

CCS Administrative Procedure

2.30.05 – H Hearing Conservation

Implementing Board Policy [2.30.05](#)

Contact: Environmental Health & Safety, 533-8686

1.0 Purpose

Community Colleges of Spokane is committed to the health and safety of its faculty and staff, and in maintaining a safe and efficient workplace that complies with all local, state and federal safety and health regulations, programmatic standards, and with any special safety concerns identified at the unit level. Limiting exposure to workplace noise is necessary to prevent hearing loss.

- 1.1 CCS has adopted [WAC 296-817](#) Hearing Loss Prevention to prevent hearing loss by minimizing employee noise exposure.

2.0 Definitions

- 2.1 Audiogram: A chart, graph or table resulting from an audiometric testing showing an individual's hearing threshold levels as a function of frequency.
- 2.2 Audiologist: A professional, specializing in the study and rehabilitation of hearing, who is certified by the American Speech, Hearing and Language Association, or the American Academy of Audiology, and is licensed by the state board of examiners.
- 2.3 Baseline Audiogram: The audiogram from which future audiograms are compared. The baseline audiogram is collected when an employee is first assigned to work with noise exposure. The baseline audiogram may be revised if persistent standard threshold shift of improvement is found.
- 2.4 Continuous Noise: Noise with peaks spaced no more than one second apart. Continuous noise is measured using sound level meters and noise dosimeters with the slow response setting.
- 2.5 Decibel (dB): Unit of measurement of sound level. A-weighting, adjusting for the sensitivity of the human ear is indicated as "dBA." C-weighting, an even reading across the frequencies of human hearing is indicated as "dBC."
- 2.6 Fast Response: A setting for a sound level meter that will allow the meter to respond to noise events of less than one second. Used for evaluating impulse and impact noise levels.
- 2.7 Hertz (Hz): Unit of measurement of frequency numerically equal to cycles per second.
- 2.8 Impulsive or Impact Noise: Noise levels which involve maxima at intervals greater than one second. Impulse and impact noise are measured using the fast response setting on a sound level meter.
- 2.9 Noise Dose: The total noise exposure received by an employee during their shift. It can be expressed as a percentage indicating the ratio of exposure received to the noise exposure received in an eight hour shift, to constant noise at 90 dBA. It may also be expressed as the sound level that would produce the equivalent exposure during an eight hour period (TWA).
- 2.10 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.
- 2.11 Occupational Hearing Loss: A reduction in the ability of an individual to hear either caused or contributed to by exposure in the work environment.
- 2.12 Permanent Threshold Shift: A hearing level change that has become persistent and is not expected to improve.

- 2.13 Slow Response: A setting for sound level meters and dosimeters in which the meter does not register events of less than about one second. Used for evaluating continuous and average noise levels.
- 2.14 Sound level: The intensity of noise as indicated by a sound level meter.
- 2.15 Standard Threshold Shift: A hearing level changed relative to the baseline audiogram, or an average of 10dB or more at 2000, 3000 and 4000 Hz in either ear.
- 2.16 Temporary Threshold Shift: A hearing level change that improves. A temporary threshold shift may occur with exposure to noise and hearing will return to normal within a few days. Temporary threshold shifts can be indicators of exposure that lead to permanent hearing loss.
- 2.17 TWA₈: The sound level, which if constant over an eight hour period, would result in the same noise dose measure in an environment where the noise level varies.

3.0 Hearing Conservation Program Elements

- 3.1 Evaluation of noise exposure
 - 3.1.1 When reasonable information indicates that any employee's exposure may equal or exceed an eight hour time-weighted average of 85 dBA, CCS will obtain individual or representative exposure measurements for all employees who may be exposed at or above that level.
 - 3.1.2 The sampling strategy will be designed to identify all employees required to be included in the hearing conservation program and to enable the proper selection of hearing protectors.
 - 3.1.3 Where circumstances such as high worker mobility, significant variations in sound level or a significant component of impulse noise exist, CCS will use representative personal sampling to comply with the monitoring requirements of this section unless CCS establishes that area sampling produces equivalent results.
- 3.2 Method of noise measurement
 - 3.2.1 Noise dosimeters or sound level meters which comply, as a minimum, with the provisions as noted below will be used whenever employee exposures are evaluated.
 - 3.2.2 Dosimeters shall meet the Class 2A-90/80-5 requirements of the American National Standard Specification for Personal Noise Dosimeters, S1.25-1978.
 - 3.2.3 Sound level meters shall meet the Type 2 requirements of the American National Standard Specification for Sound Level Meters, S1.4-1971 (R1976).
 - 3.2.4 All continuous, intermittent and impulsive sound levels from 80 dBA to 130 dBA will be integrated into the exposure computation.
 - 3.2.5 Monitoring will 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 an eight hour time-weighted average of 85 dBA; or the attenuation provided by hearing protectors being used by employees may be rendered inadequate to attenuate employee exposure at least to a time-weighted average of 85 dBA or below.
- 3.3 Calibration of monitoring equipment
 - 3.3.1 Dosimeters and sound level meters used to monitor employee noise exposure will be calibrated using the instrument manufacturer's calibration instructions before and after each day's use.

- 3.4 Employee notification
 - 3.4.1 CCS will notify each employee exposed at or above an eight hour time-weighted average of 85 dBA of the results of the monitoring.
- 3.5 Observation of monitoring
 - 3.5.1 CCS will provide affected employees or their representatives with an opportunity to observe any measurements of employee noise exposure which are conducted.

4.0 Noise Control

- 4.1 Whenever employee noise exposures equal or exceed an eight hour time-weighted average of 85 dBA, feasible administrative or engineering controls will be utilized.

5.0 Audiometric Testing Program

- 5.1 CCS will establish and maintain a mandatory audiometric testing program as noted below for all employees whose exposures equal or exceed an eight hour time-weighted average of 85 dBA. in those CCS work areas where noise exposures of any employee are documented at or above an eight hour time weighted average (TWA) of 85 dBA.
 - 5.1.1 Any new employee(s) hired for that position and/or work area will, within a one-month time period of beginning date of employment, be given a baseline audiometric test and subsequently re-tested annually. The program will be provided at no cost to employees.
- 5.2 Audiometric tests will be performed by a licensed or certified audiologist, otolaryngologist, or other qualified physician, or by a technician who is certified by the council of accreditation in occupational hearing conservation. A technician who performs audiometric tests must be responsible to an audiologist, otolaryngologist or other qualified physician.
- 5.3 All audiograms obtained will meet the requirements of [WAC 296-817-500](#) Options to Audiometric Testing.
- 5.4 Baseline audiogram
 - 5.4.1 Prior to or within 180 days after an employee's first exposure to noise at or above a time-weighted average of 85 dBA, CCS will establish for each employee so exposed a valid baseline audiogram against which subsequent audiograms can be compared. If mobile test units are utilized, CCS is allowed up to one year to obtain a valid baseline audiogram for each exposed employee, provided that each employee so exposed is trained and wears suitable hearing protectors in accordance with the Hearing Conservation Standard.
 - 5.4.2 Testing to establish a baseline audiogram will be preceded by at least 14 hours without exposure to workplace noise. This may be accomplished by use of hearing protectors; however, CCS will notify employees of the need to avoid high levels of non-occupational noise exposure during the 14-hour period immediately preceding the audiometric examination.
 - 5.4.3 After obtaining the baseline audiogram, CCS will obtain a new audiogram at least annually (i.e., every 12-month interval) for each employee exposed at or above a time-weighted average of 85 dBA. Annual audiometric testing may be conducted at any time during the work-shift.
- 5.5 Evaluation of audiogram
 - 5.5.1 Each employee's annual audiogram will be compared to that employee's baseline audiogram to determine if a standard threshold shift has occurred. The comparison must be made by a certified audiometric technician.
 - 5.5.2 If the annual audiogram indicates that an employee has suffered a standard threshold shift, CCS may obtain a retest within 30 days and consider the results of

the retest as the annual audiogram.

5.5.3 An audiologist, otolaryngologist or other qualified physician will review audiograms which indicate a standard threshold shift to determine whether there is need for further evaluation. CCS will provide to the person performing this evaluation the following information:

5.5.3.1 A copy of the requirements for hearing conservation as set forth in [WAC 296-817](#);

5.5.3.2 The baseline audiogram and most recent audiogram of the employee to be evaluated;

5.5.4 CCS will inform each employee of the results of his/her audiometric test and whether or not there has been a hearing level decrease or improvement since his/her previous test.

5.6 Follow Up Procedures

5.6.1 If a comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift, CCS will ensure that the following steps are taken:

5.6.1.1 Employees not using hearing protectors will be fitted with hearing protectors, trained in their use and care, and required to use them;

5.6.1.2 Employees already using hearing protectors will be refitted and retrained in the use of hearing protectors and provided with hearing protectors offering greater attenuation, if necessary.

5.6.2 If additional testing is necessary, or if CCS suspects that a medical pathology of the ear is caused or aggravated by the wearing of hearing protectors, CCS will refer the employee, at no cost to the employee, for a clinical audiological evaluation or an otological examination, as appropriate.

5.6.3 Inform the employee of the need for an otological examination if a medical pathology of the ear, which is unrelated to the use of hearing protectors, is suspected.

5.7 Revised baseline

5.7.1 Annual audiogram may be substituted for the baseline audiogram when, in the judgment of the audiologist, otolaryngologist or other qualified physician who is evaluating the audiogram:

5.7.1.1 The standard threshold shift revealed by the audiogram is persistent; or

5.7.1.2 The hearing threshold shown in the annual audiogram indicates significant improvement over the baseline audiogram.

5.8 Audiometric test requirements

5.8.1 Audiometric tests shall be conducted in accordance with WAC 296-817-400 Audiometric Testing.

6.0 Hearing Protectors

6.1 CCS will make hearing protectors available to all employees exposed to a time-weighted average of 85 dBA or greater or noise above 115 dBA or any impulsive or impact noise measured at or above 140 dB, at no cost to the employees.

6.1.1 Hearing protectors will be replaced as necessary.

6.2 CCS will ensure that hearing protectors are worn:

6.2.1 By any employee who is exposed to an eight hour time-weighted average of 85 dBA or greater; or

6.2.2 By any employee who is exposed to noise above 115 dBA; or

6.2.3 By any employee who is exposed to any impulsive or impact noise measured at or above 140 dB peak using an impulse sound level meter set to either the linear or C-scale.

6.3 Employees will be given the opportunity to select their hearing protectors from at least two different types of suitable hearing protectors provided by CCS (e.g., molded, self-molded, custom molded, or ear muffs).

6.4 CCS will provide training in the use and care of all hearing protectors provided to employees.

6.5 CCS will ensure proper initial fitting and supervise the correct use of all hearing protectors.

7.0 Hearing Protector Attenuation

7.1 Hearing protectors must attenuate employee exposure at least to a time-weighted average of 85 dBA or below.

7.2 The adequacy of hearing protector attenuation will be re-evaluated whenever employee noise exposures increase to the extent that the hearing protectors provided may no longer provide adequate attenuation. CCS will provide more effective hearing protectors where necessary.

8.0 Training Program

8.1 CCS has instituted a training program for all employees who are exposed to noise at or above an eight hour time-weighted average of 85 dBA and will ensure employee participation in this program.

8.2 The training program will be repeated annually for each employee included in the hearing conservation program.

8.2.1 Information provided in the training program will be updated to be consistent with changes in protective equipment and work processes.

8.2.2 CCS maintains a written description of the hearing conservation training program.

8.3 CCS will ensure that each employee is informed of the following:

8.3.1 The effects of noise on hearing;

8.3.2 The purpose of hearing protectors, explaining both the advantages and disadvantages, as well as the attenuation of various types and instructions on selection, fitting, use, and care;

8.3.3 The purpose of audiometric testing and an explanation of the test procedures;

9.0 Access to Information

9.1 CCS will make available to affected employees or their representatives copies of the Hearing Conservation Standard, [WAC 296-817](#), and will also post a copy in the workplace.

10.0 Warning Signs

10.1 Signs will be posted at entrances to, or on the periphery of, all well defined work areas in which employees may be exposed at or above 115 dBA.

10.2 Warning signs will clearly indicate that the area is a high noise area and that hearing protectors are required.

11.0 Record Keeping

11.1 Exposure measurements

11.1.1 CCS will maintain an accurate record of all employee exposure measurements, including time-motion studies, sound level meter results, dosimeter results, equipment identification (model number, serial number) and calibration data.

11.1.2 These records will be retained a minimum of two years.

11.2 Audiometric tests

11.2.1 Audiometric testing data includes employee name and job classification, employee audiograms, date of audiogram, examiner's name, date and type of the last audiometric calibration and the employee's most recent noise exposure assessment. Data on background sound pressure levels inside the test room must also be retained.

11.2.2 Audiometric testing data must be retained for the duration of the affected employee's employment.

11.3 All required records must be transferred to the new employer and maintained should the previous employer cease to do business.

12.0 Access to Records

12.1 All records required by this section will be provided upon request to employees, former employees, representatives designated by the individual employee, and the Director of the Department of Labor and Industries.