs or plugs. The use of PPE to lower exposure below the PEL will only be implemented when engineering controls are not feasible. PPE will be provided to any employee who requests it, regardless of exposure level.

Hearing Protective Devices shall be made available to all program participants. Supervisors of affected employees shall maintain a selection of Hearing Protective Devices, accessible to all program participants. At the discretion of the supervisor, ear muffs may also be provided to program participants. Ear muffs are suggested where the use of hearing protection will be intermittent over the course of the work shift. Ear muffs will not be shared between workers and will be individually assigned. Supervisors may contact S&EH for assistance in the selection and/or procurement of hearing protective devices.

Audiometric Testing

The University shall maintain an audiometric testing program, coordinated by S&EH. All employees who are exposed to sound levels at or above the action level of 85 dBA (8 hour TWA) shall receive audiometric testing. This program shall be provided at no cost to employees. The University will select an outside vendor to provide this service. Baseline audiometric testing shall be performed upon identification of an employee as a program participant and within 6 months of initial exposure to the action level of 85 dBA (8 hour TWA). Audiometric testing shall be repeated annually thereafter. Employees shall be informed in writing of standard threshold shifts within 21 days of determination, and shall be refitted and retrained in use of hearing protection.

Training and Information

S&EH shall conduct hearing conservation training for all affected employees. This training will be repeated annually. The training will include:

- The effects of loud noise on hearing;
- The purpose of hearing protectors; the advantages, disadvantages and attenuation of various types;
- Instructions on the selection, fitting, care and use of hearing protectors; and
- The purpose of audiometric testing, and an explanation of the test procedures.

Written information will be provided to program participants regarding this program and the Occupational Noise Exposure standard 29 CFR 1910.95. A copy of the standard shall be posted in the workplace and additional copies of the standard are available from S&EH.

Recordkeeping

S&EH shall maintain records of all noise monitoring, including both personal and area sampling. A file will be maintained on each program participant, which will include any personal sampling results performed on that individual and results of audiometric testing. S&EH shall also maintain records of hearing conservation training for affected employees.

Table 1

PERMISSABLE NOISE EXPOSURES

<i>Duration per day, hours</i>	<i>Sound level dBA slow response</i>
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105
0.5	110
0.25	115

APPENDIX A

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.

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

Audiologist - A professional, specializing in the study and rehabilitation of hearing, who is certified by the American Speech-Language-Hearing Association or licensed by a state board of examiners.

Baseline audiogram - The audiogram against which future audiograms are compared.

Criterion sound level - A sound level of 90 decibels.

Decibel (dB) - Unit of measurement of sound level.

Hertz (Hz) - Unit of measurement of frequency, numerically equal to cycles per second.

Noise dose - The ratio, expressed as a percentage, of (1) the time integral, over a stated time or event, of the 0.6 power of the measured SLOW exponential time-averaged, squared A-weighted sound pressure and (2) the product of the criterion duration (8 hours) and the 0.6 power of the squared sound pressure corresponding to the criterion sound level (90 dB).

Noise dosimeter - An instrument that integrates a function of sound pressure over a period of time in such a manner that it directly indicates a noise dose.

Otolaryngologist - A physician specializing in diagnosis and treatment of disorders of the ear, nose and throat.

Representative exposure - Measurements of an employee's noise dose or 8-hour time-weighted average sound level that the employers deem to be representative of the exposures of other employees in the workplace.

Sound level - Ten times the common logarithm of the ratio of the square of the measured A-weighted sound pressure to the square of the standard reference pressure of 20 micropascals. Unit: decibels (dB). For use with this regulation, SLOW time response, in accordance with ANSI S1.4-1971 (R1976), is required.

Sound level meter - An instrument for the measurement of sound level.

Standard threshold shift - A change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more at 2000, 3000, and 4000 Hz in either ear.

Time-weighted average sound level - That sound level, which if constant over an 8-hour exposure, would result in the same noise dose as is measured.