





Keynotes

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Delayed Coking

Delayed Coking

coking / decoking of heavy residue in the refining process









what to do with this low price ? how can we survive with our business ?







Oilprice, Brent, 15 years





Oilprice, Brent, 15 years



PDW1



PDW1 Paul, Dr., Wolfgang, 8/28/2016

Oilproduction and trading



Oil Trading nations, (Wikipedia)





Oilproduction and trading



Oil Trading nations, (Wikipedia)





India





Delayed Coker Units

Coker in India

- Numarligarh
- Bongaigaon
- Guwahati
- Dig Boi
- Reliance I / II
- Gujarat
- Digboi
- Panipat
- Binar
- Essar
- HMEL
- MRPL
- Paradip
- CPCL
- BPCL
- Barauni
- Haldia



Delayed Coker Units in India

Humidity above 90%, often 100%

Delayed Coker Units (DCUs) in India are built in extreme ambient.

All equipment including the Coke Cutting Systems have to meet these requirements.

The requirements are summarized as

a) Ambient and Design conditions in warm areas

- temperature ranges from -3°C to +50°C, wetted parts 3°C to 120°C
- sun, wind, rain, dust, humidity

b) Refinery conditions

- hazardous, corrosive atmosphere, sea side
- operation mode manual / remote / automated
- c) Company specification
 - specification of final user, contractor, licensor

d) Local codes and standards

- other local codes

In the project and design phase itemsc) and d) are most important and should be metlatera) and b) are most important.





Development of coke production per drum view point from decoking aspects not process

What amount of coke do I have to cut in which time ?



Delayed Coker Units in India





Delayed Coker Units

DCU in 1990's Delayed Coking Equipment

Heater, Process equipment Switch valves, manual

Decoking Equipment

Deheading devices manual operated Jet Pump flow, pressure 250/200 Coke Cutting pneumatic hoists + DSDs Control System manual operation Relays / 1 PLC cabinet, DR (AB), 1600mm DCU in 2016 Delayed Coking Equipment

Heater, Process equipment Switch valves, autom, / remote

Decoking Equipment Deheading Systems Slide valves, remote/automatic Jet Pump flow, pressure 310/345 Coke Cutting electrical hoists + DSDs Control System manual /remote /auto-operation PLC cabinet, TMR/QMR, 9000mm



Delayed Coker Units

DCU in 1990's Delayed Coking Equipment Process equipment

Specification for Coke Cutting Send by mail in paper format Send by mail floppy discs start of sending too much data

Spec for mechanical equipment mainly pump / motor / gear Spec for instrumentation for standardisation in the ref. No spec for the Control System DCU in 2016 Delayed Coking Equipment Process equipment

Specification for Coke Cutting

Download from server MB's of data from autarc departments

Concentration on instrumentation and control systems

Do we believe that a coker becomes safer with larger control systems ? TMR/QMR instead of DR ?

Coke Cutting Systems 2016

Mechanical Design

Jet Pump unit

- Basic design related to coke drum diameter, coke type
- Flow and Head defined very precise, but without relation to detailed piping
 - Tested, checked acc. API610

Cutting System

- Basic design without detailed requirements
- Industrial standard is not available or not used for CCS

Instrumentation, PLC design

Control System

- Very detailed specified
- Dual-Redundant, TMR/QMR
- SIL rated
- Redundant I/O's for all data

Instrumentation

- SIL rated instruments
- Safety signals hardwired





Tendency worldwide

In the project and design phase items c) and d) are most important and should be met c) project specification d) local codes and standards During operation a) and b) are most important. a) Ambient and Design conditions b) Refinery conditions





Installations in India



Jet Pump





1st coke MRPL







THANKS FOR YOUR

ATTENTION

Coking.com , Mumbai 2016

