

Course Content

Title: Turnaround Process Engineer Mentoring

Potential PDH: 8

Code: BTT032

Description:

The objective of Turnaround Process Engineer Mentoring is to improve the skills and confidence of the junior engineer newly assigned to the role of unit turnaround support.

The Turnaround Engineer Mentoring includes three elements:

1. Element 1 – One Day Onsite Lecture
2. Element 2 – One Week Turnaround Discovery Onsite Mentoring
3. Element 3 – Remote Mentoring for the duration of the Turnaround (excluding startup)

The outline for Element 1 – One Day Onsite Lecture is provided below. Element 2 involves one week of onsite mentoring on a split-shift basis allowing for direct one on one mentoring with two engineers (one on day shift, one on night shift). Element 3 involves continued mentoring with a call cycle for guidance and stewardship throughout the remainder of the Turnaround event.

Outline:

1. What is a Turnaround
 - 1.1. Maintenance work that cannot be completed while online
 - 1.2. Planned to minimize downtime
 - 1.3. Work performed during TA is more costly than routine maintenance outside of TA
 - 1.4. TA work is executed primarily by contractors
 - 1.5. Internal access for API 510 compliance inspections, typically every 10 years
 - 1.6. Unit(s) or entire Refinery shutdown
2. Safety during Turnaround
 - 2.1. TA Safety organization usually different than Refinery
 - 2.2. Hazards unique to TA (LOTO, Isolation, Permits, etc.)
 - 2.3. Confined Space Entry (Hole watch, communications)
 - 2.4. Fall Protection
 - 2.5. Respiratory Protection
 - 2.6. PPE
 - 2.7. Long shifts, fatigue
3. TA Roles
 - 3.1. TA Coordinators, Mechanical Work Leads
 - 3.2. Operations
 - 3.3. Inspection
 - 3.4. Reliability
 - 3.5. Process Engineering
4. Unit Preparation for TA work
 - 4.1. Unit shutdown(s)
 - 4.1.1. Sequenced for fuel gas requirements, slop management
 - 4.1.2. Critical path equipment scheduled early if possible
 - 4.2. Cleaning and decontamination to prepare for TA work and/or entry

- 4.2.1. Cleaning to remove oil, solids, contaminants – steam out, water flush, etc.
- 4.2.2. Chemical cleaning
- 4.2.3. Decon to remove LEL, H₂S – stripping, chemical treatment
- 4.2.4. Treatment of pyrophoric iron deposits
- 5. Process Engineering Preparation for TA
 - 5.1. Know the planned work – maintenance, Inspection, projects, modification
 - 5.2. Know your equipment
 - 5.3. Be prepared for all Safety requirements (training, fit testing, etc.)
 - 5.4. Assemble reference material in easy to access location
 - 5.5. Review operating issues, plan investigation and data collection for these items & communicate to fellow Process engineers
 - 5.6. Assemble 'tool kit'
 - 5.7. Ensure any spray header, distributor testing, nozzle spray test, etc. plans are included in the TA planning
- 6. Role of Process Engineers during TA
 - 6.1. Support TA efforts: Inspections, Discovery issues, Operations, Mechanical work
 - 6.2. Inspect and investigate equipment condition
 - 6.3. Document findings and observations, as well as TA work performed on equipment
 - 6.4. Follow TA work progress and ensure all installations are per the instructions
 - 6.5. Report any discovery that requires additional TA work, follow-up with plan to repair or address
 - 6.6. Learn – Observe – Investigate – Document
 - 6.7. Sign off for equipment closure

Instructor:

Tracie H. Hoines is a degreed Chemical Engineer who has spent many of her 30+ years working as a Process Engineer in several ExxonMobil refineries where she has been responsible for the design, installation, and startup of the Crude, Coker, Hydrofining Units, and Utilities. Ms. Hoines is noted for her excellent communication skills which facilitate teamwork and strong computer skills which enable her to quickly learn new systems.