PSE OIL & GAS
PRESSURE RELIEF, FLARE & BLOWDOWN
CENTRE OF EXPERTISE

Training: Introduction to relief, blowdown and flare systems

DURATION:
1 day

COST:
Contact PSE

Evolving industry guidelines are changing the way Oil & Gas companies approach process safety in pressure relief, blowdown and flare systems. Engineers and operators should keep up-to-date with best practices and current requirements.

PSE's Centre of Expertise in pressure relief, flare and blowdown offers training courses to improve understanding in this important area. These training courses are complemented by free webinars and public seminars offered as part of PSE's worldwide Oil & Gas seminar series.

This 1-day course provides the basic theory of overpressure protection through pressure relief and depressuring, identifying the different applications of each methodology.

Participants gain a practical understanding of the design requirements, technology and systems required through examples and group exercises.

The course concludes with a short test to check participants' understanding. Participants will receive a certificate of training.

See psenterprise.com/oil-and-gas for dates and locations.

WHO SHOULD ATTEND

This training course is suitable for process engineers, chemical engineers and all those with responsibility for design and operation in the Oil & Gas upstream or downstream sectors.

The course is suitable for those approaching flare and relief system design for the first time or more experienced engineers wanting to update and expand their knowledge in this subject.

Course agenda

The training course includes lunch and refreshments.

08:30 **Registration**

09:00 **Introduction - Requirements for overpressure protection**

- Overview of a typical relief and flare system
- Examples of overpressure and underpressure

09:15 **Session 1 - Relief valves and their applications**

- Features of pressure relief valves and types
- Group exercise in relief system notation and feedback
- Current industry (API) standards and guidelines
- Sizing of relief valves
- Installation rules and 3% Inlet Pressure drop criteria
- Causes of overpressure
- Group exercise and feedback

10:40 **Break**

11:00 **Session 2 - Flare systems**

- Environmental issues
- Basic flare radiation theory and F-factors
- Governing flare load and header considerations
- Flare equipment, KO drums, seals, flare types
- Stack height and radiation calculations

12:30 **Lunch**

13:30 **Session 3 - Process depressuring**

- API guidelines / requirements for depressuring
- Fire zones and sectionalisation
- Depressuring theory / simulation approaches
- Fire survivability and stress mitigation for vessels

14:45 **Break**

15:15 **Session 4 - Material selection for low temperatures**

- Identifying risk of brittle fracture
- Cold front propagation through flare networks
- Project workflows to eliminate or mitigate risks
- Case study for gas processing plant

16:30 **Test questions on overpressure protection**

17:00 **Close and final discussion**