



# **SAN MATEO COUNTY HEARING CONSERVATION PROGRAM**

Prepared By:  
Matthew Rivard, Environmental Health  
Alicia Kellie, Risk Management Division

Last Reviewed: January 14, 2015

TABLE OF CONTENTS

I. GENERAL INFORMATION .....	3
A. BACKGROUND.....	3
B. SCOPE.....	3
C. INTRODUCTION AND PURPOSE .....	3
D. RESPONSIBILITIES.....	4
E. DEFINITIONS.....	5
E. NOISE LEVEL EXPOSURE LIMITS .....	8
II. COUNTY HEARING CONSERVATION PROGRAM.....	8
A. NOISE EXPOSURE MONITORING.....	8
B. AUDIOMETRIC TESTING .....	9
C. HEARING PROTECTIVE DEVICES AND POSTED AREAS .....	11
D. ENGINEERING AND ADMINISTRATIVE CONTROLS .....	12
E. EMPLOYEE TRAINING .....	12
F. RECORDKEEPING .....	13
APPENDIX A: EIGHT HOUR TIME-WEIGHTED AVERAGE (TWA) NOISE MEASUREMENTS WITH A NOISE DOSIMETER .....	14
APPENDIX B: JOB CLASSIFCATIONS INCLUDED IN THE HEARING CONSERVATION PROGRAM	15
APPENDIX C: PERSONNEL IN HEARING CONSERVATION PROGRAM.....	16
APPENDIX D: HEARING PROTECTION REQUIRED WHILE WORKING WITH OR AROUND THE FOLLOWING EQUIPMENT AND/OR MACHINERY.....	17
APPENDIX E: HEARING CONSERVATION TRAINING LOG .....	18
APPENDIX F: AUDIOMETRIC TESTING .....	18
APPENDIX G: HEARING CONSERVATION PROGRAM EVALUATION CHECKLIST .....	20

## **I. GENERAL INFORMATION**

### **A. BACKGROUND**

Occupational noise can cause hearing loss, and increase a worker's susceptibility to other workplace problems including physical and psychological disorders, interference with speech and communication, and disruption of job performance associated with excessive noise intensities. This exposure to noise produces hearing loss of a neural type involving injury to the inner ear hair cells. The loss of hearing may be temporary or permanent. Brief exposure causes a temporary loss. Repeated exposure to high noise levels will cause a permanent loss.

Permanent hearing loss is preventable with the continued use of proper hearing protection and reduction of workplace noise levels to below 85 decibels. This will benefit not only employees who can listen and communicate well throughout their lifetimes, but also helps the employer in terms of reduced exposure to hearing loss compensation claims and an increase in employee job performance, satisfaction and overall safety.

### **B. SCOPE**

This written program establishes the County of San Mateo's procedure for noise control and hearing conservation. It provides information and guidance on the process of identifying noise hazards and includes guidelines to be used by county departments in preparing individualized programs. It also provides procedures to ensure appropriate medical monitoring for those employees exposed to excess noise during the course of employment.

### **C. INTRODUCTION AND PURPOSE**

The County of San Mateo's Hearing Conservation Program is designed to protect employees whose duties require them to work in areas where the potential for high intensity noise exposure exists. The purpose of this program is to prevent exposure to or injury from potentially damaging noise levels and serves the County's overall goal of providing a workplace that is free from all recognized hazards. It is the policy of the County of San Mateo to protect its employees from the hazards of excessive noise exposure on the job.

This program outlines San Mateo County's requirements for noise monitoring and control, audiometric testing and interpretations, employee training, hearing protective devices and recordkeeping. The hearing conservation program is intended to comply with California's Division of Occupational Safety and Health (DOSH), Title 8, General Industry Safety Orders (GISO) Article 105, Sections 5095-5100 (Cal/OSHA noise standard).

Department heads, supervisors, employees, and the Risk Management Division shall share responsibilities for implementing and maintaining an effective Hearing Conservation Program within the County of San Mateo.

## **D. RESPONSIBILITIES**

### *DEPARTMENT HEADS/ SUPERVISORS*

Department Heads are responsible for ensuring that all aspects of the Hearing Conservation Program are implemented and maintained within their respective departments when employees are known to be exposed to excessive noise. Supervisors and employees have independent responsibility for hearing conservation requirements that are applicable for their respective areas.

Department management personnel and supervisors have the following responsibilities:

- Notify the Risk Management Department of noise complaints or potential noise hazards.
- Ensure that employees are provided with hearing protectors when required.
- Ensure that employees properly use and care for hearing protectors.
- Ensure that noise-hazardous equipment/areas are properly labeled or posted (greater than or equal to 85 dBA operating noise level).
- Ensure that employees included in the hearing conservation program receive initial and annual training, and annual audiograms.
- Notify Risk Management of process, materials or equipment changes that may alter noise exposures.
- Ensure that potentially overexposed employees are provided with a baseline audiometric hearing test prior to the initial work assignment and then annually thereafter. High noise exposures must be avoided for 14 hours prior to the exam.
- Maintain the following records
  - Name and job classification of the employee in the Hearing Conservation Program.
  - Audiometric test results from our Occupational Health Provider.
  - Noise exposure assessments from Risk Management.
  - Training documentation

### *RISK MANAGEMENT DEPARTMENT*

The Risk Management Department has oversight and coordination responsibility for the hearing conservation program. Department personnel have direct independent responsibility for hearing conservation requirements that are applicable to their respective areas. The Risk

Management Department personnel are available as resources and have the following responsibilities:

- Develop and maintain the written hearing conservation program.
- Conduct initial noise monitoring to determine which employees will be implemented in the hearing conservation program.
- Ensure employees who were monitored are notified of their results.
- Act as a technical resource for Department personnel related to hearing conservation issues and equipment recommendations.
- Provide guidance on appropriate resources that are available for noise monitoring, medical surveillance, and other hearing conservation program requirements.
- Maintain appropriate documentation and records for employee exposure monitoring, workplace monitoring and evaluations, and employee training.

#### *EMPLOYEES*

Employees who are included in the hearing conservation program have the following responsibilities:

- Use engineering controls, administrative controls and/or hearing protective devices properly and consistently.
- Store and maintain hearing protective devices in a clean and sanitary manner.
- Attend required hearing conservation training classes.
- Participate in annual audiometric testing when scheduled.
- Report noise hazards and hearing protector problems to their supervisor.

#### **E. DEFINITIONS**

This glossary defines words and terms relevant to noise control and audiometry. It has been compiled to provide assistance in understanding terms used in this section.

1. **Action level** - An 8-hour time weighted average of 85 decibels measured on the A-scale, slow response, or equivalently, a dose of fifty percent.
2. **Audiogram** - A chart, graph or table resulting from an audiometric test showing an individual's hearing threshold levels as a function of hearing (from 500 to 6000 Hertz).
3. **Audiologist** - A professional, specializing in the study and rehabilitation of hearing, who is certified by the American Speech-Language-Hearing Association or licensed by a state board of examiners.

4. **A Weighted Sound Level (dBA)** - The ear does not respond equally to all frequencies. Therefore, to obtain a single number representing the sound level of a noise containing a wide range of frequencies in a manner representative of the ear's response, it is necessary to reduce, or weight, the effects of the low and high frequencies with respect to the middle frequencies. The result and sound level is said to be A-weighted.
5. **Baseline Audiogram** - The audiogram against which future audiograms are compared.
6. **Criterion Sound Level** - A sound level of 90 decibels.
7. **Daily Noise Dose** - The cumulative noise exposure of an employee during a working day.
8. **Decibel (dB)** - A non-dimensional unit used to express levels. It is a logarithmic expression of the ratio of a measured quantity to reference quantity.
9. **Dose**- A single index number as defined by Cal/ OSHA.
10. **Dosimeter** - An instrument that registers the occurrence and accumulative duration of noise exceeding a predetermined level at a chosen point in the environment. As a calculation, it is based on the dose (Noise Exposure Index) concept, and is measured in a percent of the allowable limit.
11. **Frequency** - The time rate of repetition of a periodic phenomenon. It is expressed in Hertz (Hz), formerly in cycles per second (cps).
12. **Hearing Conservation Program (HCP)** - An integrated control program designed to prevent any significant permanent noise-induced hearing loss resulting from on-the-job noise exposure. An effective HCP will (a) identify and analyze the levels of noise exposure, (b) control the noise exposure by engineering controls, by the use of personal protective equipment, and/or administrative methods, (c) measure the degree of hearing loss (or confirm no loss) by pre-placement balance and periodic audiometric examinations.
13. **Hearing Protector**- A device inserted into or placed over the ear for the purpose of reducing air-conducted sounds, e.g. earplugs or earmuffs.
14. **Hearing Threshold Level (HTL)** - The amount the threshold of hearing exceeds a standard audiometric reference. Current levels are referenced to ANSI 1969 standard or ISO-1964 standard.
15. **Hertz (Hz)** - Unit of measurement of frequency, numerically equal to cycles per second.

16. **Impulse of Impact Noise** - A sound with a rise time of not more than 35 milliseconds to peak intensity and duration of not more than 500 milliseconds to the time when the level is 20 dB below the peak. If the impulse recurs at intervals less than 1/2 second, they shall be considered as continuous noise.
17. **Intermittent Noise** - A steady state or continuous signal which is interrupted by periods of silence or periods of noise at levels below 55 dBA. Intermittent noise does not vary by more than 40 dBA in 500 milliseconds.
18. **Noise** - Disturbing, harmful or unwanted sound.
19. **Noise Exposure Index** - The integrated effect over a given time period at different noise levels and durations, often reported as a Dose.
20. **Noise Induced Hearing Loss** - The term used to refer to the slowly progressive inner ear hearing loss resulting from exposure to continuous noise over a long time period as contrasted to acoustic trauma or physical injury to the ear.
21. **Permanent Threshold Shift (PTS)** - The component of threshold shift which shows no progressive reduction with passage of time when the apparent cause is removed.
22. **Representative Exposure** - Measurements of an employee's noise dose or 8-hour time-weighted average sound level that the employers deem to be representative of the exposure to other employees in the work place.
23. **Sound Level Meter (SLM)** - An instrument used to measure noise and sound levels, comprised of a microphone, amplifier, rectifier, output meter, and optional frequency-weighting networks.
24. **Standard Threshold Shift** - A change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more at 2000, 3000 and 4000 Hertz in either ear.
25. **Steady-State Noise** - Noises that are continuous or that consist of impulses spaced less than 0.5 seconds apart.
26. **Time-Weighted Average Sound Level** - That sound level, which if constant over an 8-hour exposure, would result in the same noise dose as is measured.
27. **Threshold of Hearing** - The lowest detectable level of audible sound reported as a function of frequency.

**E. NOISE LEVEL EXPOSURE LIMITS**

The following exposure limits are established to protect employees from harmful effects of noise in the workplace.

**1. Continuous Noise**

Protection against the effects of noise exposure shall be provided when sound levels exceed those shown below when measured on the A-scale of standard Type II sound level meter at a slow response.

*Permissible Noise Exposure Limits*

*Duration per day, hours Sound level, dBA, slow response*

16	85
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105
0.5	110
0.25 Or less	115

**2. Impulsive or Impact Noise**

Exposure to impulsive or impact noise shall not exceed 140 dBA peak sound pressure level as measured by an impulsive-type sound level meter.

**II. COUNTY HEARING CONSERVATION PROGRAM**

**A. NOISE EXPOSURE MONITORING**

The Risk Management Department shall conduct employee noise exposure monitoring whenever employee noise exposures may equal or exceed an 8-hour time-weighted average sound level (TWA) of 85 decibels measured on the A-scale (slow response) or, equivalently, a dose of fifty percent. Measurements will include sound levels in the range of 80-140 dBA, and will be performed using only calibrated noise level meters and/or dosimeters.

The noise-monitoring requirement shall be met by either performing area monitoring or personal monitoring that is representative of the employee's exposure. The sampling strategy shall be designed to identify employees for inclusion in the hearing conservation program and to enable the proper selection of hearing protectors. Where circumstances such as high worker



mobility, significant variations in sound level, or a significant component of impulse noise make area monitoring generally inappropriate, the employer shall use representative personal sampling to comply with the monitoring requirements of this section unless the employer can show that area sampling produces equivalent results.

Monitoring shall be repeated whenever a change in production, process, equipment or controls increases noise exposures to the extent that; additional employees may be exposed at or above the action level; or the attenuation provided by hearing protectors being used by employees may be rendered inadequate to meet Cal OSHA's Hearing Conservation requirements.

The Risk Management Department shall notify employees exposed to sound levels at or above 85 dBA as an 8-hour TWA of the results of the monitoring. Affected employees shall have the opportunity to observe the monitoring.

## **B. AUDIOMETRIC TESTING**

San Mateo County shall establish and maintain audiometric testing by making audiometric testing available to all employees whose noise exposures equal or exceed an 8-hour time-weighted average of 85 decibels. The program shall be provided at no cost to employees.

Audiometric tests shall be performed by a licensed or certified audiologist, otolaryngologist, or other physician, or by a technician who is certified by the Council of Accreditation in Occupational Hearing Conservation, or who has satisfactorily demonstrated competence in administering audiometric examinations, obtaining valid audiograms, and properly using, maintaining and checking calibration and proper functioning of the audiometers being used. A technician who operates microprocessor audiometers does not need to be certified. A technician who performs audiometric tests must be responsible to an audiologist, otolaryngologist or physician.

There are two essential components of the medical testing program. These include conducting and evaluating all audiogram tests.

### ***Baseline audiogram***

A baseline audiogram is performed at the time of hire or within 6 months of an employee's first exposure to occupational noise at or above the action level 85dBA. This audiogram serves as a reference against which future audiograms are compared. If the baseline audiogram will be obtained more than six months after the employee's first exposure at or above the action level, the employee shall wear hearing protectors until the baseline audiogram is obtained. In addition, whenever a baseline audiogram is to be obtained from an employee, the employee shall have limited noise exposure at least 14 hours prior to testing. If necessary, hearing protectors may be used to limit the employee's exposure to noise.

***Annual audiogram***

Audiograms will be conducted at least annually after obtaining the baseline audiogram for each employee exposed at or above an 8-hour time-weighted average of 85 decibels.

Risk Management will maintain a record of all employee audiometric test records. This record will include:

1. Name and job classification of the employee.
2. Date of the audiogram.
3. The examiner's name.
4. Date of the last acoustic or exhaustive calibration of the audiometer.
5. Employee's most recent noise exposure assessment.

***Audiogram Evaluation***

The employee's annual audiogram shall be compared to his or her baseline audiogram to determine if the annual audiogram is valid and to determine if a standard threshold shift (STS) has occurred. The standard defines an STS as an average audiogram shift of 10dB or more at 2,000, 3,000 or 4,000 Hz in either ear.

Whenever a problem audiogram has been identified the audiologist:

- May retest the employee within 30 days and consider the retest the employee's annual audiogram.
- Shall review problem audiograms and determine whether further evaluation is required.
- Shall provide all information necessary to perform the evaluation including the employee's baseline and most recent audiograms, and information pertaining to test room and equipment requirements as outlined in the noise standard and its appendices.

Whenever an STS has been identified, follow-up procedures include:

- That the employer shall inform the employee, in writing, of the test results within 21 days of the determination.
- If an STS is determined to be work related, employees shall be fitted and trained for hearing protectors if they are not currently using them or refitted and retrained in the use of hearing protectors if they are currently using them.

- That the employee shall be referred for further clinical or audiologic testing or evaluation, as appropriate, shall be examined to determine if the hearing protectors are aggravating or promoting any medical conditions, and informed of any medical condition of the ear that is unrelated to the use of hearing protectors.
- If subsequent testing of the employee, exposed at or below 90dBA as an 8-hour TWA, shows that the STS is not persistent, the employer shall inform the employee of the new test and evaluation result and discontinue the use of hearing protection for that employee.

A recent or annual audiogram may be substituted for the baseline audiogram, if the audiologist determines that:

- The STS identified in the audiogram is persistent.
- There has been an improvement in the employee's hearing over the baseline.

The replacement audiogram is known as the revised baseline, which will help to identify any subsequent shifts in hearing should they occur.

As defined by the standard, an STS is a shift in hearing of 10dB or more in either ear, at 2,000, 3,000 or 4,000 Hz. The standard recognizes the effects of natural aging upon hearing, and makes allowances for the application of age correction factors in evaluating an employee's annual audiogram.

### **C. HEARING PROTECTIVE DEVICES AND POSTED AREAS**

Department Heads and Supervisors shall make hearing protective devices available to all employees exposed to an 8-hour time-weighted average of 85 decibels or greater at no cost to the employees. Hearing protectors shall be replaced as necessary. Supervisors shall ensure that hearing protection be worn by all employees exposed to 85 decibels or greater and are a part of the County's Hearing Conservation Program.

Employees shall be given the opportunity to select their hearing protectors from a variety of suitable hearing protectors provided by the Supervisors. The Department Heads and/or Supervisors shall provide training in the use, care and maintenance of all hearing protectors provided to employees. The Supervisors shall ensure proper initial fitting and supervise the correct use of all hearing protectors.

Department Heads along with the Risk Management Department shall determine which hearing protective devices are appropriate for a particular noise exposure, using the following formula

and Noise Reduction Rating (NRR) provided by the manufacturer to evaluate attenuation characteristics:

- [Employee's 8-hour TWA (dBA) – [(NRR – 7 dB)/2] = estimated A-weighted TWA under the hearing protective device.

The adequacy of hearing protector attenuation shall be reevaluated whenever employee noise exposures increase to the extent that the hearing protectors provided may no longer provide adequate attenuation. The Supervisors shall provide more effective hearing protectors where necessary.

Department Heads and Supervisors shall post signs indicating work areas or equipment requiring the use of hearing protective devices. Supervisors will provide hearing protective devices to the employees or in the immediate area. Employees must wear hearing protection when working on posted equipment or in the defined area.

#### **D. ENGINEERING AND ADMINISTRATIVE CONTROLS**

The primary means of reducing or eliminating personnel exposure to hazardous noise is through the application of engineering controls. Engineering controls are defined as any modification or replacement of equipment, or related physical change at the noise source or along the transmission path that reduces the noise level at the employee's ear.

Administrative controls are defined as changes in the work schedule or operations, which reduce noise exposure. If engineering solutions cannot reduce the noise, administrative controls such as increasing the distance between the noise source and the worker or rotation of jobs between workers in the high noise area should be used if possible. The use of engineering and administrative controls should reduce noise exposure to the point where the hazard to hearing is eliminated or at least more manageable.

#### **E. EMPLOYEE TRAINING**

Departments are responsible for providing training to employees exposed to noise at or above an eight hour time-weighted average of 85 dBA. The training program shall be repeated annually for each employee, and will contain information that is up to date and includes any changes regarding the work environment or process, as well as changes in personal protective equipment (such as hearing protectors). A training program will include the following components:

- The effects of noise on hearing

- The purpose, advantages and disadvantages of properly fitting hearing protectors for attenuating noise levels
- Selection of hearing protectors
- Fitting and use of hearing protectors
- The care of hearing protectors
- The purpose and procedures for audiometric testing

The employee or their supervisor shall have access to information and materials, upon request, regarding this program including:

- Copies of Cal OSHA's noise control standard (CCR Title 8, Article 105)
- Access to training and hearing conservation materials for this program
- Training or educational materials from this program pertaining to the noise control standard

The Department Management or Supervisor will provide training and educational materials that best suit each situation as it pertains to noise exposure, control and hearing conservation. The training requirements are such that they will promote employee awareness and participation, and allow for routine assessment of the level of compliance of the program by the employer. All training records are to be maintained within the County's Learning Management System (LMS).

## **F. RECORDKEEPING**

The Risk Management Department is responsible for maintaining records for certain periods of time as specified in the hearing conservation amendment [29 CFR 1910.95 (m)]. Recording keeping requirements of the noise control standard include:

1. Maintaining noise exposure measurement records for a period of 2 years
2. Retaining hearing test records that include:
  - a. the name and job classification of the employee
  - b. dates of all audiogram tests
  - c. examiner's name
  - d. date of the last acoustic or exhaustive calibration of test equipment, measurements of the background sound levels in audiogram test rooms
  - e. the employee's most recent noise exposure measurement
3. Audiometric test records must be maintained for the duration of the affected individual's employment

**APPENDIX A: EIGHT HOUR TIME-WEIGHTED AVERAGE (TWA) NOISE MEASUREMENTS WITH A NOISE DOSIMETER**

<b>Job Classification</b>	<b>8-hr TWA (dBA)</b>
Craft shop/Construction Service Workers	76.4
Boiler Room Operators	79.2
Deputy Officers- K-9 Unit	85.1
Gardeners	85.3
Road Maintenance Workers	86.2
Park Rangers	87.0
Road Equipment Operators	87.4

**APPENDIX B: JOB CLASSIFICATIONS INCLUDED IN THE HEARING CONSERVATION PROGRAM**

Lead Gardener  
Gardener  
Parks & Open Space Equipment Operator  
Park Ranger I  
Park Ranger II  
Park Ranger III  
Park Ranger IV  
Road Construction Supervisor  
Road Maintenance Manager  
Road Maintenance Supervisor  
Road Maintenance Worker I  
Road Maintenance Worker II  
Road Equipment Operator I  
Road Equipment Operator II  
Deputy Officer- K-9 Unit

**APPENDIX C: PERSONNEL IN HEARING CONSERVATION PROGRAM**

<b>Personnel in Hearing Conservation Program</b>				
<b>Employee Name</b>	<b>Department</b>	<b>Job Title</b>	<b>Type of Hearing Protection Issued</b>	<b>Date Issued</b>



**APPENDIX D: HEARING PROTECTION REQUIRED WHILE WORKING WITH OR AROUND THE FOLLOWING EQUIPMENT AND/OR MACHINERY**

\*This list may not be all-inclusive.

Contact Risk Management to request testing of any new equipment.

<b>Equipment and/or Machinery</b>	<b>Sound Pressure Level (dBA)</b>
Generators (CoGen Plant)	108
Jackhammer	108
Chain Saw	105.3
Chipper	104.4
Jointer	104
Stump Grinder	102.1
Plunge Saw	101
Chop Saw	100.4
Arm Saw	100.3
Chop Saw	100.1
SawZall	97.8
Table Saw	97.0
Skill Saw	96.2
Router	95.6
Belt Sander	95.2
Jet-Rodder Truck	92.9
Impact Gun	92.4
Sander	92.1
Flusher Truck	90.3
Planer	90.1
Compressor Room (hospital)	88.5
Small Router	88.4
Grader	88.7
Grinder	87.8
Band Saw	87.7
Compressor (roof of 555)	87.4
Grinder	86.7
Table Saw	86.0
Front Loader (inside cab)	85.8
Compressor (motor pool)	85.7
Gradall (inside cab)	85.3

**APPENDIX E: HEARING CONSERVATION TRAINING LOG**

**Training Date:** \_\_\_\_\_

**Topic:** \_\_\_\_\_

**Training Conducted by:** \_\_\_\_\_

<b>Employee Name (printed)</b>	<b>Employee Signature</b>	<b>Job Title</b>

This log is to be entered into the County Learning Management System (LMS).

**APPENDIX F: AUDIOMETRIC TESTING**

SAN MATEO COUNTY  
Hearing Conservation Program

---

Employee Name	Job Title	Test Date

**APPENDIX G: HEARING CONSERVATION PROGRAM EVALUATION CHECKLIST**

**Training and Education**

Failures or deficiencies in hearing conservation programs (hearing loss prevention programs) can often be traced to inadequacies in the training and education of noise-exposed employees and those who conduct elements of the program.

	Y	N
Has training been conducted at least once a year?		
Was the training provided by a qualified instructor?		
Was the success of each training program evaluated?		
Is the content revised periodically?		
Are managers and supervisors directly involved?		
Are posters, regulations, handouts, and employee newsletters used as supplements?		
Are personal counseling sessions conducted for employees having problems with hearing protection devices or showing hearing threshold shifts?		

**Supervisor Involvement**

Data indicate that employees who refuse to wear hearing protectors or who fail to show up for hearing tests frequently work for supervisors who are not totally committed to the hearing loss prevention programs.

	Y	N
Have supervisors been provided with the knowledge required to supervise the use and care of hearing protectors by subordinates?		
Do supervisors wear hearing protectors in appropriate areas?		
Have supervisors been counseled when employees resist wearing protectors or fail to show up for hearing tests?		
Are disciplinary actions enforced when employees repeatedly refuse to wear hearing protectors?		

**Noise Measurement**

For noise measurements to be useful, they need to be related to noise exposure risks or the prioritization of noise control efforts, rather than merely filed away. In addition, the results need to be communicated to the appropriate personnel, especially when follow-up actions are required.

	Y	N
Were the essential/critical noise studies performed?		
Was the purpose of each noise study clearly stated? Have noise-exposed employees been notified of their exposures and appraised of auditory risks?		
Are the results routinely transmitted to supervisors and other key individuals?		
Are results entered into health/medical records of noise-exposed employees?		
Are results entered into shop folders?		
If noise maps exist, are they used by the proper staff?		
Are noise measurement results considered when contemplating procurement of new equipment? Modifying the facility? Relocating employees?		
Have there been changes in areas, equipment, or processes that have altered noise exposure? Have follow-up noise measurements been conducted?		
Are appropriate steps taken to include (or exclude) employees in the hearing loss prevention programs whose exposures have changed significantly?		

**Engineering and Administrative Controls**

Controlling noise by engineering and administrative methods is often the most effective means of reducing or eliminating the hazard. In some cases engineering controls will remove requirements for other components of the program, such as audiometric testing and the use of hearing protectors.

	Y	N
Have noise control needs been prioritized?		
Has the cost-effectiveness of various options been addressed?		
Are employees and supervisors appraised of plans for noise control measures? Are they consulted on various approaches?		
Will in-house resources or outside consultants perform the work?		
Have employees and supervisors been counseled on the operation and maintenance of noise control devices?		
Are noise control projects monitored to ensure timely completion?		
Has the full potential for administrative controls been evaluated?		
Are noisy processes conducted during shifts with fewer employees?		
Do employees have sound-treated lunch or break areas?		

**Monitoring Audiometry and Record Keeping**

The skills of audiometric technicians, the status of the audiometer, and the quality of audiometric test records are crucial to hearing loss prevention program success. Useful information may be ascertained from the audiometric records as well as from those who actually administer the tests.

	Y	N
Has the audiometric technician been adequately trained, certified, and recertified as necessary?		
Do on-the-job observations of the technicians indicate that they perform a thorough and valid audiometric test, instruct and consult the employee effectively, and keep appropriate records?		
Are records complete?		
Are follow-up actions documented?		
Are hearing threshold levels reasonably consistent from test to test? If not, are the reasons for inconsistencies investigated promptly?		
Are the annual test results compared to baseline to identify the presence of an OSHA standard threshold shift?		
Is the annual incidence of standard threshold shift greater than a few percent? If so, are problem areas pinpointed and remedial steps taken?		
Are audiometric trends (deteriorations) being identified, both in individuals and in groups of employees? (NIOSH recommends no more than 5% of workers showing 15 dB Significant Threshold Shift, same ear, same frequency.)		
Do records show that appropriate audiometer calibration procedures have been followed?		
Is there documentation showing that the background sound levels in the audiometer room were low enough to permit valid testing?		
Are the results of audiometric tests being communicated to supervisors and managers as well as to employees?		
Has corrective action been taken if the rate of no-shows for audiometric test appointments is more than about 5%?		
Are employees incurring STS notified in writing within at least 21 days? (NIOSH recommends immediate notification if retest shows 15 dB Significant Threshold Shift, same ear, same frequency.)		

**Hearing Protection Devices**

When noise control measures are infeasible, or until such time as they are installed, hearing protection devices are the only way to prevent hazardous levels of noise from damaging the inner ear. Making sure that these devices are worn effectively requires continuous attention on the part of supervisors and program implementers as well as noise-exposed employees.

	Y	N
Have hearing protectors been made available to all employees whose daily average noise exposures are 85 dBA or above? (NIOSH recommends requiring HPD use if noises equal or exceed 85 dBA regardless of exposure time.)		
Are employees given the opportunity to select from a variety of appropriate protectors?		
Are employees fitted carefully with special attention to comfort?		
Are employees thoroughly trained, not only initially but at least once a year?		
Are the protectors checked regularly for wear or defects, and replaced immediately if necessary?		
If employees use disposable hearing protectors, are replacements readily available?		
Do employees understand the appropriate hygiene requirements?		
Have any employees developed ear infections or irritations associated with the use of hearing protectors?		
Are there any employees who are unable to wear these devices because of medical conditions?		
Have these conditions been treated promptly and successfully?		
Have alternative types of hearing protectors been considered when problems with current devices are experienced?		
Do employees who incur noise-induced hearing loss receive intensive counseling?		
Are those who fit and supervise the wearing of hearing protectors competent to deal with the many problems that can occur?		
Do workers complain that protectors interfere with their ability to do their jobs?		
Do they interfere with spoken instructions or warning signals?		
Are these complaints followed promptly with counseling, noise control, or other measures?		
Are employees encouraged to take their hearing protectors home if they engage in noisy non-occupational activities?		
Are new types of or potentially more effective protectors considered as they become available?		
Is the effectiveness of the hearing protector program evaluated regularly?		
Have at-the-ear protection levels been evaluated to ensure that either over or under protection has been adequately balanced according to the anticipated ambient noise levels?		
Is each hearing protector user required to demonstrate that he or she understands how to use and care for the protector?		
The results documented?		

**Administrative**

Keeping organized and current on administrative matters will help the program run smoothly.

	Y	N
Have there been any changes in federal or state regulations?		
Have hearing loss prevention program's policies been modified to reflect these changes		
Are copies of company policies and guidelines regarding the hearing loss prevention program available in the offices that support the various program elements?		
Are those who implement the program elements aware of these policies?		
Do they comply?		
Are necessary materials and supplies being ordered with a minimum of delay?		
Are procurement officers overriding the hearing loss prevention program implementer's requests for specific hearing protectors or other hearing loss prevention equipment?		
If so, have corrective steps been taken?		
Is the performance of key personnel evaluated periodically?		
If such performance is found to be less than acceptable, are steps taken to correct the situation?		
Safety: Has the failure to hear warning shouts or alarms been tied to any accidents or injuries?		
If so, have remedial steps been taken?		