



# Cutting through the Noise:

## Elements of a Successful Hearing Conservation Program



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## COSS, COHC

Editor - EHS

J. J. Keller & Associates, Inc.

# Have you heard?



Nearly 22 million workers  
are exposed to potentially  
damaging noise at work  
each year.



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# Hearing Conservation - What's the big deal?

According to NIOSH and the CDC:

- About 25% of all workers have been exposed to hazardous noise, with 14% (22 million) exposed in the last year.
- **53% of noise-exposed workers report not wearing hearing protection.**
- Approximately 12% of all workers have hearing difficulty.
- About 8% of all workers have tinnitus.
- About 16% of noise-exposed tested workers have a material hearing impairment. Hearing impairment is hearing loss that impacts day-to-day activities.
- 13% of noise-exposed tested workers have hearing impairment in both ears.



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# AGENDA

- The importance of hearing conservation at work (and home)
- Regulatory scope
- **Noise monitoring**
- **Audiometric testing**
- **Exposure controls**
- **Training and Recordkeeping**
- **Evaluation and Follow up**



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# Regulatory Scope – Always start here first!

1910.95 (General Industry)		1926.52 (Construction)	
When employees are subjected to sound exceeding those listed in <b>Table G-16</b> .		When employees are subjected to sound levels exceeding those listed in <b>Table D-2</b> .	
DURATION (Hours/Day)	SOUND LEVEL (dBA)	DURATION (Hours/Day)	SOUND LEVEL (dBA)
8	90	8	90
6	92	6	92
4	95	4	95
3	97	3	97
2	100	2	100
1.5	102	1.5	102
1	105	1	105
.05	110	.05	110
.25 or less	115	.25 or less	115

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# When do the “numbers” kick in?

## ACTION LEVEL (AL)

- Level of exposure when “action” must be taken (i.e., medical surveillance, exposure monitoring, etc.).
- Typically, ALs are ½ of the PEL.
- Not all substances have ALs, which are generally used for substances with a high risk of harm or where PELs may not provide adequate protection due to the technical difficulty of controlling the substance.
- Action limits are legally enforceable.

## PERMISSIBLE EXPOSURE LEVEL (PEL)

- The level of exposure established as the highest level of exposure an employee may be exposed to without incurring the risk of adverse health effects.
- PELs must not be exceeded during any 8-hour work shift of a 40-hour workweek.





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**85 dBA**
  
**ACTION**
  
**LEVEL**



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# Noise monitoring

- 1910.95(d)
- Noise **at or above** 85 decibels (dB) averaged over 8 working hours
- Intermittent, impulse, and impact noise included
- Initial and Periodic Monitoring – **typical** work situation/day
  - When there are changes in production, processes, or controls
- Results go both ways!



# Noise monitoring

## Typical Sound Levels (dBA)

60	Normal Conversation
70	Dishwasher
80-85	Lawnmower (Gas-powered)
95	Motorcycle
120	Pneumatic drill
130	Jackhammer



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# Noise monitoring

## 98 dB



### Typical Sound Levels (dBA)

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# Noise monitoring

98 dB



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114 dB

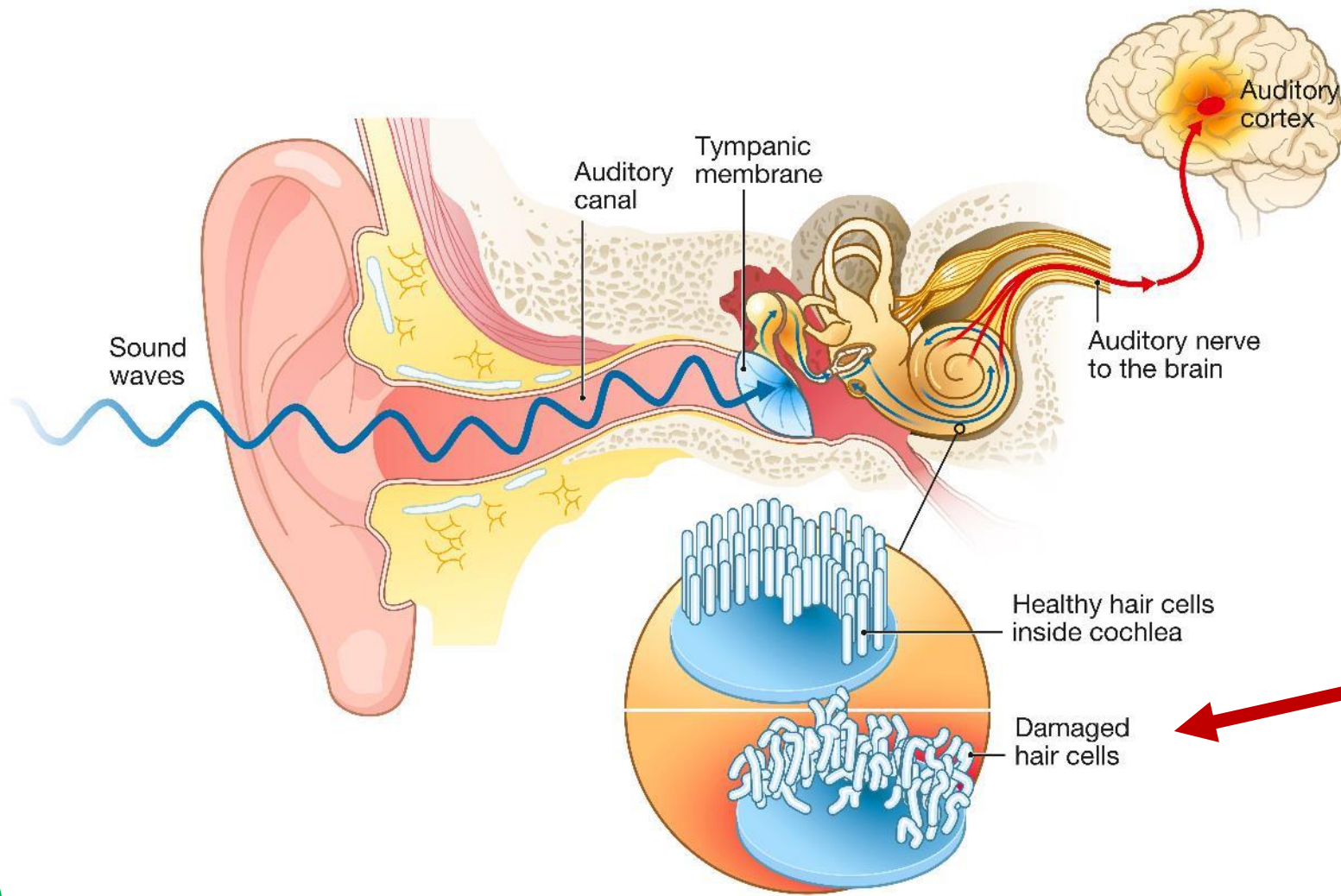


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# Hearing Damage – What’s going on?



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# How can you tell there's a problem?



- Noise may be a problem in your workplace if you:
  - Need to raise your voice to talk to someone 3 feet away
  - Hear ringing or humming in your ears when you leave work
  - Have to shout to be heard by a coworker an arm's length away
  - Experience temporary hearing loss when leaving work



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# Noise monitoring

- Sound level meter
  - Mapping
- Dosimeter



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# Noise monitoring

- Sound level meter
  - Mapping
- **Dosimeter**
- Appendix A to 1910.95

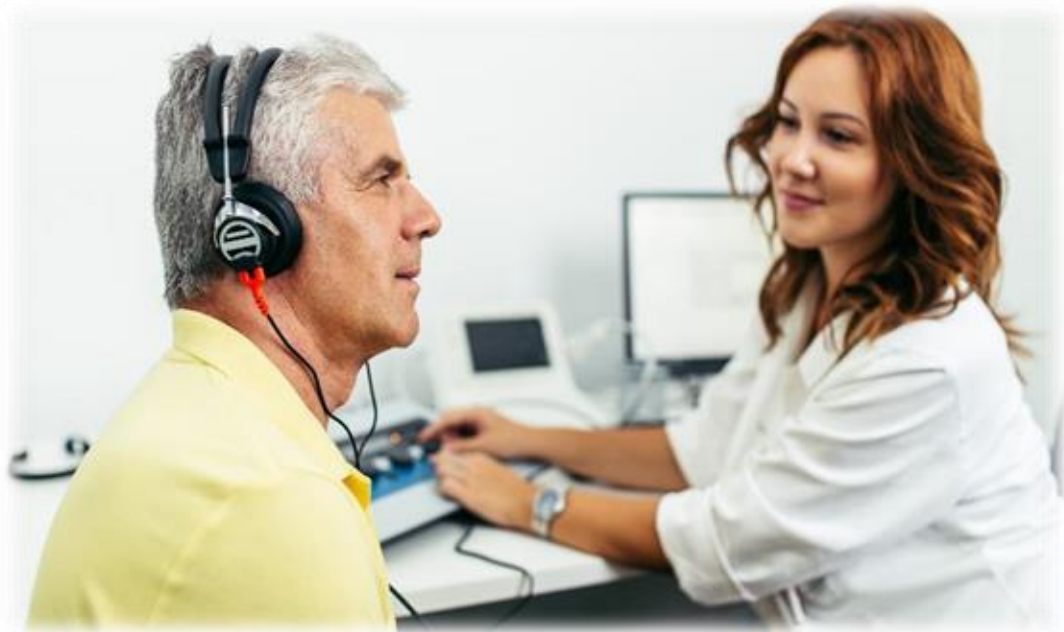


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# Audiometric testing



- Baseline and annual testing
  - Free!
  - Calibrated equipment
- Follow-up procedures *(if applicable)*
- Who can test?

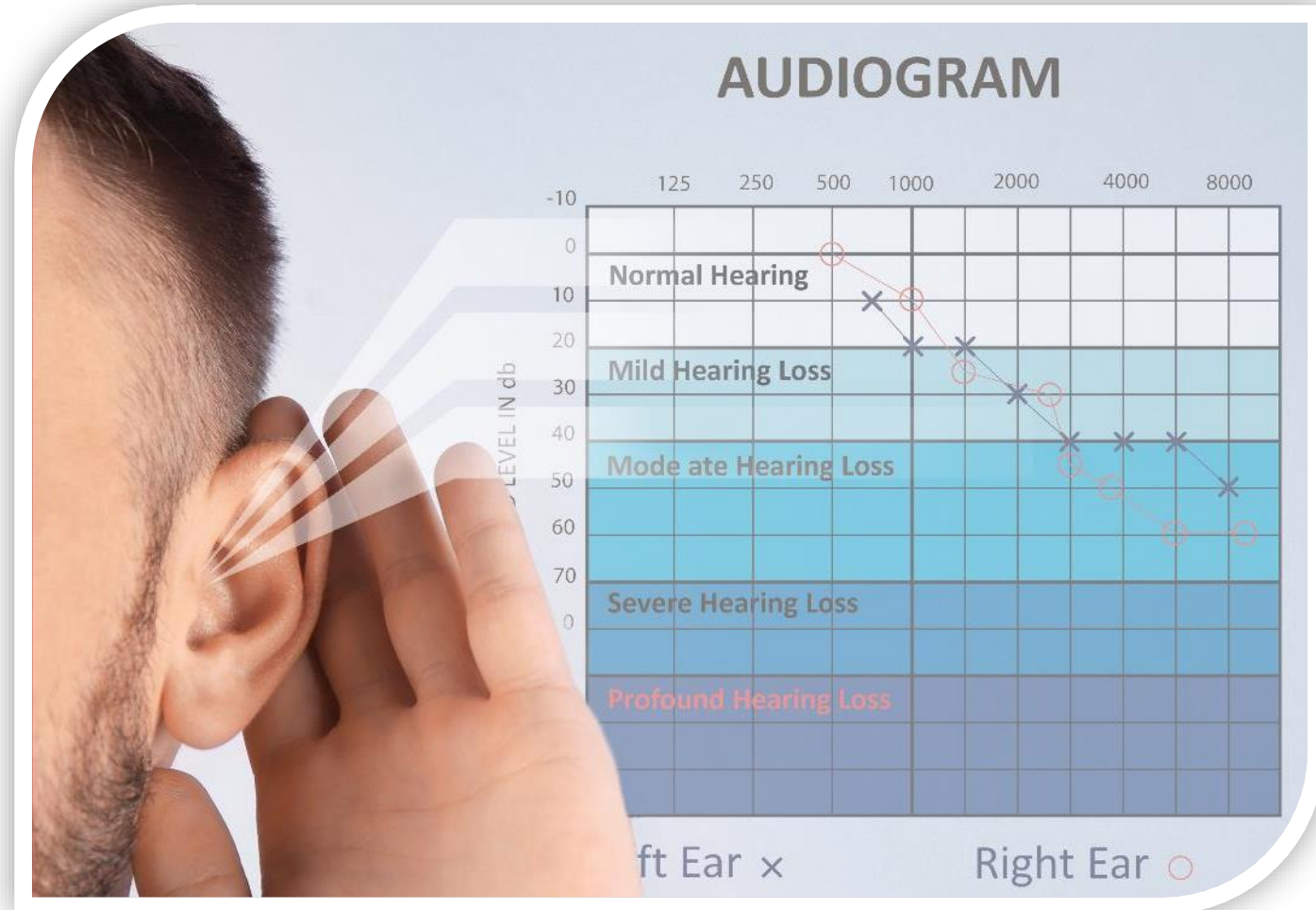


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# Audiometric testing

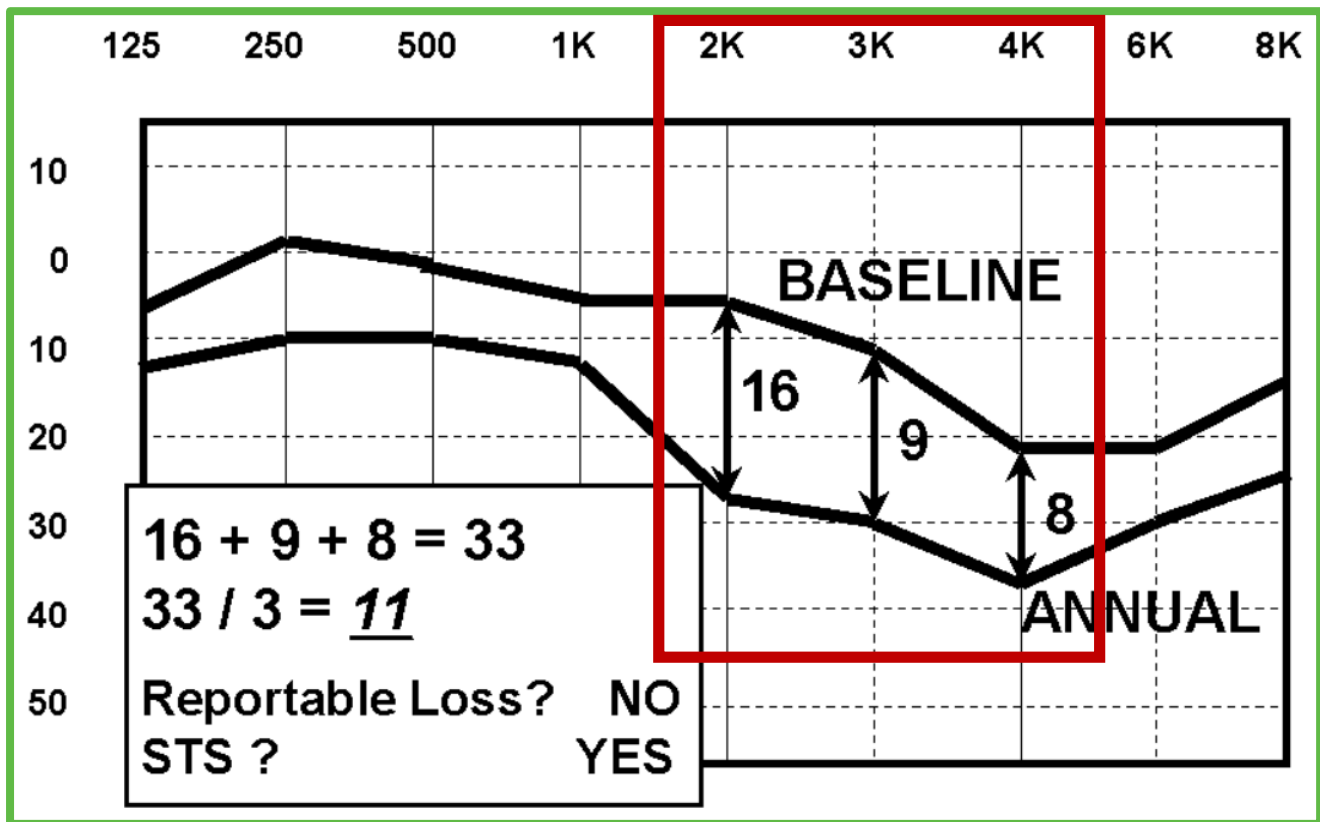
**Baseline**  
 (6 mo. or 1 yr.)  
 versus  
**Annual**  
 (within 1 year of  
 baseline)  
 1910.95(g)



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# Audiometric testing - STS



- Average shift in either ear
- 10 dB or more
- At 2,000, 3,000, and 4,000 Hz

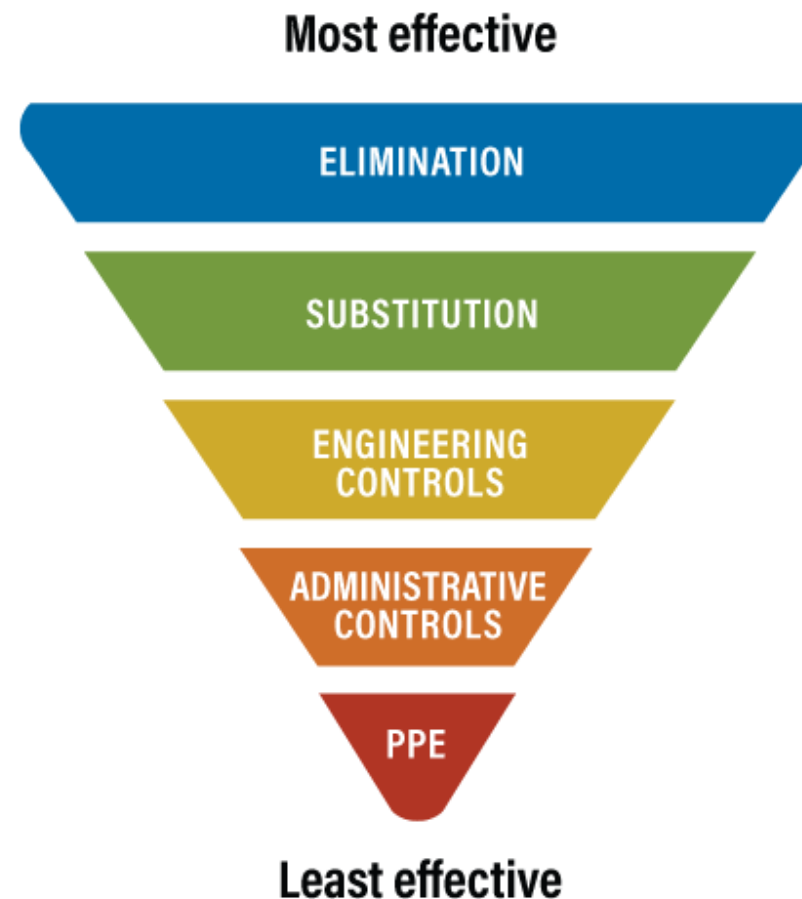


# Noise Control Measures

Noise control measures may include:

- Modifying or replacing equipment
- Modifying work schedules
- Modifying work environments
- PPE (when all else fails)

## Hierarchy of Controls

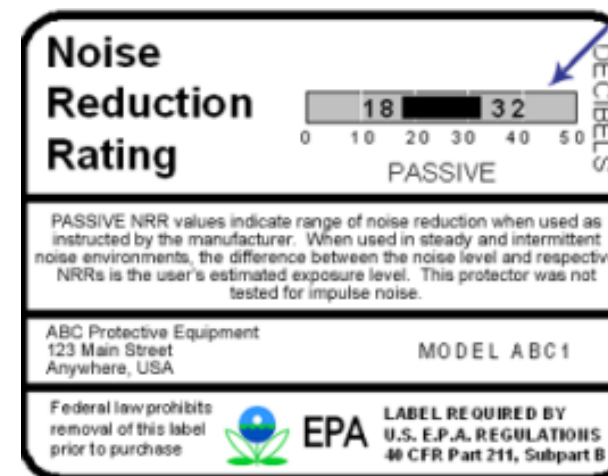
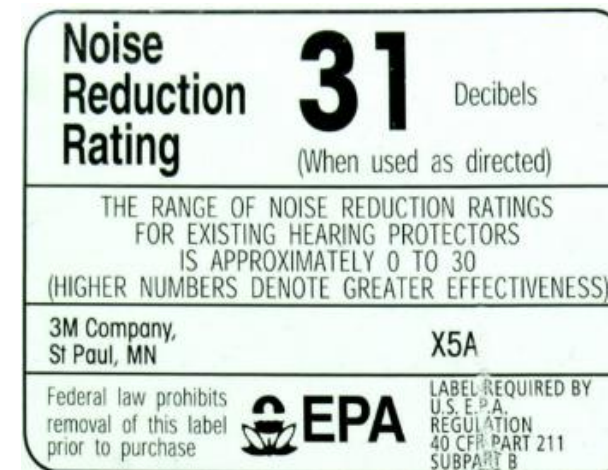


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# HPDs and NRRs

- Hearing protective devices (HPDs)
  - When required
  - Hearing protector attenuation
  - Provided at no cost to employee
  - Variety of choices
  - Proper fit
  - Training
- Noise reduction ratings (NRRs)



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# Training

- Annual and tailored
- Per (1910.95(k)) must include:
  - Effects of noise on hearing
  - Purpose of hearing protectors
  - Advantages, disadvantages, and attenuation of various types of protectors
  - Instructions on selection, fitting, use, and care
  - Purpose of audiometric testing and an explanation of test procedures



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# Recordkeeping and Recordability

- Recordkeeping – 1910.95(m)
  - Surveys - Maintained for two years
  - Tests – Maintained for employment
  - Reviewed annually
- OSHA Recordability - (1904.10(a))
  - Work-related (1904.5(b)(2))
  - Standard Threshold Shifts (STSs)
  - Age adjustments (Appendix F)

## SAFETY MANAGEMENT SUITE



Use the J. J. Keller® **INCIDENT CENTER** to effortlessly evaluate injuries, illnesses, near misses, property damage, equipment failure, safety observations, and more.



# Evaluate and Update



- Noise surveys for risk assessments
- Exposed employees accounted for
- Baseline and annual audiometric tests
- Employee access to information and training materials
- Comprehensive and understandable training



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# Costs of NOT protecting workers

- Worker's Compensation
- Absenteeism
- Productivity
- Quality or Rework
- Employee Morale
- Training
- OSHA or other Regulatory Fines
- Company reputation



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the businesses they run.™*

Safety  
Management  
Suite

Compliance  
Network

Encompass

VideoProtects

# Questions?



# Thank You!