

Occupational Noise Procedure

BP WIND ENERGY POLICIES AND PROCEDURES

Occupational Noise Procedure

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Occupational Noise Procedure

1.0 Purpose/Scope

- 1.1 The purpose of this Health, Safety, Security and Environment (HSSE) Procedure is to minimize personnel exposure to excessive noise in the work environment which could lead to irreversible hearing loss.
- 1.2 This Procedure applies to all employees and on-site contractors engaged in operations and/or work activities covered by BPWE HSSE Procedures, and where there are sound levels at or above the action levels established in this HSSE procedure.

2.0 Reference

- 2.1 OSHA 29 CFR 1910.95, Occupational Noise Exposure
- 2.2 OSHA 29 CFR 1926.52, Occupational Noise Exposure
- 2.3 OSHA 29 CFR 1926.101, Hearing Protection
- 2.4 HSSE 14.20.01 BPWE JSEA Procedure
- 2.5 HSSE 20.10.01 Personal Protective Equipment (PPE)

3.0 Responsibilities

- 3.1 Facility / Project Managers
 - A. Verifying implementation of this procedure,
 - B. Verifying that sound surveys and noise dosimetry testing are conducted,
 - C. Verifying that annual hearing tests, evaluation and training are conducted for workers covered by the Hearing Conservation Practice,
- 3.2 Supervisors
 - A. Verifying that personnel are wearing hearing protection when required and using it correctly,
 - B. Verifying that personnel covered by the Hearing Conservation Practice receive annual training and hearing tests (audiograms).
- 3.3 Employees
 - A. Complying with the Hearing Conservation Practice, including getting an annual hearing test (when required) and training,
 - B. Wearing hearing protection as required,
 - C. Participating in noise dosimetry events.

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4.0 Acronyms and Definitions

Acronyms Table

Acronym	Definition
dBA	Decibel measured on the A scale
HSSE	Health, Safety, Security, and Environmental
Hz	Hertz
OSHA	Occupational Safety and Health Administration
PPE	Personal Protective Equipment
STS	Standard Threshold Shift
TWA	Time Weighted Average

Definitions Table

Term	Definition
Action Level	OSHA established noise exposure level for employers to take specific actions towards protecting employee's hearing: 85 dBA (8 hr. TWA). This means instituting controls and monitoring are required at this level to determine if a hearing conservation program is necessary.
Audiogram	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.
Decibels (dB)	The sound pressure level reading in decibels made on the OSHA required A-weighted scale of a sound level meter on slow response.
Noise Dosimeter	An instrument worn by employees which measures, records and then averages sound levels over a period of time; normally an entire work shift
Noise Reduction Rating (NRR)	A rating in decibels of the relative protection given by a specific model of hearing protector; i.e. NRR=30, informs the potential user, this product will "hold out" approximately 30 decibels when worn according to instructions.
Permissible Exposure Limit (PEL)	OSHA established limit of employee's exposure to noise: 90 dBA
Sound Level Meter	An instrument designed to measure sound levels in the workplace at a given point and time.
Standard Threshold Shift	Is 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.
Time Weighted Average	An average noise exposure over a period of time; normally 8 hours per day.

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5.0 Procedure

5.1 Establishing Jobs and Areas that require hearing protection

- A. Determining specific jobs or areas that require hearing protection and/or a hearing conservation program can be accomplished in a number of ways:
- Consulting jobs/equipment listed in Attachment A. This should be the first step in determining the requirement to use hearing protection. Most combustion engine powered equipment that does not enclose the operator in a cab, and many other construction/maintenance operations exceed the 85 decibel action level. Hearing protection is required for these operations.
 - Noise monitoring with a sound level meter. This type of monitoring measures the sound level of an area or task and is typically used for areas or tasks that have little change in sound levels over time. This type of monitoring is not effective to measure areas or tasks where sound levels are influenced by variables such as other work nearby that may change.
 - Personnel monitoring with a noise dosimeter. This type of monitoring measures the actual noise that a particular worker is exposed to over a period of time during his or her normal duties in order to determine if the employee and other employees with similar duties should be included in a hearing conservation program.
- B. The type or types of noise measurement to use should be based on the advice of an appropriate HSSE Advisor or a qualified third party industrial hygienist or equivalent.

5.2 High Noise Areas

- A. In areas requiring the use of hearing protection (≥ 85 dBA), line managers who are responsible for those areas shall ensure signs are posted which state:

Caution
Hearing Protection Required

5.3 Approved Hearing Protection

- A. When engineering and administrative controls fail to reduce sound levels within designated high noise areas, and sound levels exist above the OSHA permissible exposure limits; approved hearing protection equipment must be worn. This may include locations where operating tools or equipment are prevalent, or when working near tools or equipment where sound level monitoring has confirmed a noise level which equals or exceeds 85 dBA on an eight hour Time Weighted Average (TWA).
- B. Approved hearing protection means ear plugs or muffs that are designed to reduce occupational noise levels that reach the user's ear. Approved hearing protection must be packaged with the noise reduction rating certified by the manufacturer.
- C. A variety of approved hearing protection devices, such as ear plugs or earmuffs, shall

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be made available, by the employer, to any personnel working in locations where the established OSHA Action Level is exceeded.

D. Effectiveness:

- It must be established that each protector selected will provide an effective noise reduction below the OSHA PEL. Noise Reduction Rating (NRR) is printed on the box or package of all approved hearing protectors.
- In general, earplugs can reduce noise reaching the ear by 25 to 30 decibels. Earmuffs can reduce noise 20 to 25 decibels.
- Wearing double hearing protection (ear plugs and ear muffs simultaneously) can give 3 to 5 decibels more protection than wearing plugs alone.

5.4 Hearing Conservation Program

- A. Workers who perform general industry type work (operations, maintenance, etc.) are required to be included in a hearing conservation program if their 8 hour time weighted noise exposure is at or above 85 dBA.
- B. Very specific regulations dictate the administration of a hearing conservation program as set forth in 29 CFR 1910.95, Occupational Noise Exposure.

5.5 Audiometric Testing

- A. An audiometric test (hearing test) is required when an individual's noise exposure equals or exceeds a TWA of 85 dBA (Action Level) or more over an eight-hour day.
- B. The decision on audiometric testing shall be made on an individual project basis, as determined by employee noise exposures.
- C. Audiometric tests shall be performed by, or under the direction of a Certified Audiologist, or equivalent.
- D. Audiometric tests are provided at no cost to the employee.
- E. A baseline audiogram is required within 6 months of an employee's first noise exposure at or above the Action Level.
- F. An audiogram is required at least annually after obtaining the baseline audiogram and the affected employee has continued exposure at or above the action level.
- G. Workers should have no significant noise exposure (occupationally or non-occupationally) for at least 14 hours preceding any audiometric test. The responsible line manager should accommodate and communicate this requirement to affected employees.
- H. If any audiogram shows an employee has suffered hearing loss also referred to as a Standard Threshold Shift (STS), the appropriate Site HSSE Manager must make a determination regarding OSHA recordability and further occupational noise controls.

5.6 Documentation

- A. All audiometric testing records are considered as part of an employee's medical record and shall be retained for the duration of employment of those affected individuals plus 30 years.
- B. Workplace noise exposure data shall be maintained by the Site Manager.
- C. Workplace noise exposure data shall be retained for a minimum of 2 years.

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- D. Individual noise exposure monitoring results will be maintained along with audiometric test records in the affected individual's medical file.
- E. All personal records required by this HSSE procedure must be made available to employees upon request.
- F. All training records will be maintained by the appropriate Site Manager.

G. Inspection and Storage

- H. Personnel must inspect their hearing protectors prior to use.
- I. Any hearing protector found to be defective shall be repaired or replaced immediately.
- J. Any hearing protector found to be soiled or unsanitary shall be cleaned or replaced prior to use. It should be noted, inserting soiled or contaminated earplugs into the outer ear canal can result in ear irritations/infections.
- K. Hearing protectors shall be stored in a manner, which protects them functionally, and maintains them in a sanitary condition.

6.0 Training

- 6.1 Personnel included in a hearing conservation program will receive training upon hire, and annually thereafter.
- 6.2 At a minimum, training topics must include;
 - The effects of noise on hearing
 - Hearing protectors; including selection, fitting, use and care instructions.
 - Audiometric testing, purpose, and procedures.
 - Worksite jobs, areas, and equipment designated as "High Noise", where hearing protection is required.
- 6.3 Personnel who are not included in a hearing conservation program but whose work may subject them to noise levels at or near the action level shall receive training on the appropriate use of hearing protection and the jobs, equipment, and/or areas where hearing protection is required. This may be accomplished and documented through the JSEA process.
- 6.4 A copy of 29 CFR 1910.95 shall be posted in each worksite affected by this HSSE procedure, also a copy will be made available to any covered employee upon request.

7.0 Auditing

- 7.1 The requirements called for in this procedure are subject to periodic inspection by the BP site manager and annually during the BPWE site specific audit.
- 7.2 This procedure shall be audited every three years.

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8.0 Attachment A:

Common Jobs and Equipment Requiring Hearing Protection

Evaluation of construction equipment under general use has determined that hearing protection is normally required when workers are involved in the following tasks or when workers are using the following equipment:

Pile Driving	Arc Gouging
Chain Saws	Concrete Pumper
Circular Saw	Ground Tamper
Table Saws	Cherry Picker (full Throttle)
Hydro-Blasting	Concrete Cut-Off Saw
Air Grinding	Front End Loader (Without Cab)
Electric & Pneumatic Grinding	Impact Wrench Operator
Welding Machine	Lawn Mower (Full Throttle)
Forklift (gas/diesel powered)	String Trimmer (Full Throttle)
Sand Blasting	Grout Pump (Pneumatic)
Concrete Corer & Saw	Pneumatic Chipping Hammers

This list is not all-inclusive and should only be used as a guide. If possible, actual decibel readings should be obtained. Operation of multiple noise sources in the same area, or reverberant noise (such as in a confined space), will result in higher noise levels; sound level measurements should be obtained.

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