

Engineering Controls

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Engineering controls are methods used to help protect workers by eliminating or reducing hazards in the workplace. For weights and measures, these controls typically involve redesigning, changing, or substituting equipment but may also involve changing a procedure or implementing a new procedure. In contrast to what the name implies, engineering controls do not necessarily require an engineer to design it, they can be, and often are, designed by weights and measures inspectors. An inventive, safety-conscious inspector may come across a hazard or a potential hazard and design an effective engineering control to address it. This inspector may think the hazard was too unique or their idea isn't good enough and decides to not let his/her peers know about it. This can often be the wrong assumption. Sometimes multiple inspectors face the same hazard and are looking for effective control. It is important for administrators and supervisors to create an environment where inspectors are excited about sharing these types of discoveries.

Examples:

- One county had a trailer-mounted prover routinely used for testing vehicle tank meters (VTMs) dispensing gasoline. Inspectors often complained that the gasoline odor was too strong, so a supervisor purchased a section of steel chimney tubing with an elbow at the top to divert the fumes. The tubing fits snugly in the neck and is easily removed. The gasoline odor was successfully diverted, and complaints stopped.
- New York's propane provers are equipped with three trailer leveling jacks that also provide a means for providing an electrical ground. Often, it is necessary to use blocks beneath the jacks to achieve a level condition. When all three jacks have blocks, especially wooden blocks, the electrical bond can be compromised. The division had a local shop make steel blocks to replace the wooden blocks so the ground could be maintained.

Assessing new and existing equipment for suitability and potential hazards is also an engineering control. Inspectors using the equipment should be aware of safety features, adjustments, emergency stops, etc. Equipment should be evaluated for the area in which it will be used in and consideration should be given to the use of reflectors, flags, flashing lights, horns and other features that will not only protect inspectors but other people who may be in the area. Of course, as with all engineering controls, regular maintenance is essential, and equipment must be regularly checked to ensure proper operation and effectiveness of safety features. A good example of this is the bonding clamps on trailer mounted prover systems. Without regular maintenance they will corrode, and electrical continuity can be lost.

The Occupational Safety and Health Administration (OSHA) considers engineering controls one of the top methods of controlling hazards, even placing it above personal protective equipment (PPE) in terms of increasing effectiveness. These controls provide an opportunity for inspectors to use their technical knowledge and education to resolve safety issues/problems. It is always a good idea for administrators and supervisors to ask about any safety innovations when conducting meetings. These innovations could be something an inspector made, a new PPE, or a new piece of safety equipment. It is also a good practice to showcase engineering controls implemented by an inspector or jurisdiction so the control

can be copied or improved. A clever design or procedure implemented by one inspector, in one area, may save another inspector from serious injury in a different area, but only if other inspectors are made aware of it.