

Process Safety Webinar Series - Part 3

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Operational Readiness (PSSR)

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What is Operational Readiness?

The systematic confirmation that a facility/plant/unit can be operated safely before hazardous material is introduced

KEY LESSON

Pre-Startup Safety Reviews (PSSRs) are key opportunities to verify effective implementation of design intent, accuracy of process safety information, and proper installation and configuration of field equipment.

Companies should conduct thorough and effective PSSRs before placing equipment in service.

When is Operational Readiness Necessary?

- Installation of a new facility
- Expansion of an existing facility, e.g., for higher production or improved productivity
- As part of the MOC process, even small changes e.g., rerouting of piping
- After a major shutdown/plant outage
- After a short shutdown or even a “park in place”

Operational Readiness is Made Up of....

- All punching activities to confirm the integrity of the pressure envelope
- All instrument checks to confirm operation of instruments
 - These need to be systematic and well documented
 - Functionality tests of SIS
 - Functionality tests on control valves
 - Functionality tests on alarms
 - Functionality tests of analysers/gas detectors
- Confirmation of line up of relief systems
- Confirmation of the correct position of permanent spades/blinds
- Confirmation of the position of locked valves

Operational Readiness is Made Up of.... (2)

- Emergency equipment must be available and operational, e.g., SCBAs, fire extinguishers, emergency showers, deluge systems on auto
- Start-up procedures which have been reviewed with the latest updates
- Training of operators on the latest procedures

Other Considerations....

- A walk through with a multi-disciplinary team to:
 - Confirm proper access to valves etc.
 - Confirm access to emergency equipment
 - Confirm access and egress in the case of an emergency
 - End caps/end blanks are in place
 - Equipment boards etc. are in place
 - Housekeeping is at an acceptable standard
 - No hoses have been left connected to the process

Other Considerations.... (2)

- Planning and Communication
 - Does the rest of the site know that a start-up is imminent?
 - Does the emergency response team know that a start-up is imminent?
 - Are there sufficient operators to perform a safe start-up?
 - Is there support from maintenance personnel required during start-up, e.g., instrument technicians for faulty instruments, fitters for opening blocked filters etc.?
 - Are they planned on a shift roster?

Minimum Requirements for PSSR

- Checklists can be used
 - Important that this does not become a “tick box” exercise
 - Different checklists can be used for different situations, but this should not result in confusion
- It must be documented
 - There must be clear reasons for exclusions
 - The accountable people must sign off on actions or to confirm the exclusions
- Approval by management of the PSSR before start-up is vital
 - Approval must preferably be by the legally [16(2)] appointed person for the unit before start-up

When it Goes Wrong....

- Low end consequences, e.g., a blind/spade in the wrong position which requires shutting down the plant to correct
- High end consequences
- Williams Olefins (13 June 2013)
 - 2 people fatally injured
 - The MOC was not done before the change and the PSSR which was done was incomplete
- BP Texas (26 March 2005)
 - No PSSR was done
 - Authorisation for start up was done by the Supervisor without confirmation that instrumentation checks had been completed



Thank you

Any questions?

