Hearing Conservation – Compliance Game Plan

The 12 things you must do to protect workers from noise hazards.

According to HealthCanada, over 6 million Canadian workers are exposed to workplace noise hazards. Among these, roughly 9,000 workers per year experience some form of hearing impairment, including tinnitus (ringing in the ears), due to overexposure to noise in the workplace. Excessive noise also increases the risk of incidents and injuries because it impairs workers' ability to communicate and hear warning sounds. As a result, OHS laws require employers to control noise levels in the workplace. Here's a Game Plan you can implement to comply with these requirements.

Hearing Conservation Program vs Non-Program

The measures OHS laws require employers to take to control noise hazards are pretty much the same across the country. The big difference is that in half the jurisdictions (Alberta, BC, Newfoundland, PEI, Saskatchewan, Northwest Territories and Nunavut) employers must implement these measures as part of an integrated 'noise control and hearing conservation' 'program' or 'plan.'

Hearing Conservation Plan Templates

Go to the OHSI website for templates of Noise Control and Hearing Conservation Plans based on the laws of Alberta, BC, Ontario and Saskatchewan, as well as a General template you can adapt for the other jurisdictions.

The 12 Steps to Noise Hazards Compliance

Regardless of whether you're in a program or a non-program jurisdiction, you can audit your company's compliance by asking yourself one basic question: Are we doing all of the things OHS laws require to identify and protect our workers against hazardous noise levels' You can draw a level of comfort about your compliance if you can truthfully answer 'YES' to each of the following 12 questions.

1. Do You Properly Measure Sound Levels' □YES □NO

As with other hazards, assessment is the first step in controlling noise

hazards. Sound levels can be scientifically measured. Accordingly, OHS laws require employers to carry out a noise survey to monitor the levels of sound to which their workers are exposed if they weren't wearing hearing protection. Alberta, BC, Manitoba, Newfoundland, PEI and Qu□bec specifically require noise monitoring to be done in accordance with a version of CSA Z107.56, *Procedure for Measurement of Occupational Noise*.

Other jurisdictions, including Ontario, give employers more leeway in measuring and assessment methods, just as long as measurements are made by a competent person using scientifically reliable instruments, which typically include:

- A Type 2 sound level meter meeting ANSI S1.4, *Specification for Sound Level Meters*;
- A Type 2 integrating sound level meter meeting the same standard; and/or
- A Type 2 noise dosimeter meeting ANSI S1.25, *Specification for Noise Dosimeters*.

2. Do You Properly Calculate Worker Exposure Levels' □YES □NO

OHS regulations dictate not just how you collect but also analyze the data to assess if your workers are exposed to hazardous levels of noise. You must calculate noise levels in A-weighted decibel units called dBA that measure sound pressure to account for the ear's different levels of sensitivities to sounds of different frequencies. To perform the required assessment, you must consider not just sound intensity but how long workers are exposed to it.

The OHS regulations list specific occupational exposure limits (OELs) reflecting the steady noise level to which a worker may be exposed in a 24-hour period. Under new harmonization rules, the OEL across Canada will be 85 dBA over an 8-hour work shift (currently, the OEL under federal rules remains 87 dBA). Exposure above 85 dBA must be reduced in duration; the higher the sound level, the shorter the duration. BC, New Brunswick, Qu□bec and Yukon also have a separate peak OEL of 140 decibels for 'impulse' or 'impact' noise, i.e., exposure consisting of 2 or more periods of exposure different levels during the shift, as opposed to continuous exposure at the same level throughout the shift.

3. Do You Properly Determine Workers' Need for Hearing Protection' □ YES □NO

In most jurisdictions, hearing protection measures are required when workers are at risk of exposure *above* 85 dBA; but in Sask. and the 3 territories, the need for hearing protection kicks in at above 80 dBA. In determining whether your own workers need hearing protection, you should assume that workers aren't using any hearing protection. In other words, you're generally not allowed to factor in the 'attenuation' effect hearing protection has on reducing the level of noise workers experience.

4. Do You Use Hierarchy of Controls' to Select Hearing Protection' □ YES □NO

When and if you determine that workers are exposed above the OEL (if you come to the opposite conclusion, you can stop reading), it becomes a matter of figuring out how to protect them. As with other hazards, the OHS laws give employers discretion to select their own noise hazard controls based on what's

‘practicable‘ in the circumstances, following the ‘hierarchy of controls.’ Items 5 thru 8 below explain how to select controls for noise hazards.

5. Do You Eliminate Noise Hazards If Practicable’ □YES □NO

The preferred way to control noise hazards is to lower the volume. So, first consider if it’s practicable to eliminate the hazard by getting rid of dangerously noisy machinery and equipment and substituting safer alternatives.

6. Do You Implement Appropriate Engineering Controls’ □YES □NO

If, as will likely be the case, elimination isn’t practicable, the next preference is to use engineering controls to muffle or reduce the volume of noise hazards. Possibilities to consider:

- Redesigning, modifying or retrofitting equipment, e.g., via installation of mufflers or noise damping materials; and/or
- Relocating noisy machinery and equipment.

Other engineering controls eliminate noise hazards along their path to the worker. Examples:

- Installing sound-absorbing materials in or enclosing noisy work areas; and/or
- Screening or shielding noisy equipment.

7. Do You Implement Appropriate Administrative & Work Controls’ □YES □NO

Next, consider measures that minimize hazards by controlling how and when the work is performed. For example, work/administrative controls for noise hazards would include modifying work schedules to limit how long workers are exposed and rotating workers in and out of noise hazard areas.

8. Do You Provide Proper PPE when Noise Hazards Can’t Be Engineered Away’ □YES □NO

The lowest level of the hierarchy to be used as a last resort is to control hazards via PPE, i.e., making workers exposed to noise hazards use personal hearing protection. While perfectly okay as a complementary measure, personal hearing protection is generally not allowed as the primary method of protection except in narrow circumstances where engineering controls are unavailable, ineffective or otherwise impracticable. Employers subject to Federal, Alberta, BC, Manitoba, Newfoundland, PEI and Qu□bec must also ensure that each item of hearing protection equipment meets a specific version of CSA Z94.2, *Hearing Protection Devices’Performance, Selection, Care, and Use*.

You must furnish required PPE to workers exposed to noise at levels exceeding the OEL at no cost to them. In Saskatchewan, Northwest Territories and Nunavut, employers must also furnish hearing protection to workers exposed to noise above 80 dBA and below 85 dBA if they request it.

9. Do You Post Proper Warning Signs' □YES □NO

Employers must post clearly worded noise hazard warning signs, although there are slight differences as to when signs are required (with regard to whether noise must be above or near the OEL) and what they must say.

10. Do You Provide Workers Proper Education & Training' □YES □NO

Workers required to use hearing protection or otherwise exposed to hazardous noise levels must receive education and training from a competent trainer covering, at a minimum:

- The hazards of exposure to excessive noise;
- How hearing protection protects against such hazardous exposure;
- The capabilities and limitations of the particular types of hearing protection devices used;
- The importance of ensuring a tight and comfortable fit;
- How to effect a tight seal between earplugs and the ear canal;
- How to effect a tight seal between earmuffs and the side of head;
- How to inspect the equipment;
- How to clean, disinfect and maintain the equipment;
- Why it's important not to modify the equipment, e.g., by drilling holes in earcups; and
- Key details about the audiometric testing you provide, how it works and what they must do to avail themselves of testing.

11. Do You Provide Workers Required Audiometric Testing' □YES □NO

Occupational hearing loss tends to be gradual and cumulative. By the time workers notice a problem, it's often too late to reverse the damage. That's why 9 jurisdictions (Alberta, BC, Manitoba, Newfoundland, Prince Edward Island, Saskatchewan and the 3 territories) require employers to provide workers exposed above the OEL audiometric testing performed by medical professionals using scientifically reliable methods. To detect hearing damage *before* symptoms are perceived, workers must get a baseline test within a specific period of time, typically 6 months, after initial exposure and then get retested every year (or 2 years) after that.

12. Do You Monitor the Effectiveness of Your Noise Control Measures' □YES □NO

The final step is to monitor the validity of your noise assessment and effectiveness of your noise control program and/or non-program measures at least once a year and immediately in response to:

- Worker complaints or symptoms indicating ringing in the ears or hearing loss;
- Changes to equipment, machinery, tools, or work conditions that increase or have the potential to increase either: (i) how much noise the worker is exposed to; and/or (ii) the exposure's duration;
- Before the construction of significant additions or alterations to a work site that have the potential to create noise hazards; and
- Any other indications suggesting that your assessment and safety measures might be ineffective or unresponsive to current work site conditions and

noise hazards.