



## UNIVERSITY POLICY

**SUBJECT:** HEALTH AND SAFETY      **TITLE:** OCCUPATIONAL NOISE EXPOSURE

**CODING:** 00-01-45-10:00      **ADOPTED:** 07/12/04      **AMENDED:** 03/22/07

**LAST REVIEWED:** 03/22/07

### I. PURPOSE

This policy sets forth the standards for proper practices and procedures to protect personnel from potential noise hazards present in the workplace. This policy is designed to comply with the Public Employees Occupational Safety and Health Act's (PEOSHA) "Occupational Noise Exposure Standard" (29 CFR 1910.95), as implemented by the New Jersey Department of Labor and the Department of Health and Senior Services. The additional purpose is to ensure that new facilities and renovated areas meet sound criteria for Heating Ventilation and Air Conditioning (HVAC) System Noise in Unoccupied Spaces specified in the latest version of the American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE) HVAC Applications Handbook.

### II. ACCOUNTABILITY

Under the direction of the President, the Executive Vice President for Academic & Clinical Affairs, the Senior Vice President for Administration, Deans, President/CEOs of the Healthcare Units, and Vice Presidents shall ensure compliance and implement this policy.

### III. APPLICABILITY

- A. The Occupational Noise Exposure policy and Hearing Conservation Program apply to departments and areas where employees are subjected to sound exceeding the levels listed in EXHIBIT A.
- B. The Hearing Conservation Program (EXHIBIT B) applies to departments and areas where employees are subject to sound exceeding an 8 hour time weighted average (TWA) of 85 dB(A).
- C. The requirement for sound levels to meet ASHRAE criteria applies to renovations and new facilities.

### IV. DEFINITIONS

- A. Feasible Acoustical Engineering Control

An acoustical engineering control is feasible only if it is effective, efficient, and economical. By effective, it must reduce the noise source being controlled by 3 decibels (dBA) or more. By efficient, it must not introduce obvious hazards or produce intolerable production, maintenance, and sanitation problems. Noise control should minimize sources of noise; prevent the propagation, amplification, and reverberation of noise; and protect workers from excessive noise. Engineering controls can include antivibration machine mountings, acoustical enclosures, and component replacement.

B. Feasible Administrative Controls

Administrative practices can include shift and work schedule rotation, and operating noisy equipment or systems at times of least or no occupancy.

V. REFERENCES

- A. The Occupational Safety and Health Administration's (OSHA) "Occupational Noise Exposure Standard" (29 CFR 1910.95) as adopted and implemented by the New Jersey Department of Labor and the Public Employees Occupational Safety and Health Administration (PEOSHA) of the Department of Health and Senior Services
- B. Occupational Noise Exposure Program
- C. Medical Surveillance for Occupational Noise-Induced Hearing Loss, policy #832-600-045
- D. American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) HVAC Applications Handbook, 2003

VI. POLICY

In accordance with PEOSHA's Occupational Noise Exposure Standard, significant noise levels must be controlled first by feasible engineering controls. If engineering controls are not feasible and or do not reduce the noise levels below the legal limit, then feasible administrative controls are to be implemented. If administrative controls are not feasible and or do not reduce the noise exposure to below the legal limit, then hearing protection is to be provided and its use required.

A. Requirements:

It is the policy of the University to comply with the PEOSHA's Occupational Noise Exposure standard 29 CFR 1910.95 which requires that feasible administrative and engineering controls are utilized when employees are subjected to sound levels exceeding those listed in EXHIBIT A. If such controls fail to reduce the sound levels, the University shall provide and require use of personal protective equipment to reduce the sound levels to levels within those listed in EXHIBIT A.

The University shall administer a hearing conservation program as described in EXHIBIT B whenever employee noise exposures equal or exceed an 8 hour TWA sound level of 85dBA.

Appropriate sound quality as defined in the latest version of the ASHRAE HVAC Applications Handbook shall be included in the specifications for all new facilities and renovated areas.

B. Responsibilities:

1. **Schools/Units/Departments' Administration:**

- a. Ensure that Schools/Units/Departments comply with all components of the Occupational Noise Exposure Program.
- b. Contract a health care provider to provide services listed in Section B.5, for those Schools and Units that do not have a Campus Occupational Medicine Service provider.
- c. Appoint and work with a Coordinator to tailor and implement the Model Occupational Noise Exposure Program for the department (see EXHIBIT C) to include the following:

- i. forward noise concerns to EOHSS whenever a change in production, process, equipment or controls occur which would affect the noise levels in their departments,
- ii. develop a feasible plan of action to reduce the noise levels to below 90dBA permissible exposure level,
- iii. post signs where hearing protection is required,
- iv. purchase new equipment and tools with the lowest vibration and sound emitting levels,
- v. implement a hearing conservation program, EXHIBIT B, which includes all employees who are exposed at or above an 8 hour TWA of 85 dBA to include:
  - referring employees in their departments that have been exposed to noise for annual audiometric testing.
  - where reducing noise levels listed in the attached EXHIBIT A is unattainable, providing a variety of suitable personal hearing protection and requiring its use. The hearing protection must attenuate noise exposure to 90 dBA, and for employees who have experienced a standard threshold shift to 85 dBA.
  - developing and implementing a policy requiring mandatory use of hearing protectors in areas where noise exposure is at or above an 8 hour time weighted average of 85 dBA.
  - providing employees exposed to noise or their representatives with the opportunity to observe the noise monitoring.
  - ensuring affected employees attend annual training on the Occupational Noise Exposure Program.
  - maintaining noise exposure measurement records for two (2) years in accordance with 29 CFR 1910.95 and the PEOSHA record keeping standard 29 CFR 1910.20.
  - assigning and maintaining hearing protectors.
- d. Interface with EOHSS, and other support departments on program administration and compliance matters.

## 2. **Employees**

- a. Assist in identifying and reporting any noisy areas in their department.
- b. Attend annual training on the department's Occupational Noise Exposure Program.
- c. Attend audiometric testing appointments.
- d. Wear hearing protection where required.

3. **Environmental and Occupational Health and Safety Services (EOHSS)**

- a. Develop a written Occupational Noise Exposure Program for implementation of the Occupational Noise Exposure policy and monitor compliance with these standards.
- b. Identify processes and areas where employee exposure may exceed the limits listed in EXHIBIT A, EOHSS, using benchmarking information, historical data and current technology, will make every effort to identify excessive noise levels.
- c. Perform noise sampling to determine noise exposure levels.
- d. Notify in writing each employee exposed at or above 85 dBA 8 hour TWA of the results of the monitoring.
- e. Provide technical assistance to schools/units in reducing noise levels to below levels listed in EXHIBIT A.
- f. Notify Occupational Medicine Services of employees who are exposed to noise at or above the action level of an 8 hour TWA of 85 dBA.
- g. Provide technical assistance in identifying appropriate hearing protection and training employees in its initial fitting, use and care.
- h. Provide annual training on the Occupational Noise Exposure Program to affected University personnel.

4. **Physical Plant Department**

- a. If appropriate, assisting schools and units in reducing noise levels caused by their operations, equipment or construction work.
- b. Ensure that specifications for renovations include the requirement that sound levels in renovated areas and new facilities meet criteria for HVAC system Noise in Unoccupied Spaces specified in the ASHRAE HVAC Applications Handbook and that the sound levels in the renovated space meet the criteria before being turned over to the University.

5. **Campus Occupational Medicine Service Provider/Contracted Health Care Provider**

- a. Develop and implement policy and procedures, similar to the one outlined in the New Jersey Medical School's (NJMS) Occupational Medicine Service's (OMS) procedures "Medical Surveillance for Occupational Noise-Induced Hearing Loss policy", #832-600-045 to establish and maintain an audiometric testing program.
- b. Notifies EOHSS and the schools/units of employees who experience work related hearing loss including standard threshold shifts and the aggregate results of the audiometric testing.
- c. If requested, participate in annual training to provide information on the audiometric testing and the results.

6. **Facilities Planning and Construction (FP&C)**

Ensure that specifications for new buildings and renovations include the requirement that sound levels in renovated areas and new facilities meet criteria for HVAC System Noise

in Unoccupied Spaces specified in the ASHRAE HVAC Applications Handbook. In addition, that the sound levels in new or renovated space meet the criteria before being turned over to the University.

VII. EXHIBITS

- A. Permissible Noise Exposures
- B. OSHA's Occupational Noise Standard Hearing Conservation Program
- C. Model Occupational Noise Exposure Program

By Direction of the President:

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Senior Vice President for Administration

EXHIBIT A

**Permissible Noise Exposures**

Duration per day, hours	Sound level dBA slow response
<b>8</b>	<b>90</b>
<b>6</b>	<b>92</b>
<b>4</b>	<b>95</b>
<b>3</b>	<b>97</b>
<b>2</b>	<b>100</b>
<b>1 ½</b>	<b>102</b>
<b>1</b>	<b>105</b>
<b>½</b>	<b>110</b>
<b>¼ or less</b>	<b>115</b>

When the daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect should be considered, rather than the individual effect of each. If the sum of the following fractions:  $C(1)/T(1) + C(2)/T(2) + C(n)/T(n)$  exceeds unity, then, the mixed exposure should be considered to exceed the limit value.  $C_n$  indicates the total time of exposure at a specified noise level, and  $T_n$  indicated the total time of exposure permitted at that level. Exposure to impulsive or impact noise should not exceed 140 dBA peak sound pressure level.

## EXHIBIT B

### OSHA's Occupational Noise Standard Hearing Conservation Program

Whenever any employee's average noise exposure over an 8-hour work shift is greater than or equal to 85 dBA (the action level), the employer must administer a hearing conservation program, including all of the components listed below. This section of the OSHA noise standard became effective April 7, 1983.

#### A. **Initial Noise Exposure Monitoring**

Each employer is responsible for determining if any employee's noise exposure is greater than or equal to 85 dBA, averaged over 8 hours. A noise survey must be repeated within 60 days of any process or equipment change that might result in higher noise, or more people exposed.

When the initial survey indicates that employees may be exposed at or above the 85dBA level, the employer must within 60 days provide measurements to accurately determine each employee's exposure. This type of survey is best accomplished using noise dosimeters, which are worn by individual employees with the microphone at the shoulder or head for an average 8 hour shift.

#### B. **Employee Notification**

The employer must notify each employee exposed at or above 85 dBA, 8 hours time-weighted average (TWA) of the results of the results of the monitoring.

#### C. **Audiometric Testing Program**

An audiometric testing program must be provided by the employer, at no cost to employees, to all employees exposed at or above 85dBA, 8 -hour TWA. Audiometric tests must be performed by a properly licensed or certified individual.

The audiometric testing program must include baseline audiograms for each exposed employee taken after 14 hours of no exposure to workplace noise. After obtaining a baseline audiogram, each employee shall be given annual audiograms and have them compared to the baseline by an audiologist or qualified physician.

The employee shall be notified in writing if a significant threshold shift (hearing loss) is detected, referred for further audiological evaluation if necessary, and provided with and required to wear hearing protection.

#### D. **Hearing Protectors**

Hearing protection must be made available to all employees exposed to the action level of 85 dBA. These employees must be given the opportunity to select their hearing protectors from a variety of suitable styles to be supplied and replaced as needed at no cost to the employees. The employer shall also supply training in the use and care of hearing protectors.

EXHIBIT B (continued)

**OSHA's Occupational Noise Standard  
Hearing Conservation Program**

**E. Training Program**

The employer shall provide and insure employee participation in the annual training program for all employees exposed to noise at or above a TWA of 85 dBA.

The training program shall include the following:

1. Components of their department's occupational Noise Exposure Program.
2. Effects of noise on hearing.
3. The purpose of hearing protectors; the advantages, disadvantages, and attenuation of various types, and instructions on selection, fitting, use and care.
4. The purpose and procedures of audiometric testing.

**F. Record Keeping**

The company shall maintain an accurate record of all employee exposure measurements for two years and shall retain all employee audiograms for the duration of the individual's employment. Access to these records shall be available to all employees, former employees, and their representatives.

## EXHIBIT C

### University of Medicine and Dentistry of New Jersey Model Occupational Noise Exposure Program

#### I. INTRODUCTION

The purpose of this program is to protect the employees of the department of \_\_\_\_\_ from noise hazards through feasible engineering and administrative controls and the safe and proper use of hearing protection as required by the UMDNJ Occupational Noise Exposure Policy.

#### II. ROLES

A. The Coordinator of the Noise Exposure Program is \_\_\_\_\_ (Name of Individual).

#### III. PROCEDURES

The Director/Department Head appoints a Coordinator to administer the Noise Exposure Program as follows:

##### A. IDENTIFICATION OF NOISY ENVIRONMENTS

1. The Coordinator initially identifies suspect areas within the work area where the noise levels seem unusually loud either through a walk-through of those areas or from notification by staff.
2. The Coordinator requests the department of Environmental and Occupational Health and Safety Services (EOHSS) to perform noise sampling to evaluate if the noise levels in those areas are above the levels listed in EXHIBIT A of the University policy, Occupational Noise Exposure, 00-01-45-10:00.
3. EOHSS performs an appropriate noise monitoring survey to identify the source of noise, personnel exposures and other details that will be useful in recommending control measures. When scheduling the noise monitoring, EOHSS shall inform the supervisor that employees in the sampling areas or their representatives are entitled to observe the noise monitoring. EOHSS will also impart this information to personnel in the area where sampling occurs.
4. EOHSS prepares a written report of their findings and forwards the report to the Coordinator, the Campus OMS/CHCP/EHS, and to each employee who is exposed at or above the 8 hour TWA of 85 decibels (dB(A)).
5. The Coordinator, with the help of Physical Plant and EOHSS post signs in all areas where hearing protection is required.
6. The Coordinator requests EOHSS to perform noise sampling when a change in production, process, equipment or controls occur which increases the noise levels in the department or in the area where their staff work.

EXHIBIT C (continued)

**University of Medicine and Dentistry of New Jersey  
Model Occupational Noise Exposure Program**

**B. PREVENTION OF NOISY AIR-CONDITIONING ENVIRONMENTS DUE TO CONSTRUCTION/RENOVATION**

When new construction or renovation involves the installation or upgrade of the heating, ventilation and air conditioning (HVAC) system FP&Cs or Physical Plant's Project Manager forwards a statement from the vendor to the department and EOHSS verifying that the sound levels in renovated areas/new facilities meet criteria for *Heating Ventilation and Air Conditioning (HVAC) System Noise in Unoccupied Spaces* specified by ASHRAE.

**C. AUDIOMETRIC TESTING**

1. The Coordinator schedules appointments and requires attendance on an annual basis for each employee who is exposed at or above the 8 hour TWA of 85 dB(A) for audiometric testing as described in the procedures provided by the Campus Occupational Medicine Service Provider/Contracted Health Care Provider, (OMS/CHCP).
2. The Campus OMS/CHCP notifies the department and EOHSS of employees with work related hearing loss including standard threshold shifts, and the aggregate results of the audiometric testing.

**D. HEARING PROTECTION**

1. The Coordinator provides a variety of suitable hearing protectors from which the employees exposed at or above 8 hour TWA of 85 dB(A) shall select, and develops and implements a policy of mandatory use of those hearing protectors.
2. The hearing protectors must reduce exposure to at least an 8 hour TWA of 90 dBA, and to an 8 hour TWA of 85 dBA or below for employees who have experienced a standard threshold shift.
3. EOHSS assists departments in identifying and providing suitable hearing protection, and in training employees in the fitting, use and care of their hearing protectors.
4. Once selected, the Coordinator purchases and distributes the hearing protection.
5. Employees report any problems with the hearing protectors, and requests for replacement in the case of disposable plugs to the Coordinator.

**E. ENGINEERING CONTROLS**

1. The Coordinator, with the assistance of EOHSS, develops a feasible plan of action to reduce noise levels to below those listed in Table I in the Occupation Noise Exposure policy.
2. The Coordinator, when purchasing new equipment or tools, with EOHSS' assistance, identifies and purchases equipment and tools with the lowest vibration and sound emitting levels available.
3. The Physical Plant Department reduces noise levels caused by their equipment and operations to levels below those listed in EXHIBIT A in the policy for employees working in or close to these areas.

EXHIBIT C (continued)

**University of Medicine and Dentistry of New Jersey  
Model Occupational Noise Exposure Program**

**F. TRAINING**

1. The Coordinator schedules and sends those employees exposed at or above an 8 hour TWA of 85 dB(A) for annual training on the elements of the Occupational Noise Exposure Program as developed and presented by EOHSS. See EXHIBIT A.
2. The Campus OMSP/Contracted HCP, if requested by EOHSS, participates in the training by providing information on the effects of noise on hearing, hearing testing and their results.

**G. RECORD KEEPING**

EOHSS and the Coordinator maintain the results of the noise sampling, noise reduction plans, and training records for two years.