Introduction to Noise - Simplified terms and definitions.

- **Action level:** The level of exposure to noise at which the employer must take certain actions (implement a hearing conservation program, offer hearing protection, conduct audiometric testing, conduct training, etc.). The OSHA action level for noise is an 8-hour Time Weighted Average of 85 decibels measured on the A-scale, slow response.
- **Area noise measurement or Noise survey:** A type of monitoring, where noise level readings are taken in different areas of the workplace, and the outcome is usually a "noise map" of the area.
- **Audible Sound:** Sound (or noise) at frequency humans can hear (20-20,000hz)
- **Audiogram:** The chart, graph, or table showing hearing threshold level as a function of frequency; a method of measuring degree of hearing loss.
- **Audiologist:** An audiologist is a professional who diagnoses, treats, and manages individuals with hearing loss or balance problems.
- **CAOHC:** Acronym for Council for Accreditation in Occupational Hearing Conservation. A non-profit organization dedicated to the establishment and maintenance of training standards for those who safeguard hearing in the workplace. The council is comprised of representatives from audiology, physician, nurse, industrial hygiene, safety and engineering professional organizations, all with an interest in hearing loss prevention.
- **Cerumen:** Earwax, which is produced by glands located in the external auditory meatus. Its function is to lubricate the skin and to prevent foreign objects from entering the ear.
- ***Community Noise:*** Any unwanted sound outside the workplace setting.
- **Decibels (dB):** The unit used to express the intensity of sound (sound pressure level). The decibel scale is a logarithmic scale in which 0 dB approximates the threshold of hearing in the middle frequencies for young adults. The threshold of discomfort is usually noted between 85 and 95 dB and the threshold for pain is between 120 and 140 dB.
- **Dose:** It is the percentage of time a person is exposed to noise that is potentially damaging to hearing. A noise dose of 100% and above is considered hazardous.
- **Dosimeter:** A small wearable device that continuously measures a worker's exposure to noise over a work shift. It is typically attached to the shoulder of a worker, close to the ear.

- **Dosimetry (Noise):** The process of measuring a worker's personal exposure to noise over a time period typically for eight hours, using a Noise Dosimeter. It calculates the cumulative dose and Time-Weighted Average to evaluate noise exposure.
- **Engineering Controls:** involve modifying or replacing equipment, or making related physical changes at the noise source, along the transmission path, or at the employee's workstation and location to reduce the noise level at the worker's ear. Examples of inexpensive, effective engineering controls include choosing low-noise tools and machinery, equipment maintenance, sound barriers, etc.
- **Exchange Rate:** The number of decibel increase which leads to a halving of allowable exposure time. OSHA uses a 5 dB exchange rate. NIOSH recommends a 3 dB exchange rate. For example, in OSHA regulations, the exchange rate is set at 5 dB. So, when looking at OSHA Hearing Conservation regulations, a worker may be exposed to 85 dB for 8 hours, but when the sound level is increased to 90 dB, the allowable exposure time is halved to 4 hours.
- **Hearing Conservation Program (HCP):** Required by OSHA regulations, which requires that a hearing conservation program be administered when employee noise exposures are 85 dBA TWA on slow meter response. This corresponds to a 50% noise dose (OSHA action level).
- **Hearing Protector Fit Test**: A method used to measure the amount of noise reduction provided by a specific hearing protector during a given fitting on an individual worker**.**
- **Hearing Protection Devices:** Personal protective equipment (PPE) to reduce a user's exposure and harmful effects to noise. Typical PPE includes earplugs and earmuffs.
- **Noise:** Loosely defined as unwanted sound.
- **Noise Induced Hearing Loss:** Hearing loss due to overexposure to noise, both in and outside of the workplace.
- **Noise Reduction Rating (NRR):** A number label developed by the U.S. Environmental Protection Agency (EPA) required by law to be shown on every hearing protective device sold in the United States. This number shows how much a hearing protection device can reduce noise in a laboratory setting.
- **OSHA:** Acronym for Occupational Safety and Health Administration. A US government agency that was set up in 1971 to ensure safe and healthful conditions on the job for workers. It issues regulations, called standards, which protect workers from various hazards on the job. It is part of the US Department of Labor.

- **Otoscopy:** A visual examination of the ear canal to determine if the ear drum is visible or obstructed.
- **Ototoxins / Ototoxicity:** A term typically associated with the sensorineural hearing loss resulting from administration of certain prescription drugs and exposure to certain chemicals used in the work environment. The risk of hearing loss can be increased in combination with noise exposure.
- **Personal dosimetry(sampling):** Personal monitoring to determine person/worker's noise exposure throughout a time period.
- **Permissible Exposure Limit (PEL):** An exposure limit that is published and enforced by OSHA as a legal standard. The PEL refers to levels of exposure and conditions under which it is believed that nearly all healthy workers may be repeatedly exposed day after day without adverse effects. Currently. The OSHA PEL for noise is 90 dBA as an 8-hour Time-Weighted Average (TWA). Exposures at and above this level are considered hazardous.
- **Standard Threshold Shift (STS):** As defined by OSHA is a change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more at 2,3 and 4 kHz in either ear.
- **Time Weighted Average (TWA):** An average of different exposure levels during an exposure period. A value, expressed in dBA, which is computed so that the resulting average would be equivalent to an exposure resulting from a constant noise level over an 8-hour period.

References

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5. US OSHA .29 CFR 1910.95 "Occupational Noise Exposure" Definitions. http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9744