Safety Training for the Oil and Gas Worker

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Over 450,000 workers were employed in the oil and gas extraction and support industries in 2011. These workers were engaged in many different industrial processes needed to successfully drill and service a well. These processes frequently require the use of specialized equipment and specialized work crews.

According to the Census of Fatal Occupational Injuries from 2003 to 2010, 823 oil and gas extraction workers were killed on the job—a fatality rate seven times greater than the rate for all U.S. industries. This database also reports similar fatality rates since at least the early 1990s.

In addition, the Bureau of Labor Statistics reported in August 2013 that the oil and gas industry has had a 23 percent increase over last year in its fatality rate. To combat the increase in fatalities, OSHA has indicated that there will be a “national stand down for safety” for the oil and gas industry in November 2013.

Currently, for regions located in areas of significant oil and gas drilling, OSHA uses national, regional, and local emphasis programs to inspect oilfield worksites. Five OSHA regions had emphasis programs at the time this was written. They were all set to expire on September 30, 2013. Oftentimes these are replaced with new programs to avoid gaps in OSHA’s scrutiny of the oil and gas industry.

Understand the OSHA regulations
Many hazards found on oil and gas well drilling and servicing rigs are common to virtually all workplaces. These hazards are typically addressed by OSHA’s General Industry Standards (29 CFR Part 1910) and the Construction Standards (29 CFR 1926). When a serious hazard exists in the workplace that is not addressed by a specific standard, OSHA may apply Section 5(a)(1) (“General Duty Clause”) of the OSH Act.

Recognizing hazards is the first step in protecting employees on oil and gas drilling and servicing sites.

Identify hazards
Safety and health hazards and dangerous conditions that can result in fatalities for oil and gas workers include:

- Vehicle accidents
- Struck-by/caught-in/caught-between
- Explosions and fires
- Falls
- Confined spaces
- Chemical exposures

Training for oil and gas workers on drilling and servicing sites often falls into the same category as for general industry and construction workers. Hazards common to many industries, including oil and gas, are falls from elevated platforms, slipping/tripping hazards, and machine guarding hazards.
However, the unique hazards and special work circumstances on oil and gas sites often require specific hazard training. Unique hazards include those related to the cathead and rotary table (caught-in and struck-by hazards) and well pressures (explosions, fire, and struck-by hazards).

**Protect employees**

OSHA requires employers to provide employees with a safe work environment. To do that properly, an assessment of the worksite for hazards must be made. That is where the identification of any unique hazards will be uncovered.

Once hazards are identified, employers have to provide a way to control or mitigate them.

**Control exposures**

Controlling exposures to workplace hazards is the fundamental method of protecting workers. A “hierarchy of controls” should be used as a means of determining how to implement effective controls. The National Institute for Occupational Safety and Health recommends the following order of preferred control:

1. **Elimination** — Eliminating the source of the hazard (e.g., using a dry scrubbing pad rather than a dangerous chemical).
2. **Substitution** — Using a less hazardous chemical or piece of equipment.
3. **Engineering controls** — Removing a hazard or placing a barrier between the worker and the hazard (e.g., ventilation, guarding).
4. **Administrative controls** — Using procedures and methods that significantly reduce exposure to hazards by altering the way in which work is performed (e.g., job rotation, alternative tasks, redesign of work methods, and rest breaks).
5. **Personal protective equipment** — Providing devices that are worn or used while working to protect the employee from exposure to workplace hazards. PPE includes respirators, safety glasses or goggles, hearing protectors, gloves, steel-toe safety shoes, etc.

**Provide training**

Training plays an important role in protecting workers from the identified hazards. Effective safety and health training is needed to make sure employees (including contract workers) understand the hazards to which they may be exposed and how to prevent harm to themselves and others.

Employers are required to provide workers with training that addresses the hazards particular to their worksites. These training programs must provide employees with complete information on:

- Processes they are involved in,
- Equipment they might need to use,
- PPE and other protection available, and
- Potential effects of exposure to chemicals.
Training timetable
Employee safety training must be done on specific safe work practices before an employee begins work. Additional training is needed for new work processes and when accidents and near misses occur. Refresher training is also necessary for some topics on a routine basis. Some of the OSHA standards that require training include fall protection, confined spaces, hazard communication, and operating material handling equipment.

Types of training
Training can take many forms: formal classroom training, daily safety huddles, and online training. In addition, safety programs must include on-the-job mentoring and task- and site-specific training.

Initial classroom training is an effective way to teach rig hands proper safety procedures before they step onto a rig site. The training can consist of lecture, video training, and simulated hands-on training. This type of training is also a good way to provide needed refresher training for experienced workers.

Daily safety meetings (often referred to as “safety huddles” or “safety scrums”) take place at the rig site, usually before an employee’s shift or tour begins. They are typically short, informal meetings and can take place in the doghouse, tool-pusher’s trailer, or even on the derrick platform. The meetings are a quick and effective way to instruct hands in the hazards they may be exposed to on their tour and provide guidance on protection and alerting procedures if there is a problem. The key is to “watch and be aware” of the hazards.

Online training is a convenient, self-paced way for workers to get the necessary training anytime, anywhere there is an internet connection. Rig hands can log on, relax, and learn at the speed they are comfortable with.

When new work and safety procedures and processes are instituted, employees need to be made aware of them and understand what they are required to do. That is where additional training comes into play; getting rig hands “up to speed” on how to protect themselves from any new potential hazards.

Accidents and near misses are often a sign that training is lacking. Reporting of all accidents and near misses should be encouraged, in order to take advantage of the freshness of the incident. Taking a safety stand down is a great idea when these occur. All hands can benefit from additional training. Often during the training, the cause of the accidents and near misses are discovered and solutions can be developed by employees and management to help prevent more incidents. Hands can “discover and uncover” the causes of the incidents.

Refresher training is an important way to reinforce safety practices that may have been taught months or even years ago. This training keeps hands “grounded and aware” of hazards they may have forgotten.
Rookie workers
Employees new to the oil and gas industry are especially vulnerable to being injured or killed in their first months on the job. These new rig hands typically have a greater risk of injury, not only to themselves, but to the experienced employees around them, as well. That is because these new hands have not worked with an established rig crew and may not be aware of important safety and work procedures. Because of this, rookie workers often need a higher level of training.

Experienced workers are often assigned “to keep an eye on” rookie employees during their first few months on the job. That is where the on-the-job mentoring and task- and site-specific training come into play.

Conclusion
With the oil and gas industry growing each year, the need for workers in this field is also rising. As new workers are hired, necessary preparation and training needs to be provided so that these workers are educated on the safe work practices associated with drilling and servicing a well. At the same time, experienced oil and gas workers should not be overlooked. They may need retraining to combat potential complacency or bad habits, as well as new safety and health hazards that may exist in this fast changing industry. Having knowledgeable and fully qualified employees on the worksite, whether experienced or new, creates a safer environment for all, and could ultimately save lives.
About the Author

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Mark Stromme is one of the lead safety editors at J. J. Keller & Associates, Inc. He specializes in OSHA construction and general industry safety and is an authorized OSHA Construction Outreach Trainer. At J. J. Keller Mark researches and develops content for a variety of proprietary products, including training videos, newsletters, handbooks, manuals, and software. His work has also appeared in ISHN, Occupational Health & Safety, Workplace HR & Safety, BIC, EHS Today, Modern Contractor Solutions, and Tow Professional. Mark contributed to the OSHA 5810 – Hazards Recognition and Standards Training for the Oil and Gas industry and speaks frequently to industry groups about safety and regulatory issues.

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- goals and objectives of an oil and gas safety program
- health and safety hazards in oil fields
- personal protective equipment and how to inspect, test and maintain it
- determining if an injury or accident is recordable
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