SAFETY MEETING TOPIC

This form shall be completed and kept on file

Job Name _____ Location _____ Job No. _____

Meeting Leader _____ Title _____

Date Held _____ Place _____ Time _____

Subject of Meeting EFFECTS OF NOISE

The relationship between hearing loss and noise has been known for centuries. When the first Occupational Safety and Health Act was introduced, it contained a Noise Standard. At present this standard applies to any work place where average exposure to noise exceeds 85 decibels (db) or impact noises exceed 130 db.

Our primary means of communication is through speech and hearing. Imagine the frustration of those who cannot hear the words of others or even enjoy the sounds of music. Excessive noise is also believed to be related to illnesses caused by stress, accidents, poor job performance and irritability.

Problems associated with noise and hearing loss can be prevented. Upon completion of this training, you should be able to state why noise protection is needed, identify the type of protection that should be used and the purpose for testing.

Sound is a WAVE. When an object vibrates it pushes back and forth on the air. Your vocal cords vibrate when you talk. This sends out pulses or waves of air. The stronger the vibration the louder the sound. The faster the vibration the greater the number of pulses or waves.

Sound is measured by both the number of waves produced and the loudness. The loudness or softness is measured in DECIBELS (db). The softest sound that can be heard is 1 db. Normal conversation is about 50 db. A pneumatic drill is about 90 db.

The number of waves is the frequency or pitch. The average person can hear sounds in the range of 20 to 20,000 waves per second or hertz. Those sounds heard most clearly vibrate between 1,000 and 4,000 hz.

The OUTER EAR channels sound waves through the EAR CANAL to the EARDRUM. The eardrum vibrates. This vibrates the bones found in the MIDDLE EAR. They pass the vibration to the INNER EAR. Fluid in the inner ear picks up the vibration. Cells connected to the inner ear change the vibration into messages to be carried by the nerves to the brain. These cells are called hair cells. They have hair like fibers that blend with the vibration.

Loud sounds damage the hair cells. Initially the damage is temporary. After repeated exposure they become arranged in a disorganized manner. The supporting cells may degenerate. The loss is gradual. This is caused by the delayed release of messages from the hair cells. The amount of hearing loss will depend on the number and exact location of the damaged hair cells. The greater number of hair cells damaged the greater the hearing loss. The location of the hair cells damaged will cause you to lose the ability to hear certain pitches. You may also experience a ringing sound after a loud noise.