

SAFETY AROUND PUMPING UNITS

Travis Bell
Lufkin Automation

The pumping unit is one of the most recognizable features of the oilfield, but what most people do not recognize is the hazards that the unit creates. The pumping unit is a slow, quiet, and unimposing piece of equipment, but don't let it fool you. Though the pumping unit is slow, it is made up of incredibly heavy parts that move with tremendous force that can kill or seriously injure you without warning. This paper will cover the basic safety procedures used while working around pumping units in order to achieve the overall goal of everyone going home accident and injury free.

The first step to safely working around a pumping unit is to have a good pre-job plan. While creating a pre-job plan, the employee must take many situations into consideration. The employee must be aware of all hazards, unseen as well as obvious. Unseen hazards include things such as H2S or maybe a faulty electrical connection. Obvious hazards include things such as overhead power lines or weather conditions. Each employee must be trained to recognize both types of hazards. After the pre-job plan, or JSA, is completed, the site leader must communicate all known hazards with every employee during a tailgate meeting before the job is started.

The next step to being safe around pumping units is to make sure every employee on site has the proper Personal Protective Equipment (PPE). Each employee should be provided with a hard hat, work gloves, safety shoes, eye protection, and a H2S monitor as well as job specific PPE such as fall protection, hearing protection, and FR clothing. It's very important that each employee be provided with PPE because it is your last line of defense in the event that an accident does occur.

The third step to preventing injuries around pumping units is to have a Zero Energy Procedure in place. Most pumping units move with tremendous force and energize without warning so it is very important to make sure that all types of energy are isolated before starting work. The first step in the Zero Energy Procedure should be to lock out the power source and place a tag on the lock to prevent others from removing it. After the lock is in place, the employee must remember to test or try the equipment to make sure that no stray current has made it past the electrical disconnect and into the equipment. Next the employee should isolate all potential energy by securing the break drum or reducer sheave with a chain and binder and engage break pawl if provided. Zero Energy Procedures are very important because most injuries occur when the unit unexpectedly energizes while an employee or piece of equipment is in the line of fire.

The last step in working safely around a pumping unit is making sure that all guards are in place while the unit is energized. The site leader must recognize if a unit has the proper guarding in place such as belt guards, weight guards and wellhead guarding (if required). In the event that guarding is not in place or missing, work must be stopped until the guard is replaced or the unit is de-energized.

Safe work practices around pumping units are important to help achieve the goal of every employee getting to go home day in and day out accident and injury free. Remember the pumping unit does not discriminate; it can injure or kill not only the greenest of employees, but also the most seasoned of oilfield hands. The pumping unit is big, slow and moves with hypnotic grace but it is very dangerous and demands lots of respect. When employees are properly trained and procedures followed, the pumping unit is transformed from a killer to a very helpful and necessary tool in fulfilling our energy needs.



Lufkin Employees wearing proper personal protective equipment



Lock and Tag Properly Placed on Disconnect



Chain and Binder Properly Placed on Break Drum



Swing Arm Rotating Outside Weight Guard

