

Capacity Increased by 15%!!**Analysis & Correction of
Alky Deisobutanizer's Design
Flaws****PROBLEM:**

A major refiners DIB cannot achieve the 25 MBPD design capacity nor its objective of less than 5% iC₄ in the bottoms.

APPROACH:

Koch-Glitsch's systematic troubleshooting -

- Field data revealed high tray pressure drop & incipient flood.
- Simulation revealed significant number of trays providing no fractionation.
- Equipment checks revealed trays in the blowing regime, lack of feed distributors, & the absence of downcomer antijump baffles.

CAUSE:

- Several minor design errors combined to limit tower performance and plant capacity.

SOLUTION:

- Process modifications that took advantages of operating conditions were first considered and checked.
- Feed location changed to take advantage of an existing feed distributor.
- Anti-jump baffles installed in lower section.
- Weir blocks added to one section
- Feed pre-heat exchanger added.

RESULTS:

- 15% capacity increase - 23.8 to 27.4 MBPD.
- Bottom iC₄ decreased from 17.9% to <5%.