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MORE PRODUCTION - LESS RISK!

New Delhi, India  
October 2013

**SAFE COKER – PROFITABLE COKER**

- + Design - 18 KTPD Capacity, Highest – 20.9 KTPD Throughput
- + Three Blocks ( Six Coke Drums ) with common Blowdown & CCD
- + Double Fired Heaters with Pigging, OLS & SAD facility
- + Heater Run Lengths – 120-150 Days
- + Feed – Mix VR, FCC Slurry, Mangala VR, Refinery slop, Refinery Sludge
- + Low Recycle : 5-7 Wt%
- + DELTA valves for coke drum un-heading
- + Interlocks for all MOV's of coke drum & coke cutting system
- + ZERO failures due to corrosion
- + Maximum Mangla VR processing in any refinery
- + ZERO Slop unit

- + 'Safe at Risk' observations/audits by Senior Personnel from other units
  - + Work permit procedure audits & compliance
  - + SOP / SMP / Risk assessment for all activities – Routine and Non-Routine
  - + Tool box talks to contractor staff before any activity
  - + Weekly joint walk-through audits
  - + Safety refresher training at frequent intervals
  - + Operator Training based on GAP analysis / personal evaluation
  - + Multi-Disciplinary approval for High Risk jobs – Hot Tapping, Online Sealing
  - + All Modifications ( Temporary / Permanent / Software / Hardware ) through Management of Change (MOC) procedure
  - + Learning from incidents (LFI) knowledge sharing amongst all groups
  - + Training session before shutdown for contractors / employees
  - + Incident Investigation for all incidents
  - + Root cause analysis (RCA) for all failures
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- + Built in-house software for parameters close monitoring
- + Systematic and Methodical Approach by Plant Operations
- + Shift wise Pre-Programmed tasks
- + Historian / Records of all past data
- + Proactive approach
- + Avoid surprises - Improved Reliability
- + Leak detection and rectification programme (LDAR)
- + Multi discipline Grating check programme
- + Conveyor belt safety – Pull cords, Field Horns
- + Dead ends/zones audit & removal
- + Random positive material identification programme (PMI)

- + Conduction of Process Mock drills with different emergency scenarios.
  - + Share LFIs ( Learning from Incidents at different refineries) with operation crew.
  - + Prepared and maintain the Aspect Impact Risk Register for DCU.
  - + Provision of vibration probe at Coke drum to monitor cutting operation.
  - + Implementation of 5S in the plant as well as O & M.
  - + Integrated Hydraulic cutting system.
  - + Flowserve has supplied first time enclosure facility to safeguard the cutting tool at the Top Un Heading Device as special added safety feature.
  - + Done CIA inspection of Coke drum to improve reliability.
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- + Sustaining safety record during unit Revamp
- + Achieving 'ZERO HOT SPOTS' operation
- + ZERO conveyor system breakdown
- + Rigorous coke drums stress monitoring
- + Scope for Advance Process Control.
- + Early event detection programme (EED)

# Thank You

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