Question 97: Disposal of catalyst fines from the slurry tank is expensive since they are handled as a hazardous waste. Do you have a way to reinject these tank fines back into the FCC where it would recover? What are other disposal options for these oil laden fines?

Tom Lorsbach (UOP)

I have seen operations at two refineries where FCC slurry tanks were decanted, and the remaining catalyst fines were resuspended with Orbijets and an LCO circulation loop. A slipstream of this LCO slurry was recycled to the riser. In FCC Unit A (~20,000 BPD) the recycled fines partitioned approximately 2/3 to the regenerator side and out with the flue gas and 1/3 partitioned to the reactor side and back out to storage with the main column bottoms product. This refiner successfully used this technique to clean the tank.

The other refinery that attempted this technique for slurry storage tank fines recycle was less successful. The FCC unit in this refinery was larger (70,000 BPD) and the quantity of tank fines for removal was much larger. The effort to recycle LCO slurry was too slow and had to be stopped because the operation could not be completed before the active slurry tank became full. A door sheet was cut in the tank wall and front loaders were used to remove the decanted catalyst fines. These oily catalyst fines were sent to hazardous waste incineration.

Depending on the details of flue gas treating equipment, permits and local environmental regulations, recycling slurry tank fines may or may not be permissible.

Tags

Catalysts

Operations

Reactor Vessel

Regenerator

Tankage

Year

2011