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**DCU and FCCU Turnaround
Efficiency and Safety**



Top Safety Concerns

- Egress and access to pathways
- Working underneath or above other trades people
- Crane picks
- Wind or air tools blowing debris causing foreign body in the eye (FBE)
- Eye protection from arc flashing
- Control of sparks with no wetting
- Tripping on wiring and hose runs
- Lighting
- Weather protection from rain & wind
- Confined space inside of coke drums

- Emergency plans must be in place at all times with emphasis on the possibility of rapid extraction of personnel from the area
- Weld repair area had to be totally enclosed for arc gouging, sandblasting for weld overlay and finish grinding
- Shutdown all work for house keeping at the end of each shift
- Exhaust system built for the 6 generators in the coke pit to keep fumes away from work areas and confined space projects





- All contractors received extra safety training before the Turnaround started detailing the work scope and the dangers of working above and below each other
- Temporary lines were run to work areas from a vacuum truck so the arc gouging fines, sandblast sand and grinder dust could be removed from the weld overlay platforms and skirt replacement deck

Activities that require no workers in the area

- Over head crane picks
- Inspection X-ray of welds
- Emergency conditions in the unit or refinery

Unsafe actions

- Unauthorized modifications of scaffolding
- Hand grinder guards missing
- Not reporting to muster station during an emergency
- Faulty gas heater causes explosion and fire in over head vessel during PWHT
- Multiple personal harness violations

Then the Crude Unit had a Major Fire

FAILED

Egress routes

FAILED

Muster collection points

FAILED

Keeping folks in the refinery

FAILED

All of the work and training
for the fire escape plan

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