

2014 Cat Cracker Seminar

Mechanical

1. What is the industry experience with NO_x SCR's in regenerator flue gas service? Has it met the emission requirements? Does the soot blower performance meet expectations? What is the time between changing out the catalyst modules? How long does it take to change them out? Can you do this "on-the-run"? Do you proactively change them out at TA?
2. What's the next big hardware configuration opportunity for an FCC? Game changer technologies? If a new FCC were to be built what would be the design and design goals?
3. What criteria is proven for droplet size? Describe proven reliable design for spray nozzle insertion. What is the expected life of spray tips? What is the experience with dew point corrosion of pressure boundary nozzle due to delta temperature between flue gas flow and cooled nozzle spray?
4. Corrosion of single cells alternatives is rarely if ever seen in the industry. SpeedCells, speed hex, S bars and Curl Anchors® have not displayed these characteristics as far as I know. I think this is possibly due to the fact that the chances of the gases reaching the steel plate and initiating the corrosion from the steel side are minimal. Does anybody have similar experiences or knowledge of what the corrosion process is exactly and why it does not affect the single cell hex alternatives as much as hex itself? What is the future trend for materials (alloys) used to make hexmesh and associated products such as S-Anchors, Tabs, Curl Anchors®? Will 310 or other alloys be used instead of 304H and 410?
5. What are the current industry best practices for materials, design and operation of TSS underflow critical flow orifices and associated piping systems to minimize erosion and fouling (solids deposition)? How can you improve the reliability of regenerator third stage cyclone underflow critical orifice ceramic lining failure?
6. What can cause premature failure of regenerator flue gas line orifice plate refractory at the plate joint? Is excessive orifice pressure drop the root cause?
7. What can cause premature disbonding of reactor cyclone hex mesh refractory? How can it be mitigated?
8. How do owners (refiners) handle the evaluation and use of refractory products that are not specified by the equipment manufacturer but may offer advantages over specified material?
9. What are the general refractory repair options for the riser line of a reactor? I would like to know what the preferred method would be for a repair in place. Is shotcrete an option?
10. What is the latest technology distribution of spent catalyst at the bed top? Middle? What are the latest technologies for distributing spent catalyst in the regenerator?
11. What is the average age of cyclones requiring replacement? What are the criteria for replacement?
12. What types of valves are used for catalyst withdraw and what is the controlling philosophy? What are the current design recommendations for new or replacement lines (material, sweeps vs. cushioned tees, etc.)?
13. What are the reasons to change out a riser? Frequency of change-out?
14. Have upstream flue gas flow constraints or catalyst carryover impacted third stage performance? What are the key factors in determining the performance of the combined cyclone and third stage performance?
15. What are your major non-turnaround maintenance costs? What percent of total unit maintenance cost are the larger items?