

# HenSu Holdings

## PROCEDURE

Procedure Title:	Hearing Conservation	SOP Number:	SOP-100-02-PR-001
Procedure Owner:	Corporate HSE	Issuing Authority:	Chief Safety Officer

## HEARING CONSERVATION

Rev #	Rev Date	Changes	Approved	Issue Date
3	2/21/18	Added: 4.7.1	DWS	3/21/18
2	9/21/17	Editorial, added 4.5.2	DWS	9/27/17
1	2/24/16	Changes made in the following sections: 4.5.2; 4.5.2.1; 4.6.3; & 4.7.4	DWS	4/27/16
0	6/25/13	Complete Rewrite	DWS	10/1/13

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## 1.0 PURPOSE

The purpose of this procedure is to establish the minimum requirements for Hearing Conservation for STIS DBA Southeast Texas Industrial Services.

## 2.0 SCOPE

This procedure applies to all HenSu Holdings employees, contractors, subcontractors and visitors associated with an HenSu Holdings site.

## 3.0 RESPONSIBILITIES

The following personnel have responsibilities defined in this procedure:

- HenSu Holdings Managers
- HenSu Holdings Supervisors
- HenSu Holdings Employees
- HenSu Holdings Contractors
- HenSu Holdings Subcontractors
- HenSu Holdings Visitors

## 4.0 PROCEDURE

Each site shall make every attempt to prevent the possibility of incidents and accidents to employees while performing work activities in high-noise environments through compliance with safety regulations, training of employees to properly perform their job activities, and through employee involvement in safe work activities.

### 4.1 HEARING CONSERVATION PROGRAM

4.1.1 In order to determine what elements of the Hearing Conservation Program to implement, the following requirements shall be considered:

- 4.1.1.1 Should an eight (8) hour time-weighted average (TWA) of 85 decibels (dBA) be exceeded, elements of a hearing conservation program shall be implemented.
- 4.1.1.2 Should the maximum exposure level of an eight (8) hour TWA of 90 decibels (dBA) be exceeded, engineering or administrative controls shall be implemented or supplemental hearing protection shall be provided if appropriate.

4.1.2 See Exhibit 7.1 for permissible noise exposure levels and how to calculate for TWA.

### 4.2 NOISE EXPOSURE DETERMINATION

4.2.1 Any area where noise levels are at or above 85 decibels (dB) for a substantial portion of the workday should be considered a prime candidate for employee exposure monitoring.

- 4.2.1.1 To determine where these areas are located, a sound level meter shall be used to conduct area sampling.
  - Examples of typical high noise areas include compressors, arc gouging, welding machine packs, grinding, etc.
- 4.2.1.2 Once the suspect areas have been located, arrangements shall be made to develop and implement a monitoring program.

- **Rule of Thumb:** If someone is standing within two (2) or three (3) feet of a person and they can't clearly hear and understand a normal conversation with them, they should be wearing hearing protection.

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- 4.2.2 If any employee is exposed to more than one (1) high-noise area, then all high-noise areas to which the employee is exposed shall be sampled.
- 4.2.3 Sound level instruments used for monitoring shall be capable of reading integrating continuous, intermittent, and impulsive sound levels from 80 to 130 dB.
  - 4.2.3.1 These instruments shall be calibrated to ensure measurement accuracy.
  - 4.2.3.2 Smart phone apps are not approved meters, and shall not be used for this purpose.
- 4.2.4 Employee exposure measurements shall be retained for at least two (2) years and shall include the following information:
  - 4.2.4.1 Employee identification.
  - 4.2.4.2 Description of equipment utilized.
  - 4.2.4.3 Equipment calibration record.
  - 4.2.4.4 Average dB level over eight (8) hour workday.
- 4.3 EMPLOYEE NOTIFICATION
  - 4.3.1 Employees who are exposed to an eight (8) hour TWA of 85 dB or greater shall be notified.
  - 4.3.2 Employees or their representatives may observe any noise measurements that are conducted.
- 4.4 ENGINEERING AND ADMINISTRATIVE CONTROLS
  - 4.4.1 Feasible engineering or administrative controls shall be used when it has been determined that exposure exceeds an eight (8) hour TWA of 90 dB.
- 4.5 HEARING PROTECTION
  - 4.5.1 If engineering and administrative controls fail to reduce noise exposure levels, or are unfeasible, personal protective equipment (PPE) shall be provided to reduce the noise exposure levels below an eight (8) hour TWA of 90 dB, or 85 dB for those persons who have experienced a standard threshold shift.
  - 4.5.2 Hearing protection (PPE) shall be evaluated and provided for the specific noise environment in which the protection will be used.
  - 4.5.3 Suitable hearing protectors shall be made available to affected employees that offer sufficient attenuation to prevent hearing loss, and their use shall be mandatory. (Employers are advised to give workers a choice between at least one type of ear plug and one type of muff.
    - 4.5.3.1 It shall be the employee's responsibility for wearing the hearing protectors. Employers shall ensure that hearing protectors are worn.
    - 4.5.3.2 Hearing protectors shall be replaced as necessary. Dirty or contaminated ear plugs should never be re-used.
    - 4.5.3.3 Some activities such as arc gouging or use of high-speed grinders may require additional hearing protection. Ear plugs AND slip over ear muffs should be used in these cases.
    - 4.5.3.4 Entertainment devices shall not be allowed to be worn on or in the ear in lieu of approved hearing protection. This shall include, but is not limited to, ear muff or ear bud style musical devices.
    - 4.5.3.5 Employees who wear hearing aids that prevent ear plugs from being able to insert into the ear canal shall wear ear muffs as hearing protectors.
- 4.6 AUDIOMETRIC TESTING PROGRAM

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- 4.6.1 An audiometric testing program shall be established and maintained for employees that are exposed to an eight (8) hour TWA of 85 dB or greater.
- 4.6.2 Testing shall be conducted by an audiologist, otolaryngologist, physician, or certified technician using audiometric measuring instruments and test booths.
- 4.6.3 A baseline audiogram shall be established within six (6) months of an employee's first exposure at or above an eight (8) hour TWA of 85 dB if clinical evaluation is used or one (1) year if a mobile test van is used.
- 4.6.4 If an employee has been separated from the company and then returns, they shall be subject to having a new baseline audiogram established as per 4.6.3.
- 4.6.5 Testing to establish a baseline audiogram shall be proceeded by a minimum of fourteen (14) hours without exposure to workplace noise.
  - 4.6.5.1 Hearing protectors may be used as a substitute for the requirement of fourteen (14) hours without exposure to workplace noise.
- 4.6.6 Subsequent annual audiograms shall be conducted for all employees exposed to an eight (8) hour TWA of 85 dB or greater, and a review of the annual audiogram as it compares to the baseline audiogram shall be conducted.
- 4.6.7 If a comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift, the employee shall be informed in writing within 21 days of the determination.
- 4.6.8 Additional hearing protector requirements exist for those employees who experience a standard threshold shift. If necessary, a medical evaluation may be required.
- 4.6.9 Audiometric test records shall be retained in the employee's medical records for the duration of the individual's employment plus thirty (30) years, and shall contain the following information:
  - 4.6.9.1 Name
  - 4.6.9.2 Job classification
  - 4.6.9.3 Date of audiogram
  - 4.6.9.4 Examiner's name
  - 4.6.9.5 Last date of calibration
  - 4.6.9.6 Employee's most recent noise exposure assessment
  - 4.6.9.7 Background and sound pressure levels in audiometric booth
- 4.6.10 Employees should refer to SOP-100-02-PR-010 – Medical Records for information on obtaining copies of their audiometric test records.
- 4.6.11 Subcontractors are required to adhere to the standards set forth above with respect to employees of the subcontractor who are exposed to an eight (8) hour TWA of 85 dB or greater at such worksites, if such worksites include any HenSu Holdings facilities.

## 4.7 TRAINING REQUIREMENTS

- 4.7.1 All employees shall attend noise assessment training prior to initial assignment and annual thereafter.
- 4.7.2 All employees who are exposed to noise levels equal to or exceeding 85 dB per eight (8) hour TWA shall be required to participate in the company Hearing Protection Training Program.
- 4.7.3 Training shall be repeated annually and documented for employees required to take part in the Hearing Conservation Program, and shall include the following information:
  - 4.7.3.1 Effects of noise on hearing

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- 4.7.3.2 The purpose of hearing protectors
- 4.7.3.3 Advantages, disadvantages, and attenuation of various types of hearing protectors
- 4.7.3.4 Instruction on selection, fitting, use and care of hearing protectors
- 4.7.3.5 Purpose of audiometric testing and explanation of test procedures
- 4.7.4 Training shall be updated, consistent to changes in PPE and work processes. The employer shall make available to affected employees copies of the noise exposure procedures upon request, and shall also post a copy in the workplace.
- 4.7.5 Annual baseline audiograms and training shall be entered into the HenSu One data

## 5.0 base. REFERENCES

OSHA 1910.95	Occupational Noise Exposure
OSHA 1926.52	Occupational Noise Exposure
OSHA 1926.101	Hearing Protection
SOP-100-02-PR-010	Medical Records

## 6.0 TERMINOLOGY

<b>Audiogram</b>	A chart, graph or table resulting from an Audiometric test showing an individual's hearing threshold levels as a function of frequency. A baseline audiogram is one from which future audiograms are compared.
<b>dba</b>	The sound pressure level reading in decibels made on the OSHA required A-weighted scale of a sound level meter on slow response.
<b>Standard Threshold Shift</b>	A change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more at 2,000, 3,000 or 4,000 Hz in either ear.
<b>Time Weighted Average (TWA)</b>	An average noise exposure over a period of time; normally eight (8) hours per day.

## 7.0 EXHIBITS

### 7.1 Permissible Noise Exposures

Duration Per Day	Sound Level Slow Response
8 hours	90
6 hours	92
4 hours	95
3 hours	97
2 hours	100
1-1/2 hours	102
1 hour	105
1/2 hour	110

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When the daily noise exposure is composed of two (2) or more periods of noise exposure of different levels, their combined effect should be considered rather than the individual effect of each.

$D=100 (C1/T1+C2/T2+\dots+Cn/Tn)$ .  $Cn$  indicates the total time of exposure at a specified noise level.  $Tn$  indicates the total time of exposure permitted at that level. Exposure to impulsive or impact noise should not exceed 140 decibels peak sound pressure level.