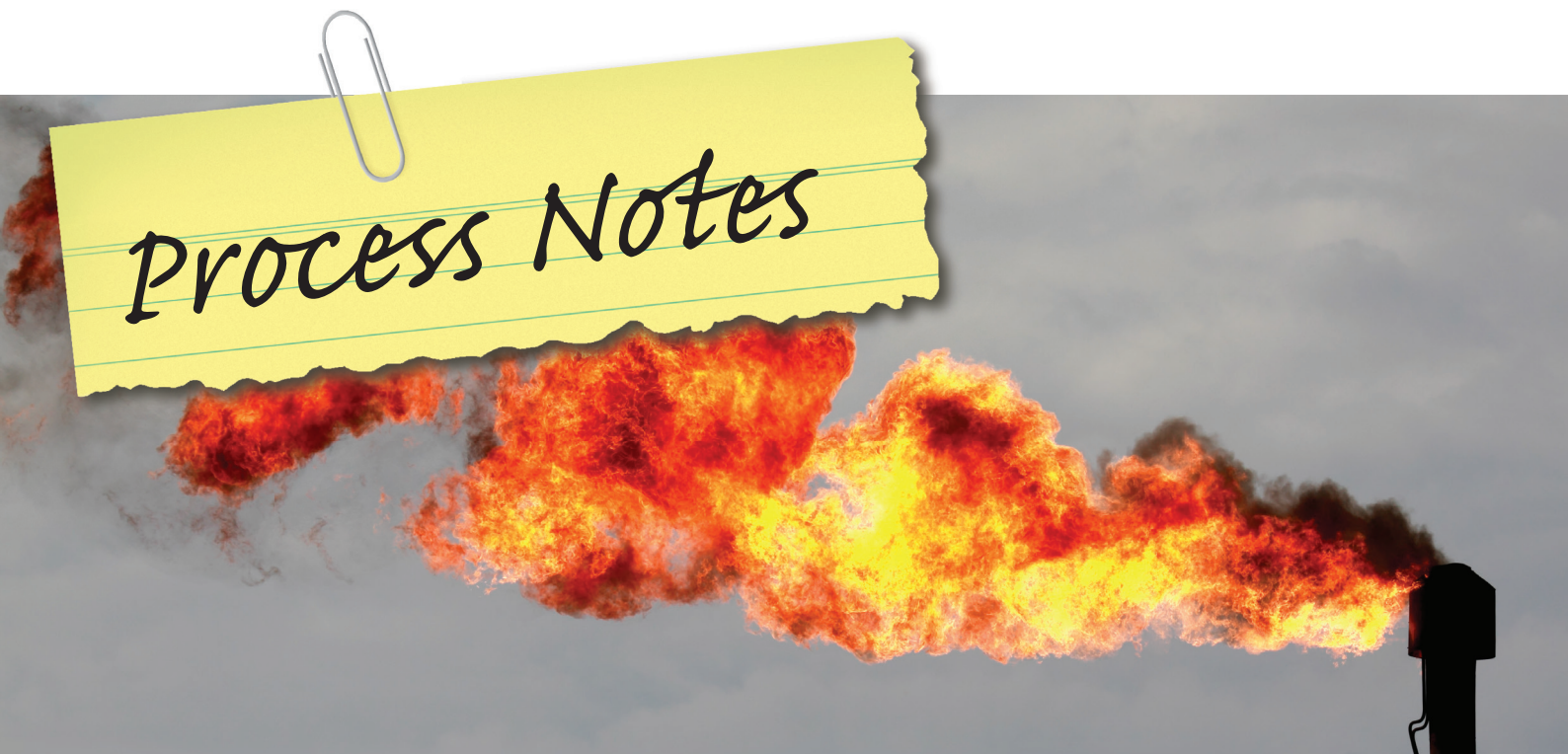




Process Notes

Projects must ultimately meet process goals.

On Budget, On Time, Offline

Flawless project execution will not prevent a unit shutdown due to selecting the wrong metallurgy for a challenging crude slate.

No matter how well it is fabricated and installed, a shell and tube exchanger with cold, high viscosity vacuum resid on the tube side will have poor heat transfer performance.

On-time shipping and installation of a too-small desalter will not prevent crude column overhead corrosion if the centerline velocity is overly optimistic for the design crude.

A high labor efficiency factor for installation of tower internals will not increase vacuum resid cut point, but properly designed stripping trays will.

Managing major projects such as grassroots crude, coker, and FCC unit construction is hard work. Large revamps are even harder. In projects costing tens of millions to billions of dollars, detailed engineering and construction are monumental tasks that consume most of the overall project budget and schedule. As a project advances from a design on paper to steel on the ground, success requires relentless focus on meeting cost and schedule expectations, leading project man-

agement to seem an end in itself. However, the success of a project rests upon the foundation that is built during conceptual design and front-end engineering.

With surprising regularity, a unit's failure to meet performance expectations does not stem from the detailed engineering and construction phases or faulty equipment manufacturing. Instead, project failure is often the result of poor front-end flow scheme design and initial process equipment specification.

A well-defined, early phase activity that consumes only a few percent of the overall project budget may seem trivial. In reality, solid front-end flow scheme development and equipment design are prerequisites for successful project execution. Rework and late stage process modifications usually reside at the top of the list of post-audit culprits in late and over budget projects.

Unit startup can quickly re-designate a project from shining success to haunting failure. Selecting a partner with an extensive experience list and a specialized understanding of the unit at hand can ensure startup goals are met while minimally impacting the overall project budget.



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