CONTROLLING NOISE EXPOSURE

Toolbox Talk
AGENDA

» What is Noise?
» Some Perspective
» Types of Exposure
» Health Effects
» Hearing Protection
» Inserting Plugs Properly
» Where are the Gaps?
WHAT IS NOISE?

» Noise is unwanted sound

» Noise levels vary significantly

• Noise is measured in decibels (dB)
  – Logarithmic rather than linear
  – An increase in 10 dB means sound is 10 X louder
    – E.g. 125 dBA is 10,000 times louder than 85 dBA

• What does this mean practically?
  – People are a poor judge of sound level and hearing protection needs to be worn properly and consistently
SOME PERSPECTIVE

» Quiet office ~ 40 dBA
» Normal conversation ~ 60 dBA
» Handsaw ~ 85 dBA
» 8-hour Occupational Exposure Level (OEL) ~ 85 dBA
» Bulldozer ~ 100 dBA
» Generator ~ 116 dBA
» Oxygen torch ~ 121 dBA
» Shotgun ~ 170 dBA

Source: Honeywell Noise Thermometer
TYPES OF EXPOSURE

» Exposure is a function of:
  • Work locations (routine)
    – E.g. Logging a compressor building or operating a frack pump
  • Work activities (tasks)
    – E.g. Blowing down a well or using tools that make noise such as pneumatic tools
  • Events (infrequent)
    – E.g. Site shut-down (ESD) and gas sent to flare
HEALTH EFFECTS

» Noise damages the inner ear
» Noise induced hearing loss is permanent
  • Dependent on intensity and duration
» Other health effects (stress):
  • Fatigue
  • Elevated blood pressure
  • Etc.
» At 85 dBA we expect ~8% of workers to lose hearing over a working lifetime

HEARING PROTECTION

» Only has value if it is worn all the time!

» Double protection only gets you 5 dBA extra protection because of bone conduction

» Without training, plugs may give you only 12 dBA of protection despite CSA class or grade.⁽¹⁾

» It typically takes more than one plug type to fit a large group of workers

Photos Courtesy of Honeywell
⁽¹⁾ http://multimedia.3m.com/mws/media/893196O/earlog-20.pdf?fn=EARLog%2020.pdf
INSERTING PLUGS PROPERLY

Images Courtesy of Honeywell
INSERTING PLUGS PROPERLY

PROPER FIT

YES

NO

Images Courtesy of Honeywell
INSERTING PLUGS PROPERLY

» A roll-down plug needs to be rolled down completely with no creases

» Lift outer ear up and back to straighten ear canal
  • Insert the plug and hold until the plug has expanded

» Fit Check: In a noisy environment, place your finger up against plug and lightly press or cup your hand over your ears
  • Do you hear a difference? If so, you need more protection and your plugs are likely not inserted properly
WHERE ARE THE GAPS?

» People do not wear hearing protection
  • “I know I am going to lose my hearing, it is part of working in the oil and gas industry”
  • Solution: education and enforcement

» People are not wearing protection properly
  • Solution: training, fit testing, etc.

» People need more protection
  • Solution: noise measurement and muffs available

» Noise is too high for PPE, other controls required
  • Solution: implement administration and engineering controls
HOW MIGHT THIS IMPACT US?

» Have we conducted noise measurements?

» Do workers really know how to use hearing protection?

» How confident are we that our workers are not going to loose their hearing?
ADDITIONAL INFORMATION

» Alberta Labour and Immigration, Workplace Health and Safety, Noise at the Work Site Bulletin, November 2009

» WorkSafe BC, Occupational Noise Surveys, April 2007

» WorkSafe BC, Hearing test results in the oil and gas industry, WorkSafe Bulletin, 2015

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