

	<b>COMPANY HEALTH AND SAFETY PROGRAM</b>	
	<b>Document No.</b> 7.3	<b>Date:</b> August 8, 2006
	<b>Hearing Conservation Program</b>	<b>Revision:</b> 0

## 1.0 PURPOSE

The purpose of this program is to promote hearing conservation for HES employees and to comply with 29 CFR 1910.95 and 1926.52.

## 2.0 SCOPE

This program applies to all HES employees who are exposed to noise levels equal to or exceeding an 8-hour time-weighted average sound level (TWA) of 85 decibels (dB) measured on the A scale (slow response) or equivalently, a dose of fifty percent and further defined as the action level.

## 3.0 POLICY

Each HES employee identified by the Scope of this program will be required to agree to its provisions. Proper administrative controls, engineering controls, or hearing protectors will be used accordingly.

## 4.0 MONITORING

Monitoring will be periodically conducted to identify employees for inclusion in the hearing conservation program and to enable 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 inappropriate, HES may use representative personal sampling to comply with the monitoring requirements of the standard.

All continuous, intermittent, and impulsive sound levels from 80 decibels to 130 decibels will be integrated into the noise measurements. Instruments used to measure employee noise exposure will be calibrated to ensure measurement accuracy.

Monitoring will be repeated whenever a change in production, process, equipment, or controls increases noise exposures to the extent that:

1. Additional employees may be exposed at or above the action level; or
2. The attenuation provided by hearing protectors being used by employees may be rendered inadequate to meet the requirements of paragraph (j) of the standard.

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HES will notify each employee exposed at or above an 8-hour time-weighted average of 85 decibels of the results of the monitoring. Affected employees and their representatives will be provided with an opportunity to observe any noise measurements conducted.

Noise dosimeters or sound level meters which comply, as a minimum, with the provisions of this Standard, will be used whenever employee exposures are evaluated for the purpose of complying with 29 CFR 1910.95 Occupational Noise Exposure.

## 5.0 AUDIOMETRIC EQUIPMENT

Audiometric tests will be pure tone, air conduction, hearing threshold examinations, with test frequencies including at a minimum 500, 1000, 2000, 3000, 4000, and 6000 Hz. Tests at each frequency will be taken separately for each ear.

Audiometric tests will be conducted with audiometers (including microprocessor audiometers) that meet the specifications of, and are maintained and used in accordance with, American National Standard Specification for Audiometers, S3.6-1969.

Pulse-tone and self-recording audiometer, if used, will meet the requirements specified in *Appendix C: Audiometric Measuring Instruments* of the Standard.

## 6.0 CALIBRATION

The functional operation of the audiometer will be checked before each day's use by testing a person with known, stable hearing thresholds, and by listening to the audiometer's output to make sure that the output is free from distorted or unwanted sounds. Deviations of 10 decibels or greater require an acoustic calibration.

Audiometer calibration will be checked acoustically at least annually in accordance with *Appendix E: Acoustic Calibration of Audiometers* of the Standard. Test frequencies below 500 Hz and above 6000 Hz may be omitted from this check. Deviations of 15 decibels or greater require an exhaustive calibration.

An exhaustive calibration will be performed at least every two years in accordance with the appropriate sections of the Standard and the American National Standard Specification for Audiometers, S3.6-1969. Test frequencies below 500 Hz and above 6000 Hz may be omitted from this calibration.

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## 7.0 AUDIOMETRIC TESTING

Audiometric tests will 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. A technician who operates a microprocessor audiometers being used does not need to be certified. A technician who performs audiometric tests must be responsible to an audiologist, otolaryngologist, or physician.

Within 6 months of an employee's first exposure at or above the action level, HES will establish a valid **baseline audiogram** against which subsequent audiograms can be compared.

Testing to establish a baseline audiogram will be preceded by at least 14 hours without exposure to workplace noise. Hearing protectors may be used as a substitute for the requirements that baseline audiograms be preceded by 14 hours without exposure to workplace noise. HES will notify employees of the need to avoid high levels of non-occupational noise exposure during the 14-hour period immediately preceding the audiometric examination.

At least annually after obtaining the baseline audiogram, HES will obtain a new audiogram for each employee exposed at or above an 8-hour time-weighted average of 85 decibels.

Each employee's **annual audiogram** will be compared to that employee's baseline audiogram to determine if the audiogram is valid and if a *standard threshold shift* has occurred. The comparison may be done by a technician.

A *standard threshold shift* is a change in hearing threshold relative to the baseline audiogram of an average of 10dB or more at 2000, 3000, and 4000Hz in either ear.

If the annual audiogram shows that an employee has suffered a standard threshold shift, HES may obtain a retest within 30 days and consider the results of the retest as the annual audiogram. If a comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift has occurred, the employee will be informed of the results in writing, within 21 days of the determination.

An audiologist, otolaryngologist, or other qualified physician will review those audiograms which indicate a significant threshold shift to determine whether there is need for further evaluation. In order for the person performing the evaluation to make a successful determination, it will be necessary for HES to insure that they have the following information:

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1. A copy of the Standard, 29 CFR Part 1910.95, Occupational Noise Exposure;
2. The baseline audiogram and most recent audiogram of the employee to be evaluated;
3. Measurements of background sound pressure levels in the audiometric test room as required by Appendix D of 1910.95 in the Standard; and
4. Records of audiometer calibrations as required by the Standard.

Unless a physician determines a standard threshold is not work related or aggravated by occupational noise exposure, HES will ensure that the following steps are taken when a standard threshold shift occurs:

1. Employees not using hearing protectors will be fitted with hearing protectors, trained in their use and care, and required to use them.
2. Employee already using hearing protectors will be refitted and retrained in the use of hearing protectors, trained in their use and care, and required to use them.
3. The employee will be referred for a clinical audiological evaluation or an otological examination, as appropriate, if additional testing is necessary or if the employer suspects that a medical pathology of the ear is caused or aggravated by the wearing of hearing protectors.
4. The employee is informed of the need for an otological examination if a medical pathology of the ear that is unrelated to the use of hearing protectors is suspected.

**NOTE:** In cases where the professional determines that the audiometric test results are consistent with a medical problem that is not related to wearing hearing protectors, such as respiratory infection, HES is not responsible for the cost of a medical referral; however, in such cases the employee must be told about the problem and advised to see a physician.

If subsequent audiometric testing of an employee whose exposure to noise is less than an 8-hour TWA of 90 decibels indicates that a standard threshold shift is not persistent, the following steps will occur:

1. The employee will be informed of the new audiometric interpretation; and
2. The required use of hearing protectors for that employee may discontinue.

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An annual audiogram may be substituted for the baseline audiogram when, in the judgment of the audiologist, otolaryngologist, or physician who is evaluating the audiogram:

1. The standard threshold shift revealed by the audiogram is persistent; or
2. The hearing threshold shown in the annual audiogram indicates significant improvement over the baseline audiogram.

In determining whether a standard threshold shift has occurred, allowance may be made for the contribution of aging (presbycusis) to the change in hearing level by correcting the annual audiogram according to the procedure within *Appendix F: Calculation and Application of Age Correction to Audiograms* of the Standard.

When an employee refuses the follow-up examination or treatment, he or she does so at their own risk and HES has carried out its responsibility if it has complied with all aspects of the Standard and has advised the employee of the necessity for examination or treatment even though the employee refuses.

## **8.0 NOISE REDUCTION CONTROLS**

When employees are subjected or exposed to sounds exceeding permissible noise levels, then efforts for feasible administrative or engineering controls will be made and controls utilized.

*Administrative controls* simply mean reducing the amount of time an employee is subjected or exposed to excessive noise. This can be done by several methods, one of which is dividing noisy jobs up among two or more employees, with each spending only a permissible amount of time exposed to the excessive noise.

*Engineering controls* are realistically more complex to deal with. The following are examples of engineering controls:

1. Equipment acoustical covers
2. Balanced and well lubricated equipment - routine maintenance
3. Rubber or plastic equipment base mounts
4. Silencers or mufflers on noisy components

## **9.0 HEARING PROTECTORS**

HES will make hearing protectors 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 will be replaced as necessary.

HES will ensure that hearing protectors are worn by the following:

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1. An employee who is subjected to sound levels exceeding *Table G-16 - Permissible Noise Exposures* of the Standard.

Duration per day, hours	Sound level (dba) slow response
8 .....	90
6 .....	92
4 .....	95
3 .....	97
2 .....	100
1 .....	102
1 .....	105
1/2 .....	110
1/2 or less .....	115

2. Any employee who is exposed to an 8-hour time-weighted average of 85 decibels or greater and who has not yet had a baseline audiogram or experienced a standard threshold shift.

Employees will be given the opportunity to select their hearing protectors from a couple different types provided by HES. Training will be provided in the use and care of all hearing protectors provided to employees. Proper initial fitting through the manufacturer’s recommendations and instructions and supervision will be provided for the correct use of all hearing protectors.

**NOTE:** Even though it is HES’s responsibility to replace hearing protectors as necessary, this does not mean HES will pay for an unlimited supply of protectors or continue to replace protectors that have been lost or damaged due to employee negligence. Although worn out protectors must be replaced by HES, HES will not bear the expense in cases where employees have been irresponsible.

## 10.0 HEARING ATTENUATION

HES and its employees will have the responsibility for evaluating hearing protector attenuation for the specific noise environments in which the protector will be used. One of the evaluation methods described in *Appendix B: Methods for Estimating the Adequacy of Hearing Protection Attenuation* of the Standard. The most convenient method is the Noise Reduction Rating (NRR) developed by the Environmental Protection Agency. The NRR is typically shown on the hearing protector package. The NRR is related to an individual worker’s noise environment in order to assess the adequacy of the attenuation of a given hearing protector. The higher the NRR the better the protection rating. *Appendix B* describes four methods of using the NRR to determine whether a particular hearing protector provides adequate protection within a given exposure environment. Selection among the four procedures is dependent

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upon the noise measuring instrument used.

Hearing protectors must attenuate employee exposure at least to an 8-hour time-weighted average of 90 decibels as required by the Standard. For any employee who has experienced a standard threshold shift, hearing protectors must attenuate employee exposure to an 8-hour time-weighted average of 85 decibels or below.

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

## 11.0 TRAINING

A training program will be instituted for all employees who are exposed to noise at or above an 8-hour time-weighted average of 85 decibels, and will ensure employee participation in such program.

The training program will be repeated annually for each employee included in the hearing conservation program. Information provided in this training program will be updated to be consistent with changes in protective equipment and work processes.

Employees will be informed of the following:

1. The effects of noise on hearing;
2. The purpose of hearing protectors, the advantages, disadvantages, and attenuation of various types, and instructions on selection, fitting, use, and care;
3. The purpose of audiometric testing, and an explanation of the test procedures; and
4. Current Hearing Conservation Program.

## 12.0 INFORMATION ACCESS

A copy of 29 CFR 1910.95 Occupational Noise Exposure, and this program will be made available to affected employees or their representatives.

Any informational materials pertaining to the standard that are supplied to HES by the Assistant Secretary will be provided to affected employees. All materials related to HES's training program pertaining to the Standard will be provided,

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upon request, to the Assistant Secretary and the Director.

### **13.0 RECORDKEEPING**

Records of all employee exposure measurements required by paragraph (d) of the Standard will be maintained. All affected employee audiometric test records will be retained and include the following information:

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; and
6. An accurate record of the measurements of the background sound pressure levels in audiometric test rooms.

Noise exposure measurement records will be retained for two years. Audiometric test records will be retained for the duration of the affected employee's employment.

All records required by the Standard will be provided upon request to employees, former employees, representatives designated by the individual employee, and the Assistant Secretary.

In the event that HES, or a division/department thereof, ceases to do business, all records will be transferred to the successor employer required to be maintained by the Standard, and the successor employer will retain them for the remainder of the period prescribed in the Standard.

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#### 14.0 Employee Noise Exposure Assessment

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

Instrument Make: \_\_\_\_\_ Model: \_\_\_\_\_ SN: \_\_\_\_\_

	<u>Equipment/Operation/Activity</u>	<u>Division</u>	<u>Peak Sound Level (decibels)</u>
1.	953B Cat Loader Operator Remediation		
2.	300 K Trackhoe Operator	Remediation	
3.	853 Bobcat Operator	Remediation	
4.	580 Super L Back hoe	Remediation	
5.	Earthprobe 200 Hammer Drill	Engineering	
6.	Earthprobe 200 Drill Rig	Engineering	
7.	D1 Dominator Vacuum Truck	Vacuum Services	
8.	D2 Dominator Vacuum Truck	Vacuum Services	
9.	G1 Guzzler Vacuum Truck	Vacuum Services	
10.	High-pressure compressor Remediation		
11.	High-volume air pumps	Asbestos	
12.	Negative air machines	Asbestos	
13.	Hand-held powered compactor	Remediation	
14.	Concrete floor cutter saw	Remediation	
15.			
16.			
17.			
18.			



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*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.

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

*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.

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

*Medical Pathology* - A disorder or disease. For purposes of the regulation, a condition or disease affecting the ear, which should be treated by a physician specialist.

*Noise dosimeter* - An instrument that integrates a function of sound pressure over a period of time in such a manner that it directly indicates a noise dose.

*Otolaryngologist* - A physician specializing in diagnosis and treatment of disorders of the ear, nose, and throat.

*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 exposures of other employees in the workplace.

*Sound level meter* - An instrument for the measurement of sound level.

*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.