
Question 71: How do you rebalance your coker operation when processing atmospheric tower bottoms at your FCC during tight oil processing?

SHENKLE (Flint Hills Resources, Ltd.)

Our particular configuration for tight oil processing allows us to operate one of our cats with ARC (atmospheric reduced crude) without any impact to our coker operation. We typically have sufficient feed, but the obvious answer might be to purchase additional number 6 fuel oil or vacuum tower bottoms for operation. At times in our Pine Bend facility, we also have recycle heavy coke or gas oil, but not for extended periods of time. We do not have information on the long-term effects of recycling heavy coker gas oil, and we recommend consulting with your licensor for that mode of operation.

SRIVATSAN (Foster Wheeler USA Corporation)

It will be a challenge to fill up the coking unit if you do not have a residue fraction. In that ca.

BOB SHENKLE (Flint Hills Resources, LP)

At FHR, we have sufficient VTBs (vacuum tower bottoms) for maintaining coker operation. Other possible considerations:

- Run at turndown,
- Purchase number 6 fuel oil, asphalt, or vacuum bottoms on the market, or
- Recycle HCGO to the heater. FHR has done this for a short period, but we do not have history of its effects. The licensor should be able to provide guidance.

SRINI SRIVATSAN (Foster Wheeler USA Corporation)

Increasing the amount of tight oil production with hardly any residual fraction will lead to challenges in filling up the delayed coking unit (DCU). In order to maintain the DCU capacity, external purchase of HFO (heavy fuel oil) or VR will have to be made. If purchasing external feed is not an option, and if you have multiple drums, you may have to shut a module down. The DCU could also be operated in turndown mode with or without high recycle.

FCC slurry oil, if available, could be sent to the DCU as feed. As mentioned earlier, the quantity of FCC slurry that can be processed in a DCU as feed is limited to approximately 10%.se, external purchase of heavy fuel oil or vacuum residue may be required. If purchasing external feed is not an option and if you have multiple drums, then you could consider shutting down a module. The DCU could also be operated in turndown mode with or without a high recycle. As mentioned before, FCC slurry oil up to a certain point (10%) could be introduced as feed to the coker.

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