

Occupational Health and Safety Programs



HEARING LOSS PREVENTION

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Preamble

Through St. Francis Xavier University's (the University) health and safety policy, the University declares its commitment to providing a safe and healthy work and study environment for every member of the University community, with a special emphasis on the prevention of injuries and illnesses in the workplace.

As a component of the Health and Safety Management System the Hearing Loss Prevention Program is a comprehensive program established to actively manage and control noise throughout departments and buildings. This is accomplished through the identification of noise hazards. The program sets procedural requirements for identification, evaluation and control of noise to prevent health effects such as the development of noise induced hearing loss among workers.

1.0 Purpose

The purpose of the Hearing Loss Prevention Program (HLPP) is to ensure the university community is protected from hazards associated with exposure to noise. It aims to minimize noise exposure to levels as low as reasonably achievable and to address the university's obligation under the Occupational Health and Safety legislation.

2.0 Scope

The HLPP applies to all faculty, staff, students and contractors conducting work, study, and/or research who may be over-exposed to noise.

3.0 Regulatory Requirements

The HLPP provides the necessary guidance to meet the requirements of the applicable occupational health and safety legislation and standards including:

- 1) Nova Scotia Occupational Workplace Health and Safety Act Regulations
- 2) CSA Z94.2 – Hearing Protection Devices – Performance, Selection, Care and Use.
- 3) CSA Z107.56 – Procedures for the Measurement of Occupational Noise Exposure.

The regulatory requirement regarding noise is considered an exposure of above a time weighted average of 85 decibels (dB) during an eight-hour workday, 40-hour work week using a 3dB exchange rate. No exposure above 140dB is permitted. When the work shift is longer than eight hours the limit will be adjusted. For example, for a 12-hour work shift the average exposure permitted is 83.24dB.

4.0 Roles and Responsibilities

4.1 Department Heads and Managers

Department Heads, including Deans, Directors, and Managers have the following responsibilities:

- a) Identify noise hazard areas where workers may be over-exposed to noise and maintain the noise assessments.
- b) Implement and enforce requirements of the HLPP when work is performed in potentially high noise areas.
- c) Ensure all workers in their department are familiar with the HLPP and ensure workers have received education and training regarding noise exposures and the controls in place.
- d) Ensure noise controls are identified and implemented including engineering, administrative and lastly personal protective equipment. The first step in controlling noise shall be to explore ways to reduce noise levels where practicable.

- e) Ensure appropriate hearing protection is selected.
- f) Arrange audiometric testing of workers within first three (3) months of hire and every two years thereafter.
- g) Ensure audiometric testing records are maintained and treated as confidential medical information.

4.2 Supervisors

- a) Identify noise hazard areas through workplace inspections and ensure signage is posted at entrances to areas where workers may be over-exposed to noise.
- b) Ensure workers use noise controls put in place to protect their health and safety including the use of hearing protection devices where required.
- c) Ensure workers have received education and training with respect to noise and conduct toolbox talks on noise hazards.
- d) Maintain relevant documents such as: noise assessments, safe operating procedures, and inspections.

4.3 Employees

- a) Be familiar with and comply with the HLPP including using controls put in place for their protection. Use personal hearing protection where these devices are required.
- b) Report noise concerns to supervisor.
- c) Participate in education and training sessions as required.
- d) Participate in the university audiogram program.

4.4 Occupational Health and Safety

- a) Develop and maintain the HLPP to ensure its effectiveness and to ensure it meets legislative requirements and industry standards.
- b) Provide technical advice and guidance regarding noise measurement, risk evaluation, and control measures related to noise.
- c) Provide ongoing training and education programs related to noise.
- d) Monitor and enforce the requirements of the HLPP where there may be over-exposure to noise.
- e) Maintain relevant documents such as: noise assessments, safe operating procedures, and inspections.
- f) Communicate and liaise with building occupants and Joint OHS Committees regarding noise.
- g) Coordinate noise sampling for high-risk areas and advise the Joint OHS Committees of results.
- h) Review and audit the HLPP on an on-going basis (at least once every three years), in consultation with the Joint OHS Committees.

5.0 Hazard Recognition, Evaluation and Control

5.1 Hazard Recognition

Areas of potentially high noise hazards will be identified by the individual departments in cooperation with Occupational Health and Safety (OHS). Where necessary, appropriate noise sampling will be conducted to determine risk of over-exposure to noise. Noise assessments will be conducted as a baseline and will be conducted thereafter as the need arises such as change in process, change in equipment, move of process to another location, etc.

5.2 Noise Measurement

To assess the risk to workers' health, noise will be measured as necessary. In accordance with emergency response requirements, where identified, noise will be measured to ensure warning signals and alarms can be heard and do not pose a high noise hazard. The first step in noise measurement will include a preliminary noise survey to determine if noise is a potential issue in an area. Following the noise survey, a more in-depth noise assessment may be conducted. This detailed assessment will identify all workers who may be over-exposed to noise.

The preliminary noise survey will identify where potential noise problems exist and is conducted with the use of a handheld sound level meter. This will provide instantaneous noise measurements and will identify areas where noise may be a concern. A noise map will be provided where necessary (see Appendix B).

In areas where a more in-depth noise assessment is required full shift noise dosimetry will be conducted to determine the worker's personal noise exposure during the entire shift.

Areas/jobs identified that potentially may have noise exposure include but are not limited to:

- Facilities Management - #7 Shop (equipment)
- Facilities Management – Central Heating Plant
- Facilities Management – Mechanical Rooms
- Facilities Management – Grounds Shop and equipment
- ITS – Server Rooms

5.3 Noise Controls

Once a noise issue has been identified and measured, noise controls will be implemented to ensure adequate protection for workers. The first step will be attempting to reduce the noise level to below acceptable limits. Where this is not possible the hierarchy of controls will be explored to find the best solution as below:

5.3.1 Engineering Controls

Engineering controls are the first option to be considered when looking for noise controls. Some options may include:

- a) Isolation of the noise source – it may be possible to build an enclosure around the machinery that is producing the noise.
- b) Installing sound barriers.
- c) Using damping techniques which may also include the dampening of vibration.
- d) When purchasing new tools or equipment selecting ones that produce lower noise levels.

5.3.2 Administrative Controls

Administrative controls are the next option when deciding on appropriate noise controls when engineering controls are not practical or feasible. Some options may include:

- a) Performing regular maintenance on noise generating tools and equipment – for example, balancing rotating parts which can produce higher levels when not maintained.
- b) Adjusting worker's schedules to minimize exposure to noise.
- c) Scheduling noise generating machinery when limited number of workers are present.
- d) Developing policies and procedures regarding working around noise.
- e) Posting signage indicating a high noise area which clearly indicates the use of hearing protection required for entry.

5.3.3 Personal Protective Equipment

This is the last option when looking for a control for noise exposure. However, it may be used in situations as a temporary measure until a more permanent solution can be implemented. It may also be used in emergency situations. When engineering or administrative controls cannot be implemented or do not reduce noise to below acceptable levels, workers over-exposed to 85dB will be required to wear hearing protection devices.

Department managers are responsible for ensuring appropriate hearing protection is selected, in conjunction with a Joint OHS Committee, for workers in noisy areas.

6.0 Selection, Use and Care of Hearing Protective Devices

When a worker is over-exposed to noise and hearing protection must be worn to decrease the risk of developing noise induced hearing loss, hearing protection will be appropriately selected. In the selection process it is important to not only consider a device that will provide enough protection but also one that fits comfortably, is able to be worn with other PPE, if necessary, can accommodate communication needs and is appropriate for temperature and humidity in the area.

In selecting appropriate hearing protection ear plugs or earmuffs may be considered if they provide adequate protection. Hearing protection is largely a personal choice and if a device is comfortable and chosen by the user it is more likely to be consistently worn. A variety of options will be available to workers.

The area Joint OHS Committee will be consulted when selecting hearing protection. Hearing protection will be selected in accordance with CSA Standard Z94.2 – “Hearing protection - Performance, selection, care and use” as below:

Lex, 8h (dBA)	Recommended Class
≤90	C
> 90 (up to and including 95)	B or BL
>95 (up to and including 105)	A or AL
> 105	Dual*

*Dual hearing protection shall be used. A minimum of a Class B earmuff and a Class A earplug shall be used. It is also recommended that exposure durations be limited.

Maintenance of hearing protection will be in accordance with manufacturer’s specifications.

7.0 Education and Training

All noise-exposed workers who are required to wear hearing protection will receive education and training on the use, care and maintenance of the hearing protective devices. Training will cover but is not limited to:

- Health effects of noise.
- Results of noise assessments in workers’ specific areas.
- Control measures including hearing protective devices.
- Care and use of hearing protection, limitations, fitting and maintenance; ☐
- Audiometric testing.

8.0 Posting of Warning Signs

Signage will be posted at the entrance to areas where hearing protection is required in areas that are more than 85dB. Such signage will clearly indicate that a noise hazard exists and the hearing protection that is required for entry. Responsibility for ensuring posting of adequate signage is that of the departmental supervisor. See Appendix A.

9.0 Audiometric Testing

Noise induced hearing loss is gradual, and early signs are not usually noticed until damage has already occurred. Once noise damage has occurred it is permanent and irreversible. Noise induced hearing loss however is completely preventable. To ensure early detection of hearing loss, audiometric testing is required every two years. This will also ensure noise controls are effective and action can be taken to prevent further hearing loss.

Audiometric testing will be completed for workers within first three months of hire and every two years thereafter or as determined by an audiologist or occupational physician.

10.0 Record Keeping

10.1 Noise Assessments

Completed noise assessments will be maintained by the manager of the individual affected department. OHS will also maintain a copy as supplied.

When leaving the University, workers may request a record of noise exposure during their time of employment.

10.2 Training Records

Training records for workers who participate in the HLPP will be maintained by their direct supervisor.

10.3 Audiometric Testing

Audiometric testing may be conducted by an external contractor. In this case, the medical professional shall maintain the worker's records and treat it as confidential medical information.

Departmental managers shall maintain a list of workers who are over-exposed to noise and the dates of their audiometric testing to ensure it is conducted every two years.

11.0 Program Review and Audit

The HLPP will be reviewed on a regular basis and updated accordingly to ensure it is effective and efficient. The program will be reviewed at least every three years by OHS in consultation with the Joint OHS Committees. In addition, OHS shall audit various components of the Hearing Loss Prevention Program on an annual basis.

The audit may consist of but is not limited to:

- (a) Review of noise assessments.
- (b) Inspections of high noise areas to confirm adequate controls are in place.

- (c) Review of training records to confirm workers have had appropriate training when required to wear hearing protection.
- (d) Audiometric testing records review.

REVISION SUMMARY		
DATE	REV	SUMMARY
4 Jan 2024	0	New program

Appendix A

Sticker used to show areas and equipment that have high noise levels.



Appendix B

Following are areas on campus that have high noise levels:
(NOTE NOT ALL AREAS ON CAMPUS HAVE BEEN TESTED)

Building	Location	dB	Type
Bishops	113	87	SINGLE
Bloomfield		87/94	SINGLE
CHP	Devair compressor	87	SINGLE
CHP	Fuel pumps	87	SINGLE
CHP	Boiler 2	89	SINGLE
CHP	Boiler 1	89	SINGLE
CHP	Boiler 4 (area A)	85	SINGLE
CHP	Boiler 4 (area B)	87	SINGLE
CHP	Compressor Room	In 106/Out 90	DL/SNG
FM Building	13	96	SINGLE
FM Garage		85/107	SNG/DL
FX Hall	Bsmt near B2	89/105	SNG/DL
JBB	105	93	SINGLE
Keating	Basement	86	SINGLE
Keating	Basement beside pool	95	SINGLE
Keating	A15A	104	SINGLE
Mockler	Sprinkler room	103	SINGLE
NT	Roof	90	SINGLE
O'Regan	Mechanical Room - steam	88/108	SNG/DL
PSC	Roof	98/104	SINGLE
PSC	4006	83	SINGLE
Riley	B44	94/108	SNG/DL
Xavier	basement	104	SINGLE
Zeopt #7	Angle grinder	86	SINGLE
Zeopt #7	Belt sander	86	SINGLE
Zeopt #7	Bench grinder	90	SINGLE
Zeopt #7	Circular saw	95	SINGLE
Zeopt #7	Compound mitre saw	96	SINGLE
Zeopt #7	Dust collection motor	93	SINGLE
Zeopt #7	Hand planer	87	SINGLE
Zeopt #7	Mortice drill press	92	SINGLE
Zeopt #7	Oscillating hand sander	87	SINGLE
Zeopt #7	Portable drills	86	SINGLE

Zeopt #7	Portable router	105	DUAL
Zeopt #7	Stationary router	94	SINGLE
Zeopt #7	Table saw	87	SINGLE
Zeopt #7	Thickness planer	89	SINGLE
Zeopt Grounds	Stand on mower	89	SINGLE
Zeopt Grounds	Push mower	87	SINGLE
Zeopt Grounds	Trimmer	98	SINGLE
Zeopt Grounds	Zero turn mower	92	SINGLE