



# OSHA Regulations (Standards - 29 CFR) OSHA Respirator Medical Evaluation Questionnaire (Mandatory). - 1910.134 App C

◀ OSHA Regulations (Standards - 29 CFR) - Table of Contents

- **Standard Number:** 1910.134 App C
- **Standard Title:** OSHA Respirator Medical Evaluation Questionnaire (Mandatory).
- **SubPart Number:** I
- **SubPart Title:** Personal Protective Equipment



## Appendix C to Sec. 1910.134: OSHA Respirator Medical Evaluation Questionnaire (Mandatory)

To the employer: Answers to questions in Section 1, and to question 9 in Section 2 of Part A, do not require a medical examination.

To the employee:

Can you read (circle one): Yes/No

Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.

Part A. Section 1. (Mandatory) The following information must be provided by every employee who has been selected to use any type of respirator (please print).

1. Today's date: \_\_\_\_\_
2. Your name: \_\_\_\_\_
3. Your age (to nearest year): \_\_\_\_\_
4. Sex (circle one): Male/Female
5. Your height: \_\_\_\_\_ ft. \_\_\_\_\_ in.
6. Your weight: \_\_\_\_\_ lbs.
7. Your job title: \_\_\_\_\_
8. A phone number where you can be reached by the health care professional who reviews this questionnaire (include the Area Code): \_\_\_\_\_
9. The best time to phone you at this number: \_\_\_\_\_

10. Has your employer told you how to contact the health care professional who will review this questionnaire (circle one): Yes/No

11. Check the type of respirator you will use (you can check more than one category):

- a. \_\_\_\_\_ N, R, or P disposable respirator (filter-mask, non- cartridge type only).
- b. \_\_\_\_\_ Other type (for example, half- or full-facepiece type, powered-air purifying, supplied-air, self-contained breathing apparatus).

12. Have you worn a respirator (circle one): Yes/No

If "yes," what type(s): \_\_\_\_\_

Part A. Section 2. (Mandatory) Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator (please circle "yes" or "no").

1. Do you **currently** smoke tobacco, or have you smoked tobacco in the last month: Yes/No

2. Have you **ever had** any of the following conditions?

- a. Seizures (fits): Yes/No
- b. Diabetes (sugar disease): Yes/No
- c. Allergic reactions that interfere with your breathing: Yes/No
- d. Claustrophobia (fear of closed-in places): Yes/No
- e. Trouble smelling odors: Yes/No

3. Have you **ever had** any of the following pulmonary or lung problems?

- a. Asbestosis: Yes/No
- b. Asthma: Yes/No
- c. Chronic bronchitis: Yes/No
- d. Emphysema: Yes/No
- e. Pneumonia: Yes/No
- f. Tuberculosis: Yes/No
- g. Silicosis: Yes/No
- h. Pneumothorax (collapsed lung): Yes/No
- i. Lung cancer: Yes/No
- j. Broken ribs: Yes/No
- k. Any chest injuries or surgeries: Yes/No
- l. Any other lung problem that you've been told about: Yes/No

4. Do you **currently** have any of the following symptoms of pulmonary or lung illness?

- a. Shortness of breath: Yes/No
- b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline: Yes/No
- c. Shortness of breath when walking with other people at an ordinary pace on level ground: Yes/No
- d. Have to stop for breath when walking at your own pace on level ground: Yes/No
- e. Shortness of breath when washing or dressing yourself: Yes/No
- f. Shortness of breath that interferes with your job: Yes/No
- g. Coughing that produces phlegm (thick sputum): Yes/No
- h. Coughing that wakes you early in the morning: Yes/No
- i. Coughing that occurs mostly when you are lying down: Yes/No
- j. Coughing up blood in the last month: Yes/No
- k. Wheezing: Yes/No
- l. Wheezing that interferes with your job: Yes/No
- m. Chest pain when you breathe deeply: Yes/No
- n. Any other symptoms that you think may be related to lung problems: Yes/No

5. Have you **ever had** any of the following cardiovascular or heart problems?

- a. Heart attack: Yes/No
- b. Stroke: Yes/No
- c. Angina: Yes/No
- d. Heart failure: Yes/No
- e. Swelling in your legs or feet (not caused by walking): Yes/No
- f. Heart arrhythmia (heart beating irregularly): Yes/No
- g. High blood pressure: Yes/No
- h. Any other heart problem that you've been told about: Yes/No

6. Have you **ever had** any of the following cardiovascular or heart symptoms?

- a. Frequent pain or tightness in your chest: Yes/No
- b. Pain or tightness in your chest during physical activity: Yes/No
- c. Pain or tightness in your chest that interferes with your job: Yes/No
- d. In the past two years, have you noticed your heart skipping or missing a beat: Yes/No
- e. Heartburn or indigestion that is not related to eating: Yes/ No
- f. Any other symptoms that you think may be related to heart or circulation problems: Yes/No

7. Do you **currently** take medication for any of the following problems?

- a. Breathing or lung problems: Yes/No
- b. Heart trouble: Yes/No
- c. Blood pressure: Yes/No
- d. Seizures (fits): Yes/No

8. If you've used a respirator, have you **ever had** any of the following problems? (If you've never used a respirator, check the following space and go to question 9:)

- a. Eye irritation: Yes/No
- b. Skin allergies or rashes: Yes/No
- c. Anxiety: Yes/No
- d. General weakness or fatigue: Yes/No
- e. Any other problem that interferes with your use of a respirator: Yes/No

9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire: Yes/No

Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

10. Have you **ever lost** vision in either eye (temporarily or permanently): Yes/No

11. Do you **currently** have any of the following vision problems?

- a. Wear contact lenses: Yes/No
- b. Wear glasses: Yes/No
- c. Color blind: Yes/No
- d. Any other eye or vision problem: Yes/No

12. Have you **ever had** an injury to your ears, including a broken ear drum: Yes/No

13. Do you **currently** have any of the following hearing problems?

- a. Difficulty hearing: Yes/No
- b. Wear a hearing aid: Yes/No
- c. Any other hearing or ear problem: Yes/No

14. Have you **ever had** a back injury: Yes/No

15. Do you **currently** have any of the following musculoskeletal problems?

- a. Weakness in any of your arms, hands, legs, or feet: Yes/No
- b. Back pain: Yes/No
- c. Difficulty fully moving your arms and legs: Yes/No
- d. Pain or stiffness when you lean forward or backward at the waist: Yes/No
- e. Difficulty fully moving your head up or down: Yes/No
- f. Difficulty fully moving your head side to side: Yes/No
- g. Difficulty bending at your knees: Yes/No
- h. Difficulty squatting to the ground: Yes/No
- i. Climbing a flight of stairs or a ladder carrying more than 25 lbs: Yes/No
- j. Any other muscle or skeletal problem that interferes with using a respirator: Yes/No

Part B Any of the following questions, and other questions not listed, may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.

1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen: Yes/No

If "yes," do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you're working under these conditions: Yes/No

2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemicals: Yes/No

If "yes," name the chemicals if you know them: \_\_\_\_\_

\_\_\_\_\_

3. Have you ever worked with any of the materials, or under any of the conditions, listed below:

- a. Asbestos: Yes/No
- b. Silica (e.g., in sandblasting): Yes/No
- c. Tungsten/cobalt (e.g., grinding or welding this material): Yes/No
- d. Beryllium: Yes/No
- e. Aluminum: Yes/No
- f. Coal (for example, mining): Yes/No
- g. Iron: Yes/No
- h. Tin: Yes/No
- i. Dusty environments: Yes/No
- j. Any other hazardous exposures: Yes/No

If "yes," describe these exposures: \_\_\_\_\_

\_\_\_\_\_

4. List any second jobs or side businesses you have: \_\_\_\_\_

\_\_\_\_\_

5. List your previous occupations: \_\_\_\_\_

\_\_\_\_\_

6. List your current and previous hobbies: \_\_\_\_\_

\_\_\_\_\_

7. Have you been in the military services? Yes/No

If "yes," were you exposed to biological or chemical agents (either in training or combat): Yes/No

8. Have you ever worked on a HAZMAT team? Yes/No

9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications): Yes/No

If "yes," name the medications if you know them: \_\_\_\_\_

10. Will you be using any of the following items with your respirator(s)?

- a. HEPA Filters: Yes/No
- b. Canisters (for example, gas masks): Yes/No
- c. Cartridges: Yes/No

11. How often are you expected to use the respirator(s) (circle "yes" or "no" for all answers that apply to you)?:

- a. Escape only (no rescue): Yes/No
- b. Emergency rescue only: Yes/No
- c. Less than 5 hours **per week**: Yes/No
- d. Less than 2 hours **per day**: Yes/No
- e. 2 to 4 hours per day: Yes/No
- f. Over 4 hours per day: Yes/No

12. During the period you are using the respirator(s), is your work effort:

- a. **Light** (less than 200 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift: \_\_\_\_\_ hrs. \_\_\_\_\_ mins.

Examples of a light work effort are **sitting** while writing, typing, drafting, or performing light assembly work; or **standing** while operating a drill press (1-3 lbs.) or controlling machines.

- b. **Moderate** (200 to 350 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift: \_\_\_\_\_ hrs. \_\_\_\_\_ mins.

Examples of moderate work effort are **sitting** while nailing or filing; **driving** a truck or bus in urban traffic; **standing** while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; **walking** on a level surface about 2 mph or down a 5-degree grade about 3 mph; or **pushing** a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.

- c. **Heavy** (above 350 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift: \_\_\_\_\_ hrs. \_\_\_\_\_ mins.

Examples of heavy work are **lifting** a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; **shoveling**; **standing** while bricklaying or chipping castings; **walking** up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.).

13. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator: Yes/No

If "yes," describe this protective clothing and/or equipment: \_\_\_\_\_

14. Will you be working under hot conditions (temperature exceeding 77 deg. F): Yes/No

15. Will you be working under humid conditions: Yes/No

16. Describe the work you'll be doing while you're using your respirator(s):  
\_\_\_\_\_  
\_\_\_\_\_

17. Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined spaces, life-threatening gases):  
\_\_\_\_\_  
\_\_\_\_\_

18. Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator(s):

Name of the first toxic substance: \_\_\_\_\_

Estimated maximum exposure level per shift: \_\_\_\_\_

Duration of exposure per shift: \_\_\_\_\_

Name of the second toxic substance: \_\_\_\_\_

Estimated maximum exposure level per shift: \_\_\_\_\_

Duration of exposure per shift: \_\_\_\_\_

Name of the third toxic substance: \_\_\_\_\_

Estimated maximum exposure level per shift: \_\_\_\_\_

Duration of exposure per shift: \_\_\_\_\_

The name of any other toxic substances that you'll be exposed to while using your respirator:  
\_\_\_\_\_  
\_\_\_\_\_

19. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others (for example, rescue, security):  
\_\_\_\_\_  
\_\_\_\_\_

[63 FR 1152, Jan. 8, 1998; 63 FR 20098, April 23, 1998]

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# SEPARATION LETTER

NAME: \_\_\_\_\_ SSN: \_\_\_\_\_ DATE: \_\_\_\_\_

You have been enrolled in the Coast Guard's OCCUPATIONAL MEDICAL SURVEILLANCE AND EVALUATION PROGRAM (OMSEP). During the past \_\_\_\_\_ years you received periodic physical examinations based on Occupational Health Safety Organization (OSHA) protocols for the following known potentially hazardous exposures:

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Your occupational (work-related) history also indicates suspected exposure to the following agents:

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At the time of your EXIT/SEPARATION medical examination you were found to be in good health with no evidence occupational induced disease. However, it is recommended that you continue to receive medical examinations on a periodic basis based on age indicated guidelines. In addition, the periodicity of the examination should be modified to allow for adequate detection and prompt intervention on disease processes resulting from the latent effects of occupational hazardous substances. Your medical provider should follow OSHA mandated recommendations, for the aforementioned hazardous substances, in determining the frequency and level of care that you require.

NOTE: if a member is found to have an occupational related disease process at the time of separation, indicated medical referral measures will be instituted.

Any questions relating to this member's occupational health history can be obtained by contacting the US Coast Guard's Office of Safety and Environmental Health at # 202-267-1883.

\_\_\_\_\_  
Medical officer signature

NOTIFICATION OF SUMMARY RESULTS: OCCUPATIONAL MEDICAL SURVEILLANCE AND  
EVALUATION EXAMINATION

Date of Examination: \_\_\_\_\_

Patient: \_\_\_\_\_ SS#: \_\_\_\_\_

Address: \_\_\_\_\_

Phone # \_\_\_\_\_

Reference. (a) COMDTINST M.6000.series (Coast Guard Medical Manual)

1) An environmental health evaluation has determined that you are exposed to the following health hazards at your workplace:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2) Your physical examination was conducted in accordance to reference (a).  
There **ARE / ARE NOT** abnormalities in your physical examination and laboratory testing.

NOTED ABNORMAL PHYSICAL FINDINGS OR LABORATORY TESTS	RESULT/INTERPRETATION

3) Additional comments on your Occupational Medical Surveillance and Evaluation physical

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Signature and Title of Health Care Provider: \_\_\_\_\_

Date: \_\_\_\_\_

FIGURE 12-B-1

**ACUTE CHEMICAL EXPOSURE INFORMATION**

1. Name(s) of chemical(s): \_\_\_\_\_

2. CAS number(s), if known: \_\_\_\_\_

3. Physical form:       Solid       Liquid       Solid       Liquid       Solid       Liquid  
                                  Gas/Vapor       Gas/Vapor       Gas/Vapor       Gas/Vapor       Gas/Vapor       Gas/Vapor  
                                  Aerosol       Aerosol       Aerosol       Aerosol       Aerosol       Aerosol

4. Chemical form:       Acid       Alkali       Acid       Alkali       Acid       Alkali  
                                  Organic solvent       Organic solvent       Organic solvent       Organic solvent       Organic solvent       Organic solvent

5. Modes or routes of exposure:       Inhalation       Inhalation       Inhalation  
                                  Ingestion       Ingestion       Ingestion  
                                  Skin       Skin       Skin

6. Exposure date, time & duration:      Date/time \_\_\_\_\_      Date/time \_\_\_\_\_      Date/time \_\_\_\_\_  
                                 Duration \_\_\_\_\_ minutes      Duration \_\_\_\_\_ minutes      Duration \_\_\_\_\_ minutes

7. Personnel involved:      Last Name, First Name, M.I.      Rank/Rate      SSN  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

8. Observed symptoms: \_\_\_\_\_

9. Associated injuries: \_\_\_\_\_

10. Brief description of the incident: \_\_\_\_\_

Contact ATSDR emergency response line at 404-649-0615 to obtain further guidance.

11. ATSDR guidance:      Prescribed tests:      Time limits for specimens      Other

Notify District/ISC Safety & Environmental Health Officer, cognizant MLC(kse), and G-WKH-3.

12. Further guidance received: \_\_\_\_\_

Attach Material Safety Data Sheet (MSDS) and shipping manifest to this form, if available.  
(Use reverse for continuation or reporting of additional information.)



# REQUEST TO DEACTIVATE FROM HEARING CONSERVATION PROGRAM

Unit: \_\_\_\_\_ Date: \_\_\_\_\_

Member's Name: \_\_\_\_\_ SSN: \_\_\_\_\_

\*\*\*\*\*  
Reference: COMDTINST M6000.1B, Chap. 12, Sec.12-F-8 to 12-F-9.  
\*\*\*\*\*  
(Please circle as appropriate)

1. Does the member work in a noise hazardous environment? Yes / No  
If yes, how long? years \_\_\_\_\_ and months \_\_\_\_\_.
2. When was the last time a member worked in a noise hazardous environment in excess of 30 days for a period of 8 hours a day? years \_\_\_\_\_ and months \_\_\_\_\_.
3. Enclose copies of audiogram strips from the date(s) indicated above.
4. Does audiograms exceed 35 dB in any of the speech frequencies? Yes / No  
(500, 1000, 2000, or 3000 Hz)

Remarks:

~ (Provide substantiating remarks for deactivation if any of the answers above are "No").

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Forward this form and enclosed information to:

Commander (seh)  
MLCA - detached  
100 MacArthur Causeway  
Miami Beach, FL 33139-5190

**HEARING CONSERVATION DATA**

(This form is subject to the Privacy Act of 1974 - use Blanket PAS - DD Form 2005)

1. ZIP CODE: APO/FFO/PAS

<b>2. DOD COMPONENT</b> A - ARMY      F - AIR FORCE      1 - OTHER DOD N - NAVY      M - MARINE CORPS      ACTIVITY	<b>3. SERVICE COMPONENT</b> R - REGULAR      G - NATIONAL GUARD V - RESERVE      1 - OTHER
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4. SOCIAL SECURITY NUMBER	5. NAME (Last, First, Middle Initial)	6. DATE OF BIRTH Y Y M M D D	7. SEX M - MALE F - FEMALE
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8. PAY GRADE UNIFORMED SERVICES	9. PAY GRADE CIVILIAN	10. SERVICE DUTY OCCUPATION CODE	11. MAILING ADDRESS OF ASSIGNMENT
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12. LOCATION - PLACE OF WORK	13. MAJOR COMMAND	14. DUTY TELEPHONE (include area code)
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15. AUDIOMETRY	a. PURPOSE	1 - 90 DAY	2 - ANNUAL	3 - TERMINATION	4 - OTHER								
AUDIOMETRIC DATA RE: ANSI S3.8 - 1988		LEFT				RIGHT							
		500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
b. CURRENT AUDIOGRAM DATE		Y Y M M D D											
c. REFERENCE AUDIOGRAM DATE		Y Y M M D D											
d. SIGNIFICANT THRESHOLD SHIFT (STS)		1 - NO    2 - YES		e. THRESHOLD SHIFT									
f. REMARKS (Include exposure data)												g. TYPE OF PERSONAL HEARING PROTECTION USED 1 - SINGLE FLANGE (VSTR)    5 - NOISE MUFFS 2 - TRIPLE FLANGE            6 - OTHER 3 - HAND FORMED EARPLUGS 4 - EAR CANAL CAPS	

h. EXAMINER NAME (Last, First, Middle Initial)	i. TRAINING CERTIFICATE NO.	j. SERVICE DUTY OCCUPATION CODE	k. OFFICE SYMBOL
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l. AUDIOMETER TYPE	m. MODEL	n. MANUFACTURER	o. SERIAL NUMBER	p. LAST ELECTROACOUSTIC CALIBRATION DATE Y Y M M D D
1 - MANUAL 2 - SELF-RECORDING (Automatic) 3 - MICROPROCESSOR				

16. FOLLOWUP NO. 1	q. MINIMUM 14 HOURS NOISE FREE SINCE CURRENT AUDIOGRAM (See item 15.b.)												
AUDIOMETRIC DATA RE: ANSI S3.8 - 1988		LEFT				RIGHT							
		500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
b. CURRENT AUDIOGRAM DATE		Y Y M M D D											
c. REFERENCE AUDIOGRAM DATE		Y Y M M D D											
d. SIGNIFICANT THRESHOLD SHIFT (STS)		1 - NO    2 - YES		e. THRESHOLD SHIFT									

f. EXAMINER NAME (Last, First, Middle Initial)	g. TRAINING CERTIFICATE NO.	h. SERVICE DUTY OCCUPATION CODE	i. OFFICE SYMBOL
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j. AUDIOMETER TYPE	k. MODEL	l. MANUFACTURER	m. SERIAL NUMBER	n. LAST ELECTROACOUSTIC CALIBRATION DATE Y Y M M D D
1 - MANUAL 2 - SELF-RECORDING (Automatic) 3 - MICROPROCESSOR				

17. FOLLOWUP NO. 2	o. MINIMUM 14 HOURS NOISE FREE SINCE CURRENT AUDIOGRAM (See item 15.b.)												
AUDIOMETRIC DATA RE: ANSI S3.8 - 1988		LEFT				RIGHT							
		500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
b. CURRENT AUDIOGRAM DATE		Y Y M M D D											
c. REFERENCE AUDIOGRAM DATE		Y Y M M D D											
d. SIGNIFICANT THRESHOLD SHIFT (STS)		1 - NO    2 - YES		e. THRESHOLD SHIFT									

f. EXAMINER NAME (Last, First, Middle Initial)	g. TRAINING CERTIFICATE NO.	h. SERVICE DUTY OCCUPATION CODE	i. OFFICE SYMBOL
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j. AUDIOMETER TYPE	k. MODEL	l. MANUFACTURER	m. SERIAL NUMBER	n. LAST ELECTROACOUSTIC CALIBRATION DATE Y Y M M D D
1 - MANUAL 2 - SELF-RECORDING (Automatic) 3 - MICROPROCESSOR				



## AUDIOLOGY HISTORY QUESTIONNAIRE

### Hearing Conservation Program (HCP) Audiograms Only

<b>NAME</b>	<b>SOCIAL SECURITY NUMBER</b>	<b>STATUS</b>
_____	_____	Active Duty <input type="checkbox"/>
LAST                      FIRST                      MI	_____	Civ. Emp. <input type="checkbox"/>
		Reserve <input type="checkbox"/>

Answer with a check (✓) if statement applies to you.

DATE (MMYY)

**1. In the last year have you experienced?**

<b>Difficulty understanding speech—</b>	/ / / / / / / / / / / / / /												
Under all circumstances													
In background noise													
On telephone													
<b>Ringing in ears—</b>													
Constant													
Intermittent													
High-pitched ring													
Low-pitched buzz													
Dizzy spells (spinning)													
Presence or persistence of ear pain													
Rapidly progressing hearing loss													
Feeling of fullness or discomfort in either ear													

**2. History of:**

Chronic ear infection													
Eardrum rupture													
Sudden or fluctuating hearing loss													
Ear or head surgery													
Skull fracture													
Taking drugs affecting hearing													
Hearing aid use													
Poor hearing in one ear													
Exposure to high levels of job noise without protection													
Relevant medical problems													

**3. Recreational noise exposure:**

Firearm use (hunting)													
Drag racing/motorcycle riding													
Power tool use (mowers, saws, etc.)													
Amplified music (concerts)													
Walkman/headset use													
Other high noise exposure													
Do you wear hearing protection when needed?													

Do you wear hearing protection, both on and off the job, when appropriate?

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Medical Officer Review (Initials)

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Provide background information to statements with (✓) when appropriate on SF-600.

# ASBESTOS EXPOSURE PART I - INITIAL MEDICAL QUESTIONNAIRE

## IDENTIFICATION

1. NAME (Last, first, middle initial)	2. SOCIAL SECURITY NO. (1-9)	3. CLOCK NO. (10-15)	4. PRESENT OCCUPATION
5. NAME OF PLANT	6. STREET ADDRESS OF PLANT	7. PLANT CITY, STATE AND ZIP CODE	8. TELEPHONE NUMBER
9. NAME OF INTERVIEWER	10. DATE OF INTERVIEW (16-21) <small>(MM/DD/YY)</small>	11. DATE OF BIRTH (22-29) <small>(MM/DD/YY)</small>	12. PLACE OF BIRTH
13. SEX (X one) a. MALE b. FEMALE	14. MARITAL STATUS (X one) a. SINGLE c. WIDOWED	b. MARRIED d. DIVORCED/SEPARATED	15. RACE (X one) a. WHITE b. BLACK c. ASIAN d. HISPANIC e. INDIAN f. OTHER
<b>MEDICAL DATA</b>			
16. HIGHEST GRADE COMPLETED IN SCHOOL			

## 17. OCCUPATIONAL HISTORY

a. HAVE YOU EVER WORKED FULL TIME (30 hours per week or more) FOR SIX MONTHS OR MORE?	Yes	No	N/A	N/A
b. IF YES, HAVE YOU EVER WORKED FOR A YEAR OR MORE IN ANY DUSTY JOB? *If yes, complete (1)-(3)	*			
(1) Specify Job/Industry	(2) Total years worked	(3) Dust Exposure (X one) MILD MODERATE SEVERE		
c. HAVE YOU EVER BEEN EXPOSED TO GAS OR CHEMICAL FUMES IN YOUR WORK? *If yes, complete (1)-(3)	*			
(1) Specify Job/Industry	(2) Total years worked	(3) Exposure (X one) MILD MODERATE SEVERE		

## 18. MEDICAL HISTORY

a. DO YOU CONSIDER YOURSELF TO BE IN GOOD HEALTH? *If No, state reason.	Yes	No	N/A	N/A
b. HAVE YOU ANY DEFECT OF VISION? *If yes, state nature of defect.	*			
c. HAVE YOU ANY HEARING DEFECT? *If yes, state nature of defect.	*			
d. ARE YOU SUFFERING FROM OR HAVE YOU EVER SUFFERED FROM				
(1) Epilepsy (or fits, seizures or convulsions)				
(2) Rheumatic Fever				
(3) Kidney Disease				
(4) Bladder Disease				
(5) Diabetes				
(6) Jaundice				

## 19. IF YOU GET A COLD, DOES IT USUALLY GO TO YOUR CHEST? (Usually means more than 1/2 of the time) \*Don't get colds

a. DURING THE PAST THREE YEARS, HAVE YOU HAD ANY CHEST ILLNESSES THAT HAVE KEPT YOU OFF WORK, INDOORS AT HOME, OR IN BED?	Yes	No	N/A	N/A
b. IF YES, DID YOU PRODUCE PHEGM WITH ANY OF THESE ILLNESSES?				
c. IN THE LAST THREE YEARS, HOW MANY SUCH ILLNESSES WITH INCREASED PHEGM DID YOU HAVE WHICH LASTED A WEEK OR MORE? (List number)				

## 20. CHEST ILLNESSES

a. DURING THE PAST THREE YEARS, HAVE YOU HAD ANY CHEST ILLNESSES THAT HAVE KEPT YOU OFF WORK, INDOORS AT HOME, OR IN BED?	Yes	No	N/A	N/A
b. IF YES, DID YOU PRODUCE PHEGM WITH ANY OF THESE ILLNESSES?				
c. IN THE LAST THREE YEARS, HOW MANY SUCH ILLNESSES WITH INCREASED PHEGM DID YOU HAVE WHICH LASTED A WEEK OR MORE? (List number)				

## 21. DID YOU HAVE ANY LUNG TROUBLE BEFORE THE AGE OF 16?

a. DURING THE PAST THREE YEARS, HAVE YOU HAD ANY CHEST ILLNESSES THAT HAVE KEPT YOU OFF WORK, INDOORS AT HOME, OR IN BED?	Yes	No	N/A	N/A
b. IF YES, DID YOU PRODUCE PHEGM WITH ANY OF THESE ILLNESSES?				
c. IN THE LAST THREE YEARS, HOW MANY SUCH ILLNESSES WITH INCREASED PHEGM DID YOU HAVE WHICH LASTED A WEEK OR MORE? (List number)				

## 22. HAVE YOU EVER HAD ANY OF THE FOLLOWING?

a. ATTACKS OF BRONCHITIS * If yes, complete (1) and (2)	Yes	No	N/A	N/A
(1) Age at first attack				
(2) Was it confirmed by a doctor?				
b. ATTACKS OF PNEUMONIA (Include bronchopneumonia) * If yes, complete (1) and (2)	*			
(1) Age at first attack				
(2) Was it confirmed by a doctor?				
c. HAY FEVER * If yes, complete (1) and (2)	*			
(1) Age at first attack				
(2) Was it confirmed by a doctor?				

# ASBESTOS EXPOSURE PART II - PERIODIC MEDICAL QUESTIONNAIRE

## IDENTIFICATION

1. NAME (Last, first, middle initial)	2. SOCIAL SECURITY NO. (1-9)	3. CLOCK NO. (10-15)	4. PRESENT OCCUPATION
5. NAME OF PLANT	6. STREET ADDRESS OF PLANT	7. PLANT CITY, STATE AND ZIP CODE	
9. NAME OF INTERVIEWER	10. DATE OF INTERVIEW (16-27) (MMDDYY)	11. MARITAL STATUS (X one) a. SINGLE    b. MARRIED    c. WIDOWED    d. DIVORCED/SEPARATED	
<b>MEDICAL DATA</b>			

12. OCCUPATIONAL HISTORY				Yes	No	N/A	16. RESPIRATORY SYSTEM									
a. IN THE PAST YEAR, DID YOU WORK FULL TIME (30 hours per week or more) FOR SIX MONTHS OR MORE?							a. IN THE PAST YEAR, HAVE YOU HAD				Yes*	No	b. DO YOU HAVE		Yes*	No
b. DID YOU WORK AT ANY DUSTY JOB DURING THE PAST YEAR? *If Yes, complete c.				*			(1) Asthma						(1) Frequent Colds			
c. WAS EXPOSURE (X one)				MILD	MODERATE	SEVERE	(2) Bronchitis						(2) Chronic Cough			
d. IN THE PAST YEAR, WERE YOU EXPOSED TO GAS OR CHEMICAL FUMES IN YOUR WORK? *If Yes, complete e.						*	(3) Hay Fever						(3) Shortness of breath when walking or climbing one flight of stairs			
e. WAS EXPOSURE: (X one)				MILD	MODERATE	SEVERE	(4) Other Allergies						c. DO YOU			
f. IN THE PAST YEAR, WHAT WAS YOUR							(5) Pneumonia						(1) Wheeze			
(1) Job Occupation							(6) Tuberculosis						(2) Cough up phlegm			
(2) Position/Job Title							(7) Chest Surgery						(3) Smoke cigarettes			
							(8) Other Lung Problems						Packs per Day			
							(9) Heart Disease						No. of Years			

\*FURTHER COMMENT ON POSITIVE ANSWERS

13. MEDICAL HISTORY										
a. DO YOU CONSIDER YOURSELF TO BE IN GOOD HEALTH? *If No, state reason						*				
d. IN THE PAST YEAR, HAVE YOU DEVELOPED										
(1) Epilepsy (or fits, seizures or convulsions)										
(2) Rheumatic Fever										
(3) Kidney Disease										
(4) Bladder Disease										
(5) Diabetes										
(6) Jaundice										
(7) Cancer										
14. IF YOU GET A COLD, DOES IT USUALLY GO TO YOUR CHEST? (usually means more than 1/2 of the time) *Don't get colds						*				
15. CHEST ILLNESSES										
a. DURING THE PAST YEAR, HAVE YOU HAD ANY CHEST ILLNESSES THAT HAVE KEPT YOU OFF WORK, INDOORS AT HOME, OR IN BED?										
b. IF YES, DID YOU PRODUCE PHEGM WITH ANY OF THESE ILLNESSES?										
c. IN THE LAST YEAR, HOW MANY SUCH ILLNESSES WITH INCREASED PHEGM DID YOU HAVE WHICH LASTED A WEEK OR MORE? (List number)										
17. SIGNATURE										
18. DATE SIGNED										

MEDICAL QUESTIONNAIRE FOR RESPIRATOR USERS

NAME \_\_\_\_\_ SSN \_\_\_\_\_  
 DATE \_\_\_\_\_ . AGE \_\_\_\_\_ . HEIGHT \_\_\_\_\_ . WEIGHT \_\_\_\_\_

Have you previously worn a respirator ? \_\_\_\_\_ YES. \_\_\_\_\_ NO.  
 If YES, describe any apparent difficulties that you experienced.

	YES	NO
In the past, have you had a prolonged absence from work due to an illness or major surgery? ....	___	___
Do you experience shortness of breath or difficulty breathing when walking at a fast pace or up a slight incline? .....	___	___
Are you taking any medications? (Prescription or OTC)	___	___

Have you had or do you now have any of the following conditions or personal history of:

- |   |     |     |
|---|-----|-----|
| 1. Lung or respiratory disease (COPD, Bronchitis)   | ___ | ___ |
| 2. Persistent cough   | ___ | ___ |
| 3. Allergies (Asthma, Hay Fever, Exzema)  | ___ | ___ |
| 4. Smoking, former/current, (packs per day)   | ___ | ___ |
| 5. Chest pain, Angina, Palpitations   | ___ | ___ |
| 6 High Blood Pressure   | ___ | ___ |
| 7. Heart Attack   | ___ | ___ |
| 8. Diabetes   | ___ | ___ |
| 9. Epilepsy (Seizure Disorder)  | ___ | ___ |
| 10. Mental/Emotional Illness  | ___ | ___ |
| 11. Fear of tight or enclosed spaces  | ___ | ___ |
| 12. Sensation of smothering   | ___ | ___ |
| 13. Heat Exhaustion or heat stroke  | ___ | ___ |
| 14. Defective hearing   | ___ | ___ |
| 15. Use of contact lens or eye glasses  | ___ | ___ |
| 16 Sensitivity/adverse reaction to any chemical(s)  | ___ | ___ |
| 17. Back injury   | ___ | ___ |
| 16. Other conditions that might interfere with respirator use or result in limited work ability | ___ | ___ |

Please explain the "YES" answers \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

I understand the questions above and have answered them truthfully and to the best of my knowledge.

\_\_\_\_\_  
 SIGNATURE OF EMPLOYEE

\_\_\_\_\_  
 DATE



# RESPIRATOR FIT TEST RECORD

Name: \_\_\_\_\_ Date: \_\_\_\_\_  
(last, first, middle initial)

SSN: \_\_\_\_\_ Age: \_\_\_\_\_ Sex:  M  /  F

Respiratory Hazards Encountered: \_\_\_\_\_

Date of "Medical Questionnaire for Respirator Users": \_\_\_\_\_

Date of Respirator Training: \_\_\_\_\_

Qualitative Fit Test Agent, Cartridge/Filter:

Isoamyl Acetate (banana oil) \_\_\_\_\_ (Organic Vapor cartridge)

Saccharin Mist (sweet): \_\_\_\_\_ (Particulate filter) \*

Bitrex (bitter): \_\_\_\_\_ (Particulate filter) \*

\* # of squeezes for taste response: 10 \_\_\_\_\_ 20 \_\_\_\_\_ 30 \_\_\_\_\_

\* The test subject may not eat, drink (except plain water), smoke, or chew gum for 15 mins before these tests. During the fit test, every 30 seconds the aerosol concentration shall be replenished using one half the original number of squeezes used initially (taste response).

Exercises Used: Each shall be performed for 1 minute

_____ Normal Breathing	_____ Talking - e.g. Rainbow Passage
_____ Deep Breathing	_____ Bending Over
_____ Head Side-to-Side (inhale @ extremes)	_____ Normal Breathing
_____ Head Up-and-Down (inhale @ up position)	

Respirator (Manufacturer/model): \_\_\_\_\_

Size (S/M/L): \_\_\_\_\_

Half-face (protection factor = 10): \_\_\_\_\_ -OR- Full-face (protection factor = 50): \_\_\_\_\_

Conditions which might affect fit:

_____ Claustrophobic	_____ Dentures	_____ Facial Hair
_____ Glasses	_____ Contact Lenses	_____ Broken/Crooked Nose
_____ Unusual Facial Dimensions		_____ Other:

Comments: \_\_\_\_\_

Fit Test Performed By: \_\_\_\_\_ Date: \_\_\_\_\_

Respirator user signature: \_\_\_\_\_

Name \_\_\_\_\_ SSN \_\_\_\_\_

Duty Station \_\_\_\_\_ Supervisor \_\_\_\_\_

Date \_\_\_\_\_ Age \_\_\_\_\_ Height \_\_\_\_\_ Weight \_\_\_\_\_

Have you ever worn a respirator? YES \_\_\_\_\_ NO \_\_\_\_\_

If YES, describe any difficulties noted with respirator use:

\_\_\_\_\_

Have you had or do you now have one of the following?

	YES	NO
Breathing or lung problems	_____	_____
Persistent cough	_____	_____
Heart trouble	_____	_____
History of fainting or seizures	_____	_____
Stroke/High blood pressure	_____	_____
Diabetes	_____	_____
Claustrophobia (fear of closed-in-places)	_____	_____
Heat exhaustion or heat stroke	_____	_____
Allergic reactions that interfere with breathing	_____	_____
Trouble smelling odors	_____	_____
Contact lenses or glasses	_____	_____
Other conditions that might interfere with using a respirator:		

\_\_\_\_\_

Please explain YES answers: \_\_\_\_\_

\_\_\_\_\_

Note: When corrective lenses are required, lens frame mounts inside the mask shall be used. Gas-permeable or soft contact lenses are permitted if they normally do not present problems to the user.

Signature of Member: \_\_\_\_\_ Date: \_\_\_\_\_

Member does / does not require Medical Officer approval for respirator use.

Signature of Reviewer: \_\_\_\_\_ Date: \_\_\_\_\_

## CHAPTER 1

# Recommendations for a Noise Standard

The National Institute for Occupational Safety and Health (NIOSH) recommends the following standard for promulgation by regulatory agencies such as the Occupational Safety and Health Administration (OSHA) and the Mine Safety and Health Administration (MSHA) to protect workers from hearing losses resulting from occupational noise exposure. If this recommended standard is promulgated by a regulatory agency, the mandatory and nonmandatory provisions of the standard are indicated by the words *shall* and *should*, respectively.

## 1.1 Recommended Exposure Limit (REL)

The NIOSH recommended exposure limit (REL) for occupational noise exposure encompasses the provisions in Sections 1.1.1 through 1.1.4. The REL is 85 decibels, A-weighted, as an 8-hr time-weighted average (85 dBA as an 8-hr TWA). Exposures at and above this level are considered hazardous.

### 1.1.1 Exposure Levels and Durations

Occupational noise exposure shall be controlled so that worker exposures are less than the combination of exposure level ( $L$ ) and duration ( $T$ ), as calculated by the following formula (or as shown in Table 1-1).

$$T (\text{min}) = \frac{480}{2^{(L-85)/3}}$$

where 3 = the exchange rate.

### 1.1.2 Time-Weighted Average (TWA)

In accordance with Section 1.1.1, the REL for an 8-hr work shift is a TWA of 85 dBA using a 3-decibel (dB) exchange rate.

### 1.1.3 Daily Noise Dose

When the daily noise exposure consists of periods of different noise levels, the daily dose ( $D$ ) shall not equal or exceed 100, as calculated according to the following formula:

$$D = [C_1/T_1 + C_2/T_2 + \dots + C_n/T_n] \times 100$$

where

$C_n$  = total time of exposure at a specified noise level, and

$T_n$  = exposure duration for which noise at this level becomes hazardous.

The daily dose can be converted into an 8-hr TWA according to the following formula (or as shown in Table 1-2):

$$TWA = 10.0 \times \text{Log}(D/100) + 85$$

**Table 1-1. Combinations of noise exposure levels and durations that no worker exposure shall equal or exceed**

Exposure level, <i>L</i> (dBA)	Duration, <i>T</i>			Exposure level, <i>L</i> (dBA)	Duration, <i>T</i>		
	Hours	Minutes	Seconds		Hours	Minutes	Seconds
80	25	24	—	106	—	3	45
81	20	10	—	107	—	2	59
82	16	—	—	108	—	2	22
83	12	42	—	109	—	1	53
84	10	5	—	110	—	1	29
85	8	—	—	111	—	1	11
86	6	21	—	112	—	—	56
87	5	2	—	113	—	—	45
88	4	—	—	114	—	—	35
89	3	10	—	115	—	—	28
90	2	31	—	116	—	—	22
91	2	—	—	117	—	—	18
92	1	35	—	118	—	—	14
93	1	16	—	119	—	—	11
94	1	—	—	120	—	—	9
95	—	47	37	121	—	—	7
96	—	37	48	122	—	—	6
97	—	30	—	123	—	—	4
98	—	23	49	124	—	—	3
99	—	18	59	125	—	—	3
100	—	15	—	126	—	—	2
101	—	11	54	127	—	—	1
102	—	9	27	128	—	—	1
103	—	7	30	129	—	—	1
104	—	5	57	130-140	—	—	<1
105	—	4	43	—	—	—	—

**Table 1-2. Daily noise dose as an 8-hr TWA\***

Dose (%)	dBA as 8-hr TWA	Dose (%)	dBA as 8-hr TWA	Dose (%)	dBA as 8-hr TWA
20	78.0	2,000	98.0	450,000	121.5
30	79.8	2,500	99.0	500,000	122.0
40	81.0	3,000	99.8	600,000	122.8
50	82.0	3,500	100.4	700,000	123.5
60	82.8	4,000	101.0	800,000	124.0
70	83.5	4,500	101.5	900,000	124.5
80	84.0	5,000	102.0	1,000,000	125.0
90	84.5	6,000	102.8	1,100,000	125.4
100	85.0	7,000	103.5	1,200,000	125.8
110	85.4	8,000	104.0	1,300,000	126.1
120	85.8	9,000	104.5	1,400,000	126.5
130	86.1	10,000	105.0	1,600,000	127.0
140	86.5	12,000	105.8	1,800,000	127.6
150	86.8	14,000	106.5	2,000,000	128.0
170	87.3	16,000	107.0	2,200,000	128.4
200	88.0	18,000	107.6	2,400,000	128.8
250	89.0	20,000	108.0	2,600,000	129.1
300	89.8	25,000	109.0	2,800,000	129.5
350	90.4	30,000	109.8	3,000,000	129.8
400	91.0	35,000	110.4	3,500,000	130.4
450	91.5	40,000	111.0	4,000,000	131.0
500	92.0	45,000	111.5	4,500,000	131.5
550	92.4	50,000	102.0	5,000,000	132.0
600	92.8	60,000	112.8	6,000,000	132.8
650	93.1	70,000	113.5	7,000,000	133.5
700	93.5	80,000	114.0	8,000,000	134.0
750	93.8	90,000	114.5	9,000,000	134.5
800	94.0	100,000	115.0	10,000,000	135.0
900	94.5	110,000	115.4	12,000,000	135.8
1,000	95.0	120,000	115.8	14,000,000	136.5
1,050	95.2	130,000	116.1	16,000,000	137.0
1,100	95.4	140,000	116.5	18,000,000	137.6
1,150	95.6	150,000	116.8	20,000,000	138.0
1,200	95.8	175,000	117.4	22,000,000	138.4
1,300	96.1	200,000	118.0	24,000,000	138.8
1,400	96.5	225,000	118.5	26,000,000	139.0
1,500	96.8	250,000	119.0	28,000,000	139.5
1,600	97.0	275,000	119.4	30,000,000	139.8
1,700	97.3	300,000	119.8	32,500,000	140.1
1,800	97.6	350,000	120.4		
1,900	97.8	400,000	121.0		

\*TWA = 10 × Log(D/100) + 85

#### **1.1.4 Ceiling Limit**

Exposure to continuous, varying, intermittent, or impulsive noise shall not exceed 140 dBA.

### **1.2 Hearing Loss Prevention Program**

The employer shall institute an effective hearing loss prevention program (HLPP) described in Sections 1.3 through 1.11 when any worker's 8-hr TWA exposure equals or exceeds 85 dBA.

### **1.3 Noise Exposure Assessment**

The employer shall conduct a noise exposure assessment when any worker's 8-hr TWA exposure equals or exceeds 85 dBA. Exposure measurements shall conform to the *American National Standard Measurement of Occupational Noise Exposure*, ANSI S12.19-1996 [ANSI 1996a]. Noise exposure is to be measured without regard for the wearing of hearing protectors.

#### **1.3.1 Initial Monitoring**

When a new HLPP is initiated, an initial monitoring of the worksite or of noisy work tasks shall be conducted to determine the noise exposure levels representative of all workers whose 8-hr TWA noise exposures may equal or exceed 85 dBA. For workers remaining in essentially stationary, continuous noise levels, either a sound level meter or a dosimeter may be used. However, for workers who move around frequently or who perform different tasks with intermittent or varying noise levels, a task-based exposure monitoring strategy may provide a more accurate assessment of the extent of exposures.

#### **1.3.2 Periodic Monitoring**

If any worker's 8-hr TWA exposure to noise equals or exceeds 85 dBA, monitoring shall be repeated at least every 2 years. Monitoring shall be repeated within 3 months of the occurrence when there is a change in equipment, production processes or maintenance routines. It may also be prudent to assess noise exposures when work practices have changed and/or if workers are developing significant threshold shifts (see Section 1.6.4).

#### **1.3.3 Instrumentation**

Instruments used to measure workers' noise exposures shall be calibrated to ensure measurement accuracy and, at a minimum, they shall conform to the *American National Standard Specification for Sound Level Meters*, ANSI S1.4-1983 and S1.4A-1985, Type 2 [ANSI 1983, 1985] or, with the exception of the operating range, to the *American National Standard Specification for Personal Noise Dosimeters*, ANSI S1.25-1991 [ANSI 1991a]. If a sound level meter is used, the meter response shall be set at SLOW.

In determining TWA exposures, all continuous, varying, intermittent, and impulsive sound levels from 80 to 140 dBA shall be integrated into the noise measurements.

## 1.4 Engineering and Administrative Controls and Work Practices

To the extent feasible, engineering controls, administrative controls, and work practices shall be used to ensure that workers are not exposed to noise at or above 85 dBA as an 8-hr TWA. The use of administrative controls shall not result in exposing more workers to noise.

## 1.5 Hearing Protectors

Workers shall be required to wear hearing protectors when engaged in work that exposes them to noise that equals or exceeds 85 dBA as an 8-hr TWA.\* The employer shall provide hearing protectors at no cost to the workers.

Hearing protectors shall attenuate noise sufficiently to keep the worker's "real-world" exposure (i.e., the noise exposure at the worker's ear when hearing protectors are worn) below 85 dBA as an 8-hr TWA. Workers whose 8-hr TWA exposures exceed 100 dBA should wear double hearing protection (i.e., they should wear earplugs and earmuffs simultaneously).†

To compensate for known differences between laboratory-derived attenuation values and the protection obtained by a worker in the real world, the labeled noise reduction ratings (NRRs) shall be derated as follows: (1) earmuffs—subtract 25% from the manufacturers' labeled NRR; (2) slow-recovery formable earplugs—subtract 50%; and (3) all other earplugs—subtract 70% from the manufacturers' labeled NRR. These derating values shall be used until such time as manufacturers test and label their products in accordance with a subject-fit method such as method B of ANSI S12.6-1997, *American National Standard Methods for Measuring the Real-Ear Attenuation of Hearing Protectors* [ANSI 1997]. Chapter 6 (p. 62) describes methods for using the NRR.

The employer shall train workers at least annually to select, fit, and use a variety of appropriate hearing protectors. By making a variety of devices available and training the workers in their use, the employer will substantially increase the likelihood that hearing protector use will be effective and worthwhile.

## 1.6 Medical Surveillance

The employer shall provide audiometry for all workers whose exposures equal or exceed 85 dBA as an 8-hr TWA.

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\*This recommendation should not be construed to imply that workers need not wear hearing protection unless their 8-hr TWAs equal or exceed 85 dBA. For example, it would be prudent for a worker in and out of noise or habitually exposed to loud noise (e.g., 91 dBA for 1 hr and 59 min) to wear hearing protection while in noise—even though his or her dose was less than 100%.

†The intent of this section is not to advocate hearing protectors as the primary means of control; however, when engineering controls, administrative controls, and work practices cannot keep workers' exposures below 85 dBA as an 8-hr TWA, the use of hearing protectors shall be required. For most TWA exposures exceeding 105 dBA, hearing protectors will be necessary to supplement engineering and administrative controls.

### 1.6.1 Audiometry

Audiometric tests shall be performed by a physician, an audiologist, or an occupational hearing conservationist certified by the Council for Accreditation in Occupational Hearing Conservation (CAOHC) or the equivalent, working under the supervision of an audiologist or physician. The appropriate professional notation (e.g., licensure, certification, or CAOHC certification number) shall be recorded on each worker's audiogram.

Audiometric testing shall consist of air-conduction, pure-tone, hearing threshold measures at no less than 500, 1000, 2000, 3000, 4000, and 6000 hertz (Hz). Right and left ears shall be individually tested. The 8000-Hz threshold should also be tested as an option and as a useful source of information about the etiology of a hearing loss.

Audiometric tests shall be conducted with audiometers that meet the specifications of and are maintained and used in accordance with the *American National Standard Specifications for Audiometers*, ANSI S3.6-1996 [ANSI 1996b]. Audiometers shall receive a daily functional check, an acoustic calibration check whenever the functional check indicates a threshold difference exceeding 10 dB in either earphone at any frequency, and an exhaustive calibration check annually or whenever an acoustic calibration indicates the need—as outlined in Section 5.5.2. The date of the last annual calibration shall be recorded on each worker's audiogram.

Audiometric tests shall be conducted in a room where ambient noise levels conform to all requirements of the *American National Standard Maximum Permissible Ambient Noise Levels for Audiometric Test Rooms*, ANSI S3.1-1991 [ANSI 1991b]. Instruments used to measure ambient noise shall conform to the *American National Standard Specification for Sound Level Meters*, ANSI S1.4-1983 and S1.4A-1985, Type 1 [ANSI 1983, 1985] and the *American National Standard Specification for Octave-Band and Fractional-Octave-Band Analog and Digital Filters*, ANSI S1.11-1986 [ANSI 1986]. For permanent onsite testing facilities, ambient noise levels shall be checked at least annually. For mobile testing facilities, ambient noise levels shall be tested daily or each time the facility is moved, whichever is more often. Ambient noise measurements shall be obtained under conditions representing the typical acoustical environment likely to be present when audiometric testing is performed. Ambient noise levels shall be recorded on each audiogram or made otherwise accessible to the professional reviewer of the audiograms.

### 1.6.2 Baseline Audiogram

A baseline audiogram shall be obtained before employment or within 30 days of employment for all workers who must be enrolled in the HLPP. Workers shall not be exposed to noise levels at or above 85 dBA for a minimum of 12 hr before receiving a baseline audiometric test. Hearing protectors shall not be used in lieu of the required quiet period.

### **1.6.3 Monitoring Audiogram and Retest Audiogram**

All workers enrolled in the HLPP shall have their hearing threshold levels (HTLs) measured annually. These audiometric tests shall be conducted during the worker's normal work shift. This audiogram shall be referred to as the "monitoring audiogram." The monitoring audiogram shall be examined immediately to determine whether a worker has a change in hearing relative to his or her baseline audiogram.

When the monitoring audiogram detects a change in the HTL in either ear that equals or exceeds 15 dB at 500, 1000, 2000, 3000, 4000, or 6000 Hz, an optional retest may be conducted immediately to determine whether the significant threshold shift is persistent. In most cases, the retest will demonstrate that the worker does *not* have a persistent threshold shift, thereby eliminating the need for a confirmation audiogram and followup action. If a persistent threshold shift *has* occurred, the worker shall be informed that his or her hearing may have worsened and additional hearing tests will be necessary.

### **1.6.4 Confirmation Audiogram, Significant Threshold Shift, and Followup Action**

When a worker's monitoring audiogram detects a threshold shift as outlined in Section 1.6.3, he or she shall receive a confirmation audiogram within 30 days. This confirmation test shall be conducted under the same conditions as those of a baseline audiometric test. If the confirmation audiogram shows the persistence of a threshold shift, the audiograms and other appropriate records shall be reviewed by an audiologist or physician.

If this review validates the threshold shift, the threshold shift is considered to be a significant threshold shift. This shift shall be recorded in the worker's medical record, and the confirmation audiogram shall serve as the new baseline and shall be used to calculate any subsequent significant threshold shift. Whenever possible, the worker should receive immediate feedback on the results of his or her hearing test; however, in no case shall the worker be required to wait more than 30 days.

When a significant threshold shift has been validated, the employer shall take appropriate action to protect the worker from additional hearing loss due to occupational noise exposure. Examples of appropriate action include explanation of the effects of hearing loss, reinstruction and refitting of hearing protectors, additional training of the worker in hearing loss prevention, and reassignment of the worker to a quieter work area.

When the reviewing audiologist or physician suspects a hearing change is due to a non-occupational etiology, the worker shall receive appropriate counseling, which may include referral to his or her physician.

### 1.6.5 Exit Audiogram

The employer should obtain an exit audiogram from a worker who is leaving employment or whose job no longer involves exposure to hazardous noise. The exit audiogram should be conducted under the same conditions as those of baseline audiometry.

## 1.7 Hazard Communication

### 1.7.1 Warning Signs

A warning sign shall be clearly visible at the entrance to or the periphery of areas where noise exposures routinely equal or exceed 85 dBA as an 8-hr TWA. All warning signs shall be in English and, where applicable, in the predominant language of workers who do not read English. Workers unable to read the warning signs shall be informed verbally about the instructions printed on signs in hazardous work areas of the facility. The warning sign shall textually or graphically contain the following information:



### 1.7.2 Notification to Workers

All workers who are exposed to noise at or above 85 dBA as an 8-hr TWA shall be informed about the potential consequences of noise exposure and the methods of preventing noise-induced hearing loss (NIHL). When noise measurements are initially conducted and confirm the presence of hazardous noise, or when followup noise measurements identify additional noise hazards, workers shall be notified within 30 days. New workers shall be alerted about the presence of hazardous noise before they are exposed to it.

## 1.8 Training

The employer shall institute a training program in occupational hearing loss prevention for all workers who are exposed to noise at or above 85 dBA as an 8-hr TWA; the employer shall ensure worker participation in such a program. The training program shall be repeated annually for each worker included in the HLPP. Information provided shall be updated to be consistent with changes in protective equipment and work processes.

The employer shall ensure that the training addresses, at a minimum, (1) the physical and psychological effects of noise and hearing loss; (2) hearing protector selection,

fitting, use, and care; (3) audiometric testing; and (4) the roles and responsibilities of both employers and workers in preventing NIHL.

The format for the training program may vary from formal meetings to informal on-the-spot presentations. Allowances shall be made for one-on-one training, which would be particularly suitable for workers who have demonstrated a significant threshold shift. Whenever possible, the training should be timed to coincide with feedback on workers' hearing tests.

The employer shall maintain a record of educational and training programs for each worker for the duration of employment plus 1 year. On termination of employment, the employer should provide a copy of the training record to the worker. The employer may wish to keep the training record with the worker's exposure and medical records for longer durations (see Section 1.10).

## **1.9 Program Evaluation Criteria**

The effectiveness of the HLPP shall be evaluated at the level of the individual worker and at the programmatic level.

The evaluation at the worker level shall take place at the time of the annual audiometry. If a worker demonstrates a significant threshold shift that is presumed to be occupationally related, all possible steps shall be taken to ensure that the worker does not incur additional occupational hearing loss.

The evaluation at the programmatic level shall take place annually. The incidence rate of significant threshold shift for noise-exposed workers shall be compared with that for a population not exposed to occupational noise. Similar incidence rates from this comparison indicate an effective HLPP. Data for calculating an incidence rate for a population not exposed to occupational noise should be drawn from Annex C in the *American National Standard Determination of Occupational Noise Exposure and Estimation of Noise-Induced Hearing Impairment*, ANSI S3.44-1996 [ANSI 1996c] unless more appropriate data are available.

## **1.10 Recordkeeping**

The employer shall establish and maintain records in accordance with the requirements in Sections 1.10.1 through 1.10.5.

### **1.10.1 Exposure Assessment Records**

The employer shall establish and maintain an accurate record of all exposure measurements required in Section 1.3. These records shall include, at a minimum, the name of the worker being monitored; identification number; duties performed and job locations; dates and times of measurements; type (refer to Section 6), brand, model, and size of hearing protectors used (if any); the measured exposure levels; and the identification of the person taking the measurements. Copies of a worker's exposure history resulting

from this requirement shall also be included in the worker's medical file along with the worker's audiograms.

### **1.10.2 Medical Surveillance Records**

The employer shall establish and maintain an accurate record for each worker subject to the medical surveillance specified in Section 1.6. These records shall include, at a minimum, the name of the worker being tested; identification number; duties performed and job locations; medical, employment, and noise-exposure history; dates, times, and types of tests (i.e., baseline, annual, retest, confirmation); hours since last noise exposure before each test; HTLs at the required audiometric frequencies; tester's identification and assessment of test reliability; the etiology of any significant threshold shift; and the identification of the reviewer.

### **1.10.3 Record Retention**

In accordance with the requirements of 29 CFR<sup>†</sup> 1910.20(d), Preservation of Records, the employer shall retain the records described in Sections 1.3 and 1.6 of this document for at least the following periods:

- 30 years for noise exposure monitoring records
- Duration of employment plus 30 years for medical monitoring records

In addition, records of audiometer calibrations and the ambient noise measurements in the audiometric testing room shall be maintained for 5 years.

### **1.10.4 Availability of Records**

In accordance with 29 CFR 1910.20, Access to Employee Exposure and Medical Records, the employer shall, upon request, allow examination and provide copies of these records to a worker, a former worker, or anyone having appropriate authorization for record access.

### **1.10.5 Transfer of Records**

The employer shall comply with the requirements for the transfer of records as set forth in 29 CFR 1910.20(h), Transfer of Records.

## **1.11 ANSI Standards**

All standards (e.g., American National Standards Institute [ANSI] standards) referred to in this document shall be superseded by the latest available versions.

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<sup>†</sup>*Code of Federal Regulations*. See CFR in references.