

Permit to work systems

A failure to monitor high risk work activities can result in serious injury to contractors, site visitors and staff and can cause subsequent property damage.

An example of this is evidenced in the explosion and resulting fire at the Piper Alpha offshore oil and gas platform, in the North Sea, UK, in 1988 that killed 167 workers that was reportedly attributed to human error and deficiencies in permit to work systems, hazard analysis and training ⁽¹⁾.

A permit to work system provides a systematic approach to the assessment of hazards and the implementation of safety precautions associated with high risk activities. The type of high risk activities that a permit to work system should detail include hot work, confined space entry and working at heights to name but a few.

A permit to work system is an important part of an organisational safety management system. Organisational policies should reflect those tasks that require the issuing and completion of a permit to work and where required those that form part of an accompanying Job Safety Assessment. Additionally, these systems should be audited and reviewed internally to ensure they are being complied with and remain current.



A permit to work should consider:

- ▼ the hazards that may be encountered when completing the high risk activity
- ▼ isolation requirements (e.g. for electricity, gas or other utilities or hazardous chemicals)
- ▼ special safety provisions and other control measures to ensure safety
- ▼ the period of permit validity
- ▼ communication and co-ordination with other permit to work activities
- ▼ the use, maintenance and limitations of personal protective equipment
- ▼ rescue, resuscitation and injury response requirements
- ▼ the location of the works
- ▼ pre-work conditions and testing
- ▼ training and competency
- ▼ permit authorisation and supervision
- ▼ review of works and permit closure.

Before issuing a permit to work the suitability, competency and qualifications of the person completing the works should be reviewed. Additionally, the supervision of the works and permit authorisation should be conducted by a competent person with the ability to suspend the works if adequate safety provisions are not met.

Work activities involving multiple permits must be managed to ensure conflicting tasks are co-ordinated in a safe manner. Adequate supervision should be maintained during permit to work activities, work areas should be left in a safe condition following all works and all permits should be closed upon task completion and review. Permit to work documents should be retained by the site.

Training, competency and supervision, coupled with a strong safety based culture, are crucial in ensuring that safety precautions relating to high risk works are adhered to by all involved in the work activity.

A failure to adequately identify and manage the hazards associated with high risk works can result in serious injury to staff, site visitors and/or contractors, property damage and interruption to business operations. Therefore, training and competency in hazard identification and the implementation of adequate control measures is paramount. Training programs focused on risk management and hazard identification techniques are essential to support the permit to work process.

Permit to work systems when adequately implemented, communicated, supported with training, managed and supervised, provide a means to systematically control hazards and provide a safe work environment for those engaged in high risk activities.

(1) Jahangiri M, Hoboubi N, Rostamabadi A, Keshavarzi S and Hosseini A, 'Human Error Analysis in a Permit to Work System: A Case Study in a Chemical Plant', 2015, Occupational Safety and Health Research Institute. Published by Elsevier. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4792918/> accessed 9/2/2018.