



Australian Government

Assessment Requirements for PMAOPS344 Operate and troubleshoot flare systems

Release: 1

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Modification History

Release 1. This version was released with PMA Chemical, Hydrocarbons and Refining Training Package, Release 2.0.

Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and:

- at least 2 times, each in a separate work context.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- physical plant and equipment including:
 - all items on flare system schematics and the function of each
 - flare equipment terminology
- policies and procedures including:
 - where to locate latest version of workplace maintenance documents and procedures
 - required preparation and permits for different types of work to be done on the flare unit or its component items
 - isolation requirements
 - role within permit system when taking flare custody back from maintenance
 - de-isolation principles
- operating parameters including:
 - basic flare-specific physics and chemistry relevant to operation of the flare system equipment and of the relevant upstream processes, to the level of being able to interpret the science and extract factors controlling the flare operation:
 - smokeless combustion
 - negative pressures after flaring hot vapours
 - Joule–Thompson effect
 - air ingress
- flare duty of care obligations
- key operating principles of flare equipment and associated ancillary equipment
- flare safe operating envelope for relevant process variables
- interactions between plant items/processes and the flare
- factors affecting efficient operation of the equipment
- specific key alarms and appropriate actions

- impact of external factors including variations in weather and feed
- the following signs of flare unit upset and corrective actions
 - high level or low level in knockout drum
 - icing up of flare lines or valves
 - low flare header pressure
 - loss of pilot gas or minimal gas flow
 - oxygen alarm
 - flame sensor alarm
 - black smoke – understanding the Ringelmann scale
 - extinguished pilot burners
 - flare height and noise levels
 - pulsing flame – relief valve chattering
- flare integrity limits, regulatory specifications and tolerances
- function and basic troubleshooting of major internal components
- the advantages and disadvantages of changing each of the variables during flare operational upsets
- correct methods of changing duty of flare equipment
- correct methods of reinstating and starting flare systems
- risk management including:
 - key safety systems and relevant procedures
 - knock on and escalation potential from process upsets and actions
 - emergency shutdown procedures and communication protocols
 - locations of muster points, spill kits, emergency response beacons and equipment relevant to the flare system
 - incident response role requirements within site safety management plan
 - appropriate application of hierarchy of control measures to control risks
- flare system hazards:
 - possible causes
 - potential consequences
 - appropriate risk controls
 - reporting and escalation procedures.

Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
 - flare systems
 - operating procedures
- abnormal situations must be relevant to flare operations.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=9fc2cf53-e570-4e9f-ad6a-b228ffdb6875>