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**Standard Operating Procedure**
**for**

# Hearing Conservation Program

**REVISION**

| Rev No. | DCN No. | Change Summary | Release Date | DCN Initiator | Document Owner |
|---|---|---|---|---|---|
| 4 | DCN0896 | Clarified noise exposure survey criteria, requirements for noise dosimetry, who can administer audiograms, changed "significant" to "standard" threshold shift, added actions to be taken if an employee experiences a work-related STS, clarified criteria for hearing loss recordable on the 900 form | 3-4-13 | L. Chen | R. Segura |

Prior revision history, if applicable, is available from the Document Control Office.

# 1 PURPOSE

1.1 To define procedures for an effective Hearing Conservation Program that meets or exceeds Federal and State government requirements.

1.2 Ensure that all new employees that are entered into the Hearing Conservation Program receive training on the CNSE Hearing Conservation Program prior to entering their work area.

# 2 RESPONSIBILITIES

2.1 The **EHS Manager** is responsible for managing the Hearing Conservation Program. Specific responsibilities include:

2.1.1 Performing noise exposure surveys.

2.1.2 Identify areas/jobs which are covered under the Hearing Conservation Program.

2.1.3 Assist various groups to develop engineering controls and preventative work practices.

2.1.4 Arrange for and provide quality assurance for baseline and annual audiometric testing.

2.1.5 Training employees on the hazards of noise, proper use of hearing protection and the Hearing Conservation Program.

2.2 **Facilities Operations Group**

2.2.1 Development and/or installation of engineering controls for noise sources.

2.3 **Department Managers/Supervisors**

2.3.1 Ensure that all employees covered under the Hearing Conservation Program are trained on the types of hearing protection available, proper use and fit, and elements of the Hearing Conservation Program.

2.3.2 When and where required enforce the use of hearing protection.

# 3 NOISE EXPOSURE SURVEYS

3.1 Noise exposure surveys are performed to evaluate employee exposures and to identify noise sources for design of engineering controls. Initial noise exposure surveys shall be performed for work areas and tasks where sound levels above 80 decibels are anticipated.

3.1.1 Noise Exposure Surveys will be performed:

- Annually for areas at or above 80 dBA;
- Within 60 days of a process change, modification, or equipment installation, which results in a sound level above 85 dBA which could affect employee noise exposure, and
- To evaluate the effectiveness of newly installed engineering controls.

3.2 **Measurements**

3.2.1 Noise exposure surveys shall be performed using a general purpose sound level meter that meets ANSI S1.4-1983 (NIOSH Approved Type I or Type II). The meter shall be acoustically calibrated before and after each survey.

3.2.2 All measurements shall be taken on the "A" scale and in the "Slow Response" mode.

3.2.3 The measurement shall be made at a height, which represents the employee's ear level, with both minimum and maximum levels recorded.

**NOTE:** If the noise exposure in an employee's work area is at or above 85 dBA, full shift measurements shall be made with noise dosimeters. All continuous, intermittent, and impulsive sound levels from 80-130 decibels shall be integrated into noise measurements.

3.2.4 Employees exposed to noise levels in excess of the OSHA action level of 85 dBA as an eight (8) hour Time Weighted Average (TWA) by virtue of dosimeter reading, or by job classifications and work locations, will be included in the Hearing Conservation Program and will be notified of their results in writing.

3.2.5 Noise measurement records shall be retained for at least two years.

# 4 AUDIOMETRIC TESTING

4.1 Initial audiograms will be performed within 6 months of hire for all new or transferred employees in jobs which are included in the Hearing Conservation Program.

4.2 Annual audiograms will be offered to employees whose jobs are included in the Hearing Conservation Program at no cost to employees.

4.3 Acoustical calibration and background noise level verification must be done annually. Persons administering the tests must be currently certified by the EHS Department.

4.4 No audiometric test will be given to any employee or prospective employee who has been exposed to noise above 85 dBA during the 14 hours proceeding the test period unless it can be verified that hearing protection was used.

4.5 **Audiogram Validity**

4.5.1 Audiometric tests shall be performed by a licensed audiologist, otolaryngologist, or other physician, or by a technician certified by the Council of Accreditation in Occupational Hearing Conservation.
A technician who performs audiometric tests must be responsible to an audiologist, otolaryngologist, or physician.

4.6 **Audiogram**

4.6.1 Audiometric tests shall be pure tone, air condition hearing threshold examinations with test frequencies including, as a minimum: 500, 1000, 2000, 3000, 4000 and 6000 hertz. Tests at each frequency shall be taken separately for each year.

4.6.2 A copy of the audiogram shall be kept on file for the duration of the individuals employment and shall include the following information:

- Name and Social Security Number
- Job Classification/Department/Department Number
- Date of Audiogram
- Examiner's Name
- Date of Last Annual Calibration
- Employee's Most Recent Noise Exposure Data

4.6.3 Individuals whose audiograms exhibit the following problems shall be re-tested within 30 days to confirm any of the listed changes.

- A pre-placement baseline audiogram showing a 25 dB loss in any frequency. (Individuals shall be referred to their personal physician and shall be responsible for costs associated with re-testing.)

4.7 **Standard Threshold Shift**

4.7.1 Standard threshold shift: annual retest audiograms showing an average shift of 10 decibels or more, averaged in the frequency range of 2000, 3000, 4000 hertz in either ear compared to the baseline audiogram (allowance must be made for the contribution of aging).

4.7.2 Each employee's annual audiogram shall be compared to the employee's baseline audiogram to determine if the audiogram is valid and if a standard threshold shift (Section 4.7.1) has occurred. This comparison may be done by an audiometric technician.

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

4.7.4 The EHS Department shall inform the employee in writing 21 days of the determination of the existence of a standard threshold shift.

4.7.5 The EHS Department shall inform the Department Manager/Supervisor of all employees with work-related standard threshold shifts, so that corrective action may be initiated.

4.7.6 If a hearing loss has been determined to be occupationally related, with the annual re-test audiogram showing a loss of 10 decibels and an overall reduction of 25 decibels compared to the initial baseline audiogram, the loss shall be recorded by the EHS Department on the New York State Department of Labor Form SH900.

4.7.7 All standard threshold shifts must be reported to the EHS Manager.

4.7.8 If an employee experiences a physician-diagnosed work-related standard threshold shift or if the standard threshold shift is determined by a physician to be aggravated by occupational noise exposure, the following shall be performed:

- Employees will be fitted or refitted with hearing protectors and trained or re-trained on when and how to use them.
- Employees will be informed of the need for additional otological examinations and any new audiometric interpretation related to medical pathologies of the ear.
- If subsequent audiometric testing of an employee with noise exposures below the OSHA PEL indicates the standard threshold shift is not persistent, than the employee may discontinue the use of hearing protectors.

## 5 ENGINEERING CONTROLS

5.1 Engineering Controls are mandatory when an employee's exposure to noise exceeds the OSHA PEL of 90 dBA for an eight hour time-weighted average. But Engineering Controls are desired when an employee's exposure to noise exceeds the CNSE action level of 80 dBA for eight hours. The groups where such noise exists are responsible for implementing these controls. Assistance in designing effective controls can be obtained from:

1) The manufacturer of the noise-producing equipment (or similar equipment);

2) Manufacturers of acoustical materials;

3) Literature or an acoustical engineering consultant; or

4) The CNSE EHS Department.

5.2 After engineering controls have been installed, the operation must be surveyed again to determine the effectiveness of the controls.

# 6 ADMINISTRATIVE CONTROLS

6.1 If the noise level exceeds the OSHA PEL of 90 dBA and no further engineering, controls are feasible, administrative controls must be implemented. However, if the noise level exceeds the CNSE action level of 80 dBA and no further engineering controls are feasible, administrative controls shall be implemented.

6.2 The implementation and enforcement of Administrative Controls is the responsibility of the supervisor in the area. Three major approaches to Administrative Controls are:

1) Where the time required for a job exceeds the permissible exposure limit for one person, divide the work among two, three, or as many operators as necessary to reduce the individual exposure time.

2) If less than full-time operation of a noise machine is needed, arrange to run it a portion of each day rather than all day for a part of the week.

3) Perform occasional high noise level producing operations at night or at other times when a minimum number of employees will be exposed.

# 7 PERSONAL HEARING PROTECTION

7.1 CNSE shall make hearing protectors available to all employees exposed to an eight hour Time Weighted Average (TWA) of 85 dBA (the OSHA action level) or greater, at no cost to the employees. Hearing protectors shall be replaced as necessary.

7.2 CNSE shall ensure that hearing protectors are worn:

- By any employee who is exposed to an 8-hour time weighted average of 85 dBA or greater;
- By employees who are working in areas that exceed the OSHA PEL of 90 dBA or the CNSE action level of 80 dBA where engineering and/or administrative controls have not yet been implemented;
- By those who have not yet had a baseline audiogram, and/or
- By those who have experienced a standard threshold shift. The HP attenuation will provide protection to less than 85 dBA.

7.3 Employees shall be given the opportunity to select their hearing protectors from a variety of suitable hearing protectors provided by CNSE. EHS must approve all hearing protectors offered by CNSE prior to their introduction into any workstation.

7.4 CNSE shall provide training on the use and care of all hearing protectors provided to employees, and shall ensure proper initial fitting, and supervise the correct use of all hearing protectors.

7.5 Employees shall be informed of the locations where hearing protectors are required. Those areas will be posted with “Hearing Protection Required” signs (or equivalent).

7.6 It is the responsibility of the supervisor to ensure that employees wear hearing protection when required.

7.7 Although the clean rooms and laboratories areas have not been designated as hearing conservation areas, hearing protection has been made available to use voluntarily by those that work there for comfort.

7.8 The following areas and jobs at the CNSE facility have been surveyed and determined to be part of the hearing conservation program:

- NFN – First Floor Boiler Room
- NFN - Basement Floor Process Support (N-116)
- NFN - Basement Floor Chiller Room (N-118)
- NFN – Electrical Room (N-216)
- NFN – DI Water Room (N-127)
- NFN – Solvent Liquid Room (N-240)
- NFC – Boiler Room (N-310)

- NFC – Main Scrubber Room (N-307)
- NFC – Scrubber Room (N-417)
- NFC – Scrubber Room (N-419)
- NFE – Boiler Room
- Around all HVAC roof top units
- CUB – Waste Water Treatment Area
- Running the emergency generators
- Operating landscaping equipment such as: lawnmowers, weed trimmers, chainsaws and snow blowers.

# 8 EMPLOYEE TRAINING AND INFORMATION

8.1 All employees who are exposed to noise at or above the OSHA action level of 85 dBA, those whose job duties require them to work in noise hazard areas or those that have been enrolled in the Hearing Conservation Program will be trained annually in the following:

8.1.1 The effects of noise on hearing;

8.1.2 The purpose and need for audiometric testing, and an explanation of the test procedures;

8.1.3 The purpose of hearing protectors, the advantages and disadvantages of the various types, the attenuation of various types, and instructions on selection, fitting, use and care;

8.1.4 Non-occupational sources of noise exposure;

8.1.5 Occupational sources of noise exposure.

8.2 The annual training program will be provided by the CNSE EHS Department with scheduling assistance from the affected departments.

8.3 The supervisors of the affected employees are responsible for ensuring the participation of their employees.

# 9 HEARING CONSERVATION PROGRAM FOR OUTSIDE CONTRACTORS

9.1 Contractor employees who work side-by-side with CNSE employees (who are part of CNSE's Hearing Conservation Program) must comply with the requirements set forth in this program.

9.2 Contractor employees, whose job duties may take them into noise hazard areas or who work on noisy equipment and who report to a CNSE supervisor, must participate fully in this program.

9.3 CNSE will provide hearing protection to outside contractor employees at no expense, if they meet the requirements outlined above.

# 10 RECORD KEEPING

10.1 CNSE shall retain records required by this program for at least the following periods:

10.1.1 Noise exposure surveys for at least two years;

10.1.2 Training records and employee audiometric test results for the duration of the affected employee's employment;

10.1.3 All records will be kept on file in the CNSE EHS Department.