

Idaho National Laboratory

HEARING CONSERVATION	Identifier: RD-2108
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Subcontractors	Program Requirements Document	eCR Number: 609440
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Manual: INL Subcontractor Requirements

Entire Document Changed

1. PURPOSE

This document provides requirements for the Hearing Conservation Program (HCP), the goal of which is to keep occupational noise exposures below established regulatory requirements for employees in the workplace. This document highlights requirements referenced in the "Source Documents" section, as well as Contractor requirements. Any applicable regulatory or Contractor requirements must be followed, with the most stringent requirement being met.

2. APPLICABILITY

This document applies to all subcontractors working at the INL whose employees may be exposed to noise levels at or above action levels, as specified in their contract with the Contractor. Stricter requirements may be imposed by subcontractors upon their employees or subtier contractors. The requirements of this document must be followed by subcontractors; however, the means of implementation may vary as determined by the subcontractor.

3. REQUIREMENTS

- 3.1 All work performed in high noise areas shall meet the requirements of 29 CFR 1926.52 Occupational Noise Exposure for Construction and 29 CFR 1910.95 Occupational Noise Exposure for General Industry.

NOTE 1: *Noise exposure threshold limit values (TLVs) adopted by the INL are governed by the American Conference of Governmental Industrial Hygiene (ACGIH), see Appendix A.*

NOTE 2: *The ACGIH exchange/doubling rate is 3dB*

- 3.2 Construction industry employer's hearing conservation program shall incorporate the following elements:
- 3.2.1 monitoring
 - 3.2.2 employee notification
 - 3.2.3 hearing protection
 - 3.2.4 training program
 - 3.2.5 record keeping

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3.2.6 audiometric testing program for “core employees”

NOTE 1: *“**Core employee**,” an employee working for the construction contractor for six months. Six months is the requirement for enrolling an employee into a baseline audiogram after the employee’s first exposure at or above the action level against which subsequent audiograms can be compared.*

NOTE 2: *The subcontractor’s hearing conservation program shall be made available upon request, including a listing of “core employees” enrolled in audiometric testing.*

4. DEFINITIONS

Audiogram. A chart, table, or graph resulting from an audiometric test showing an individual’s hearing threshold levels as a function of frequency.

A-weighted scale. A frequency weighting network that is incorporated into sound level meters and noise dosimeters to duplicate the response of the human ear to various sounds.

Baseline audiogram. The audiogram against which future audiograms are compared.

Noise Reduction Rating (NRR). Related to a worker’s noise environment to assess the adequacy of the attenuation of a given hearing protector. When using the A-weighted network, subtract 7 dB from the NRR then subtract the remainder from the A-weighted TWA to obtain the estimated A-weighted TWA under the ear protector. If dual hearing protection (i.e. plug and muff) is worn, use the highest NRR of the two devices, subtract 7 dB from that NRR, add 5 dB to the resultant NRR and then subtract this value from the A-weight TWA as stated above to determine the protected TWA. NRRs of hearing protectors should also be evaluated in terms of effectiveness against specific frequencies of noise.

Threshold limit value (TLV). An 8-hour TWA of 85 dBA (see def.), 9-hour TWA of 84.5 dBA, 10-hour TWA of 84 dBA and a 12-hour TWA of 83.2 or, equivalently, a dose of 100% of the TLV. These levels and durations of exposures established by the American Conference of Governmental Industrial Hygiene (ACGIH) represent conditions under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effect on their ability to hear and understand normal speech.

Time-weighted average (TWA). The average exposure (time weighted) to noise for a normal 8-hour workday or a 40-hour workweek to which all personnel may be repeatedly exposed without adverse health effects.

For additional definitions of terms used throughout the INL Subcontractor Requirements Manual, refer to LST-359.

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5. REFERENCES

5.1 Source Documents

29 CFR 1910.95, Occupational Noise Exposure

29 CFR 1926.52, Occupational Noise Exposure

29 CFR 1926.101, Hearing Protection

American Conference of Governmental Industrial Hygiene (ACGIH)

6. APPENDICES

Appendix A, Threshold Limit Values for Noise

Appendix A

Threshold Limit Values for Noise

These threshold limit values (TLVs) refer to sound pressure levels and durations of exposure that represent conditions under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effect on their ability to hear and understand normal speech.

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The limits that are given here have been established to prevent a hearing loss at higher frequencies, such as 3000 Hz and 4000 Hz. The values should be used as guides in the control of noise exposures and due to individual susceptibility, should not be regarded as fine lines between safe and dangerous levels.

Threshold Limit Values For Noise ^a

Duration per day (hr)	Sound level (dBA) ^b	Duration per day (min)	Sound level (dBA) ^b	Duration per day (sec)	Sound level (dBA) ^b
24	80	30	97	28.12	115
16	82	15	100	14.06	118
10	84	7.5 ^c	103	7.03	121
8	85	3.75 ^c	106	3.52	124
4	88	1.88 ^c	109	1.76	127
2	91	0.94 ^c	112	0.88	130
1	94			0.44	133
				0.22	136
				0.11	139

a. No exposure to continuous, intermittent, or impact noise in excess of a peak C-weighted level of 140 decibels.

b. Sound level in decibels is measured on a sound level meter conforming, as a minimum, to the requirements of the American National Standards Institute (ANSI) Specification for Sound Level Meters, S1.4-1983, Type S2A, and set to use the A-weighted network with slow meter response.

c. Limited by the noise source, not by administrative control. It is recommended, also, that a dosimeter or integrating sound level meter be used for sounds above 120 decibels.

Continuous or Intermittent Noise

Sound level in decibels is measured on a sound level meter conforming, as a minimum, to the requirements of the ANSI Standard, Specification for Sound Level Meters, S1.4-1983, Type S2A, and set to use the A-weighted network with slow meter response.