

Standard Interpretations (/laws-regs/standardinterpretations/publicationdate)

/ Recording criteria for cases involving occupational hearing loss when employees use hearing protection

- **Standard Number:** [1904.5\(a\) \(https://www.osha.gov/pls/oshaweb/owalink.query_links?src_doc_type=STANDARDS&src_unique_file=0&src_anchor_name=1904.5\(a\)\);](https://www.osha.gov/pls/oshaweb/owalink.query_links?src_doc_type=STANDARDS&src_unique_file=0&src_anchor_name=1904.5(a);)
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OSHA requirements are set by statute, standards and regulations. Our interpretation letters explain these requirements and how they apply to particular circumstances, but they cannot create additional employer obligations. This letter constitutes OSHA's interpretation of the requirements discussed. Note that our enforcement guidance may be affected by changes to OSHA rules. Also, from time to time we update our guidance in response to new information. To keep apprised of such developments, you can consult OSHA's website at <http://www.osha.gov/>.

April 29, 2016

Mr. Richard L. Stepkin, MS, CCC-A
Enviromed Corp.
555 Blackwood-Clementon Road
Lindenwold, New Jersey 08021

Dear Mr. Stepkin:

Thank you for your January 11, 2016, letter to the Occupational Safety and Health Administration (OSHA) regarding the recordkeeping regulation contained in 29 CFR 1904 - Recording and Reporting Occupational Injuries and Illnesses. Your letter has been forwarded to OSHA's Directorate of Enforcement Programs for response. Specifically, your letter requested an interpretation of the requirements in Section 1904.10, *Recording criteria for cases involving occupational hearing loss*, when employees use hearing protection. You also requested guidance on the issue of hearing protector attenuation and OSHA's occupational noise exposure standard at 29 CFR 1910.95. This reply letter constitutes OSHA's interpretation only of the requirements discussed and may not be applicable to any question not detailed in your original correspondence. We've described your scenario, below, and paraphrased your questions, followed by our responses.

Background: OSHA's injury and illness recordkeeping regulation at Section 1904.10 states, in pertinent part:

1. 1904.10(a)

Basic requirement. If an employee's hearing test (audiogram) reveals that the employee has experienced a work-related Standard Threshold Shift (STS) in hearing in one or both ears, and the employee's total hearing level is 25 decibels (dB) or more above audiometric zero (averaged at 2000, 3000, and 4000 Hz) in the same ear(s) as the STS, you must record the case on the OSHA 300 Log.

1. 1904.10(b)(5)

Are there any special rules for determining whether a hearing loss case is work-related? No. You must use the rules in § 1904.5 to determine if the hearing loss is work-related. If an event or exposure in the work environment either caused or contributed to the hearing loss, or significantly aggravated a pre-existing hearing loss, you must consider the case to be work related.

In your letter, you state that you understand that a worker's use of hearing protection *alone* does not always constitute a reason to *not* record a shift in hearing if the shift is, in part or complete, due to workplace noise exposures. You also state that you know the variability of the fit of hearing protection is one of the primary reasons for not allowing hearing protection *alone* to rule out work relatedness. And you state you understand there can be added variables, such as type of noise, use and tenure of hearing protection, duration of work shift, length of employment, degree of loss, threshold configuration, time-weighted average (TWA), etc.

However, to address the variability of fit, you suggest using OSHA's de-rating method outlined in OSHA's noise standard at 29 CFR 1910.95, Appendix B, *Methods for estimating the adequacy of hearing protector attenuation*, which explains how to determine the adequacy of hearing protector attenuation using the noise reduction rating (NRR)¹ of a given hearing protector. Furthermore, to adjust for realistic conditions, you suggest applying a 50% safety factor when estimating actual noise attenuation in the workplace.²

Scenario: An employee works in a plant and is exposed to continuous noise no greater than 88 decibels A-weighted (dBA). Hearing protection is required whenever workers are in the production area, and the earplugs provided to the employees have an NRR of 27. Applying the dBA de-rating, $27 \div 2 = 13.5$, the worker's actual exposure would be $88 - 13.5 = 74.5$ dBA at the employee's ear.

Question 1: If an employee exposure **after** de-rating falls below 85 dBA, would that be a justification to **not** record an STS shift on the OSHA 300 Log?

Response: First, OSHA does allow the worker's use of hearing protection to be considered by an employer when making determinations of work relatedness. However, this should not be the **sole** criterion in such determinations, nor should the determination be reduced to an equation. Under OSHA's recordkeeping regulation, an employer must consider many factors when determining whether hearing loss is work-related, and such determinations must be made on a case-by-case basis.

On July 2, 2002, OSHA issued a final rule which revised the criteria for recording work-related hearing loss cases. See, 67 Fed. Reg. 44037. As noted above, Section 1904.10(a) provides that if an employee's audiogram reveals that the employee has experienced a work-related STS in hearing in one or both ears, and the employee's total hearing level is 25 dBA or more above audiometric zero (averaged at 2000, 3000, and 4000 Hz) in the same ear(s) as the STS, the case must be recorded on the OSHA 300 Log. Section 1904.10(b)(5) requires an employer to consider a case to be work-related

only when exposure at work either caused or contributed to the hearing loss, or significantly aggravated a pre-existing hearing loss. The Section goes on to state that there are no special rules in the recordkeeping regulation for determining whether an employee's hearing loss is work-related, but that employers must use the same rules contained in Section 1904.5 when making determinations for any and all employee injury/illness cases, including hearing loss cases. Among other things, Section 1904.5 (a) provides that an employer must record a case if an event or exposure in the work environment is a discernable cause of the injury or illness. Please know that the work event need only be one of the discernable cause, it need not be the sole or predominant cause. See, the preamble to OSHA's January 19, 2001, final rule revising the recordkeeping regulation, 66 Fed. Reg. 6943.

In the preamble to the July 2, 2002, final rule, OSHA explained that "[W]hen evaluating the work relatedness of a given hearing loss case, the employer should take several factors into account." These factors include the worker's prior occupational and non-occupational noise exposure, evaluation of calibration records and the audiometric environment, investigation of related activities and personal medical conditions, and age correction. Another "important factor to consider is the effectiveness of the hearing protection program. When employees are exposed to high levels of noise in the workplace, and do not wear appropriate hearing protection devices, a case of hearing loss is more likely to be work-related. If an employee's hearing protection devices are not appropriate for the noise conditions, if they do not fit properly, or if they are not used properly and consistently, they may not provide enough protection to prevent workplace noise from contributing to a hearing loss case." See, 67 Fed. Reg. 44045.

Thus, a determination of work relatedness should include an assessment of the appropriateness of the employee's hearing protection worn. However, while your application of the de-rating method to the NRR of the hearing protection device is a conservative assessment of workplace conditions, you should know that when OSHA assesses the adequacy of a hearing protection device to determine an employer's compliance with the hearing conservation requirements of Section 1910.95, we only subtract 7 dB from the NRR. The additional safety factor of 50 percent is only applied by OSHA when considering whether the employer should be implementing engineering controls. [OSHA Instruction TED 01-00-015]

Finally, besides assessing the level of protection of the worker's hearing protector, your determination should also consider whether the given worker actually used the protection, and whether the worker was properly trained in wearing the protection. These, along with all the other criteria in Section 1904.10, should be included in your determination of the work relatedness of a hearing loss case.

Additional guidance for hearing professionals on determining when hearing loss is work-related is available from the Council for Accreditation in Occupational Hearing Conservation (CAOHC), and from the National Hearing Conservation Association (NHCA).

Question 2: Instead of using 85 dBA as the criterion for evaluating the appropriateness of a de-rated hearing protector, should 82 dBA be used? Most hearing professionals consider 80 dBA as the minimum "safe" level, so what would OSHA consider as the minimum "safe" level to target?

Response: OSHA's criterion is provided in mandatory Appendix B to §1910.95: "For employees who have experienced a significant threshold shift, hearing protector attenuation must be sufficient to reduce employee exposure to a TWA of 85 dB." Any revision to the criterion in this Appendix would require notice and comment rulemaking. At present, OSHA has no plans to revise Appendix B to § 1910.95.

Thank you for your interest in occupational safety and health. We hope you find this information helpful. OSHA's requirements are set by statute, standards, and regulations. Our letters of interpretation do not create new or additional requirements but rather explain these requirements and how they apply to particular circumstances. This letter constitutes OSHA's interpretation of the requirements discussed. From time to time, letters are affected when the Agency updates a standard, a legal decision impacts a standard, or changes in technology affect the interpretation. To assure that you are using the correct information and guidance, please consult OSHA's website at [www.osha.gov \(/index.html\)](http://www.osha.gov (/index.html)). If you have further questions, please feel free to contact the Office of Health Enforcement at (202) 693-2190.

Sincerely,

Thomas Galassi, Director
Directorate of Enforcement Programs

¹ The Noise Reduction Rating (NRR) is the laboratory-obtained, real ear attenuation for hearing protectors, as measured in decibel units. The NRR was developed by the U.S. Environmental Protection Agency (EPA), and according to EPA regulation, manufacturers of hearing protection devices must display the NRR on their hearing protector packages (40 CFR 211).

² When OSHA considers whether engineering controls are needed for reducing hazardous noise, compliance officers will apply a 50% correction factor when estimating the field attenuation of hearing protectors. See OSHA Technical Manual (OTM), Section III, Chapter 5, *Noise*, Appendix E, *Noise Reduction Rating*. OSHA Instruction TED 01-00-015.
[https://www.osha.gov/dts/osta/otm/new_noise/index.html \(/dts/osta/otm/new_noise/index.html\)](https://www.osha.gov/dts/osta/otm/new_noise/index.html (/dts/osta/otm/new_noise/index.html)).

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