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**Question 50: From this list of your top FCC gas plant constraints, which area is your primary constraint: 1) main column (MC) overhead, 2) wet gas compressor, 3) primary or sponge absorber, 4) stripper, or 5) debutanizer bottoms or overhead?**

**ERIN CHAN** and **SUZY ANDERSON** (Burns & McDonnell, Oil, Gas & Chemical (OGC))

Refining investments in alkylation expansions and gasoline octane improvements require production of additional feedstock for the alkylation unit. The primary source of olefin feedstock for the alkylation unit is the FCC unit. Operating conditions in the FCC unit can be adjusted to favor increased propylene and butylene production. The FCC wet gas compressor becomes the first major bottleneck in recovering the incremental propylene and butylene. Modifications may be required to the compressor, as well as associated cooling, inter-stage, or after-stage equipment.

Downstream of the FCC wet gas compressor, absorption or sponging capacity becomes the next bottleneck. Increased lean or sponge oil circulation, as well as additional cooling or chilling, can be used to separate the propylene and butylene from the fuel gas stream. Alternately, a cryogenic type processing unit can be used to cool the fuel gas stream and produce a liquid C3+ product stream. Downstream of the absorption and sponging columns, the depropanizer and debutanizer columns may be pushed to their limits, with the overhead condensing systems becoming a bottleneck in recovering the liquid propylene and butylene products.

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