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**Question 93: We are aware of at least one refiner who replaces the regenerator head, including cyclones, at every turnaround to eliminate the time required for inspection and repair. What are the key factors you consider when assessing the economics of replacing the regenerator and/or reactor head(s) versus the traditional procedure of internal inspection and repair? How does the size of the regenerator and/or reactor play into the decision?**

**Mike Teders** (Valero)

Valero has experience with replacing the regenerator cyclones by cutting off the regenerator head and replacing with a new head and cyclones when the cyclones are at end of life. This technique reduces field work during the turnaround, reducing turnaround scope and cost. Many times the incremental cost for the head and support stand pays for the labor to rig new cyclones through a door sheet. The cyclone replacement project can be critical path to a turnaround. The cut-the-head off option pays for itself by reducing the turnaround time and returning the unit to operation much faster. However, we have not found it to be economical to cut the regenerator head off to replace cyclones at each turnaround.

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