
Overview

This Occupational Standard involves:

1. Preparing and starting up integrated gas fractionation process system for remote control operation
2. Remotely Controlling integrated gas fractionation process system
3. Preparing and Shutting down remote integrated gas fractionation process system
4. Facilitating the Maintenance of the Process Plant and Equipment
5. Complying with HSE and safe systems of work

Who is this standard for

This standard is recommended for process operators/technicians working in oil and gas production control rooms.

Performance criteria

You must be able to:

Preparing for and starting up the remote control operation

P1 obtain relevant operational instruction and ensure that information received on current operational status is accurate, complete and legible in accordance with worksite operational requirements and procedures

P2 brief relevant personnel and organise work of self and others where appropriate in accordance with worksite operational requirements and procedures

P3 accurately identify real and potential hazards and protect against them in accordance with worksite operational requirements and procedures

P4 Correctly prepare plant and utilities in accordance with worksite operational requirements and procedures

P5 carry out pre-start up checks in accordance with worksite operational requirements and procedures

P6 start up the process in accordance with procedures in accordance with worksite operational requirements and procedures

P7 Integrate plant and utilities and facilitate optimum processing in accordance with worksite operational requirements and procedures

P8 identify and take relevant action to deal with faults and any operational issues in accordance with worksite operational requirements and procedures

Remotely Control integrated process system **

P9 effectively maintain the process system ensuring steady state conditions maintained throughout in accordance with worksite operational requirements and procedures

P10 achieve required process system specification through appropriate work methods/ techniques in accordance with worksite operational requirements and procedures

P11 ensure that all information supplied and recorded is accurate, complete and legible in accordance with worksite operational requirements and procedures

P12 accurately identify and rectify faults and problems in accordance with worksite operational requirements and procedures

P13 promptly report deviations out with your responsibility in accordance with worksite operational requirements and procedures

Prepare and Shut down remote integrated process system

P14 effectively obtain operational instructions in accordance with worksite operational requirements and procedures

P15 accurately determine shut down time and make appropriate preparations for shut down in accordance with worksite operational requirements and procedures

P16 effectively brief relevant personnel on shut down procedures in accordance with worksite operational requirements and procedures

P17 accurately identify real and potential hazards and protect against them in accordance with worksite operational requirements and procedures

P18 ensure all information supplied and recorded is accurate, complete and legible in accordance with worksite operational requirements and procedures

P19 safely shut down the process system in accordance with worksite operational requirements and procedures

P20 effectively monitor shut down and correct faults and problems as appropriate in accordance with worksite operational requirements and procedures

Facilitate the Maintenance of the Process Plant and Equipment

P21 effectively apply and record inhibits or suppressions in accordance with worksite operational requirements and procedures

P22 effectively monitor process parameters when isolation is being applied (monitoring de-pressurisation where applicable, monitoring flare and or drains and ensuring process parameters are depleting in a controlled and steady manner) in accordance with worksite operational requirements and procedures

P23 effectively monitor process parameters during maintenance work scope being undertaken in accordance with worksite operational requirements and procedures

P24 effectively monitor process parameters during leak testing/service testing ensuring coordination with outside operator where required in accordance with worksite operational requirements and procedures

P25 effectively monitor process parameters during de-isolation and re-pressurisation – ensuring system returns back to normal operating pressures and levels in accordance with worksite operational requirements and procedures

P26 effectively remove and record inhibits or suppressions in accordance with worksite operational requirements and procedures

Comply with HSE and safe systems of work

P27 carry out relevant risk assessments and ensure that controls are in place to ensure that risks are as low as reasonably practicable in accordance with worksite operational requirements and procedures

P28 ensure that relevant safety briefings are carried out in accordance with worksite operational requirements and procedures

P29 work in accordance with safe systems of work

P30 take relevant steps to protect the environment in accordance with worksite operational requirements and procedures

P31 identify issues which may impact on safe systems of work and take relevant action in accordance with worksite operational requirements and procedures

P32 maintain relevant safety records in accordance with worksite operational requirements and procedures

Knowledge and understanding

You need to know and understand:

Process - General

- K1 The effects of the activities undertaken on the control panels in relation to the integrated process system and their functions
- K2 Explain the relationship and communication between control panel/logic and field instrumentation
- K3 The key differences between manual, auto and cascade control and their appropriate use
- K4 How to assign alarm priorities (Low/Medium/High/Journal)
- K5 Methods and limitations of normal flaring and cold flaring and appropriate use
- K6 the concept of hazard assessment and process hazard analysis techniques that may be utilised (e.g SIL Ratings including LOPA and HAZOP)
- K7 The principles of hydrocarbon hydrate formation – when/where it is expected to occur on your plant and what prevention and dispersion methods are available
- K8 Use and location for sources of information and interpretation of drawings, procedures and manuals regarding the plant
- K9 How to deal with plant production throughput (to include increase/decrease throughput, specified sequence, recommended rate)
- K10 Control Room monitoring requirements and considerations when leak testing is being carried out
- K11 How to monitor safety critical systems (to include flare and vent, emergency shut down, fire and gas) and when manual intervention is required
- K12 Identify all relevant sources of energy to prime movers and how to confirm availability
- K13 Properties of purging media and its effects on systems and/or instrumentation
- K14 How to access and interpret operational instruction including authorisation
- K15 The real and potential full plant shut down hazards (to include standby equipment operational, vents, noise, heat)
- K16 How to carry out a planned full plant shutdown (including sequence of shut down, recommended rate of shut down)
- K17 How/when to apply overrides, types of override and what permissions are required
- K18 methods and limitations of full plant depressurisation/pressurisation, blowdown, temperature, relief systems, drains, flares, vents

Process -Gas Fractionation

- K19 Plant layout of gas fractionation process and it's connection with other systems
- K20 The composition and properties of feedstock (to include toxicity, flammability, specific gravity and temperature)
- K21 The effects of loss of the gas fractionation process and it's re-instatement
- K22 Utilities required for the gas fractionation process and the effects of the loss of a utility and it's re-instatement
- K23 How to identify and rectify faults on the gas fractionation process
- K24 Types and causes of process upset conditions and the relevant actions to take when they occur
- K25 The normal operating parameters and associated tolerances for the gas fractionation process
- K26 The effects of changes in ambient conditions on the gas fractionation process
- K27 What steady state conditions are required for the gas fractionation process

K28 The reactions taking place, conditions and effects of the changes on the gas fractionation process

Safe Systems of Work*

K29 the implications of health, safety and environmental legislation

K30 interpreting operational requirements (e.g. policies, procedures, instructions, codes of practice, standards, schedules)

K31 the nature of information required (to include oral, written, equipment status, process status, handover reports)

K32 work area hazards (to include spillages, uncontrolled emissions, h₂s and other toxic substances, extreme weather conditions) and how to identify and control/minimise them and reduce risks to as low as reasonably practicable

K33 safe systems of work procedure

K34 consequences of emissions to the environment and procedures for dealing with spillages and uncontrolled emissions

Critical and Emergency Situations *

K35 critical conditions for the process and how to control and respond to them

K36 the effect and potential implications of loss of any critical process and its reinstatement

K37 the principles and effect of hydrocarbon hydrate formation, prevention and dispersion

K38 emergency response procedures for plant and location

K39 the operation and implications of the emergency shutdown (ESD) control systems

Scope/range

Safe **working practices:

Candidates must demonstrate safe working practices at all times. This will involve:

- wearing correct PPE at all times, where applicable
- proactively raising safety issues and participating in a safety culture
- ensuring work area is kept clear
- taking part in safety drills and briefings.

Working relationships:

Candidates must demonstrate effective working relationships at all times. This will involve:

- making clear efforts to establish and maintain productive working relationships
- ensuring effective communication with colleagues on operational matters
- communicating all relevant information on activities, progress and results to supervisors/managers
- providing support and advice for colleagues within limits of own responsibility and expertise.

Glossary

Equipment will typically comprise:

- a) fractionation column(s)
- b) reboiler
- c) overhead/reflux drum
- d) condenser/cooling fans
- e) pumps, filters

Links to other NOS

OGOS - PCR01 Operate an Oil and Gas Process: Control Room (Providing Steam)
OGOS - PCR02 Operate an Oil and Gas Process: Control Room (Tanker Loading - Oil)
OGOS - PCR03 Operate an Oil and Gas Process: Control Room (Storage Tanks - Oil)
OGOS - PCR04 Operate an Oil and Gas Process: Control Room (Tanker Loading – Liquefied Gas)
OGOS - PCR05 Operate an Oil and Gas Process: Control Room (Storage Tanks – Liquefied Gas)
OGOS - PCR06 Operate an Oil and Gas Process: Control Room (Gas Compression)
OGOS - PCR08 Operate an Oil and Gas Process: Control Room (NGL Systems)
OGOS - PCR09 Operate an Oil and Gas Process: Control Room (Gas Treatment)
OGOS - PCR10 Operate an Oil and Gas Process: Control Room (Gas and Liquid Inlet Facilities)
OGOS - PCR11 Operate an Oil and Gas Process: Control Room (Produced Water Treatment)
OGOS - PCR12 Operate an Oil and Gas Process: Control Room (Vent and Flare System)
OGOS - PCR13 Operate an Oil and Gas Process: Control Room (Pigging/Sphering Operations)
OGOS - PCR14 Operate an Oil and Gas Process: Control Room (Crude Oil Stabilisation)
OGOS - PCR15 Operate an Oil and Gas Process: Control Room (Well Products Separation)
OGOS - PCR16 Operate an Oil and Gas Process: Control Room (Wellheads)
OGOS - PCR17 Operate an Oil and Gas Process: Control Room (Well Integrity)
OGOS - PCR18 Operate an Oil and Gas Process: Control Room (Water Injection)
OGOS - PCR19 Operate an Oil and Gas Process: Control Room (Metering Systems)
OGOS - PCR20 Operate an Oil and Gas Process: Control Room (Drain Systems)
OGOS - PCR21 Operate an Oil and Gas Process: Control Room (Nitrogen Generation)
OGOS - PCR22 Operate an Oil and Gas Process: Control Room (Chemical Injection)
OGOS - PCR23 Operate an Oil and Gas Process: Control Room (Fuel Gas Supply)
OGOS - PCR24 Operate an Oil and Gas Process: Control Room (Diesel Distribution)
OGOS - PCR25 Operate an Oil and Gas Process: Control Room (Heating, Ventilation and Air Conditioning)
OGOS - PCR26 Operate an Oil and Gas Process: Control Room (Instrument and Service Air Supply)
OGOS - PCR27 Operate an Oil and Gas Process: Control Room (Water Systems)
OGOS - PCR28 Operate an Oil and Gas Process: Control Room (Hydraulic Control Systems)
OGOS - PCR29 Operate an Oil and Gas Process: Control Room (Heating Medium Supply)
OGOS - PCR30 Operate an Oil and Gas Process: Control Room (Power Generation)
OGOS - PCR31 Operate an Oil and Gas Process: Control Room (Testing Emergency Safety Systems)

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