



PSR

PERFORMANCE | SAFETY | RELIABILITY

PSR INTERACTIVE



MAINTENANCE INTERFACE 01 - TURNAROUND & INSPECTION

This program is designed to give your production personnel the knowledge, skills and focus to maximize the performance, safety and reliability of your major shutdowns, covering in detail topics such as:

- developing the shutdown worklist
- preparing for shutdown
- purging, decontaminating and blinding
- soda ash washing stainless steel
- decoking fired equipment
- preparing for startup
- conducting pre-start checks
- removing air and water

CONTENT	DESCRIPTION
Introduction	A brief introduction designed to prepare trainees for the modules that follow
Module 01 - T&I Scope of Work	<p>Constraints - schedule, materials, resources, equipment, budget, equipment accessibility</p> <p>Sources Of Worklist Items - inspection, maintenance, process engineering, operations, engineering and projects</p> <p>Initial Entry - safe isolation, master blind list, equipment blinds, purpose, hazards, general entry</p> <p>Cleaning - descaling, sludge and solids removal, heat exchanger bundles, fin fan tube bundles, machinery, control valves and burners</p> <p>Inspection - purpose, frequency, non-destructive and destructive test methods</p> <p>Repairs & Replacement - management of change</p> <p>Pressure Testing & Certification - equipment hydrotesting and relief valve testing</p>
Module 02 - Preparing for Shutdown	Operator competence, availability, supervision, shift change, maintenance availability, tools and equipment, scaffolding, ladders & platforms, valves, hoses, spoolpieces, blinding positions, reducing/exchanging bolts, defeating ESD systems, fire & safety coverage, notifying interested parties, nitrogen availability & quality

PROGRAM INFO

CATEGORY:
Maintenance Interface

MODULES:
9

PROGRAM DURATION:
330-465 mins (approx)

As with all our programs, the content is self-paced. Users are able to validate their understanding of the material through embedded interactive quizzes

Our programs are based on internationally recognized best practices and are designed to enable your production personnel to make a personal contribution to maximizing your profits and minimizing your losses

For further details of the style and methodology of our training programs, please refer to our website, where you can watch a demo video and apply for a free trial:

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CONTENT	DESCRIPTION
Module 03 - Purging, Decontaminating & Blinding	<p>Risks & Consequences - Pulling Fires - Light Oil Flushing</p> <p>Steam Purging - advantages and disadvantages, personal safety, equipment limitations, organized and systematic, displacement of process fluids, piping hammer, environmental nuisance, thermal shock, effects of heat loss, installation of battery limit blinds, steam purge to atmosphere and dangers of iron sulfides</p> <p>Gas Purging - advantages and disadvantages, catalyst changeout, gas sweep, nitrogen purge, nitrogen blanket and installation of battery limit blinds</p> <p>Chemical Decontamination - advantages and disadvantages, applications, preparation, filling with water, chemical injection, emptying and rinsing, vapor phase decontamination, vapor and liquid phase decontamination</p> <p>Blinding - installation of battery limit blinds, updating the Master Blind List</p>
Module 04 - Soda Ash Washing	<p>Causes of stress corrosion cracking, susceptibility to stress corrosion cracking, prevention of stress corrosion cracking, preparing piping & equipment, preparing soda ash solution, filling, circulating or soaking, testing and duration of protection</p>
Module 05 - Decoking	<p>Causes Of Coke Formation - uniform coke deposition, partial or total loss of process flow, change in process flow regime or flame impingement</p> <p>Effects Of Coke Formation - localized high temperatures and overstressing</p> <p>Decoking Equipment - swing elbows, steam-air measurement and control, decoking effluent quench</p> <p>Decoking Hazards - overheating, tube oxidation, tube erosion, insufficient quenching, operator error and personnel injuries</p> <p>Decoking Methodology - heat up, steam spalling, steam-air burning, cooldown</p>
Module 06 - Preparation for Startup	<p>Operator competence, operator availability, operations supervision, shift change, maintenance availability, tools and equipment, scaffolding, ladders and platforms, hoses, spoolpieces, blinding positions, defeating ESD systems, fire and safety coverage, notifying interested parties, nitrogen availability, nitrogen quality, nuts and bolts in high pressure service, common startup mistakes</p>

CONTENT	DESCRIPTION
Module 07 - Prestart Checks Part 1	<p>Overview - mechanical completion, prestart checks, checklists, startup risks, sequence</p> <p>Piping Checks - risks, checklists, flanges, screwed fittings, valves, utility connections, hoses, heat tracing, insulation, supports</p> <p>Instrument Checks - risks, categories, level measuring elements, temperature measuring elements, pressure measuring elements, flow measuring elements, analytical measuring elements, enclosures, control valves, alarms and trips</p> <p>Relief Valve Checks - test stamps, wire seals, block valves, changeover valves, lifting levers, obstructions, open ends</p> <p>Vessel Checks - risks, instrument taps, distributors, demister and coalescer pads, packing materials, tray assembly, vessel skirts, close-up authorization, final close-up check</p>
Module 08 - Prestart Checks Part 2	<p>Machinery Checks - risks, foundations and baseplates, drivers, process and utility piping, lubrication systems</p> <p>Fired Equipment Checks - burners, refractory, radiant tube supports, radiant tube skin thermocouples, stack dampers, induced, forced and balanced draft systems, firebox close-up</p> <p>Heat Exchange Equipment Checks - witnessing pressure tests, expansion and contraction, leveling, header plugs, louvers, finfan drive belts and machinery guards</p> <p>Electrical Checks - risks, cables, cable conduits, cable trays, cable ducts, earthing straps, lightning conductors, field switchgear and distribution boards, ammeters, local control panels, temporary power outlets, plant lighting, rooms and buildings</p> <p>Safety Checks - scaffolding, safety equipment, chemicals and lubricants, obstructions, gas cylinders, drains and sewers</p> <p>Defects - defect lists, critical and non-critical defects</p> <p>All Work Complete & Signed Off - shutdown worklists, inspection worklists, project work, defect lists, safe isolation</p>
Module 09 - Air & Water Removal	<p>Air - air hazards, air removal (steam purging), air removal (nitrogen purging)</p> <p>Water - water hazards, dryout, flushing</p> <p>Deblinding</p>
Test	<p>Trainees answer a random selection of questions to demonstrate understanding of the content covered throughout the modules</p>