

Managing the Interface Between Construction and Commissioning

A process plant is a necessary evil. It is a means to an end; its purpose, by definition, is to transform feedstock, physically and chemically, to create an end product. Therefore, a process plant should be simple in design and easy to maintain, in order to minimise operating costs and maximise production revenue. A process plant is also a significant investment so to optimize capital usage it must be put into productive service as quickly as possible. To do this smoothly an integrated construction and commissioning schedule, with considerable overlap is essential.

Construction teams can often lose sight of this requirement and come to believe that the constructed plant is the final objective. However, what the end user needs, as an alternative to having no process plant at all, is a fully commissioned and reliable process plant, capable of fulfilling their processing ambitions.

Commissioning teams are tasked with bringing the process plant from a newly constructed state to an operational state. The commissioning team, like process plant operators, work with subsystems and liaise with the construction team to achieve Mechanical Completion in a prioritized subsystem sequence, as per the integrated schedule, to allow for an orderly and safe handover of mechanically complete sub-systems thus letting pre-commissioning and commissioning activities progress in parallel.

However, construction teams need to, and instinctively push to, work in areas and bulks and progress on multiple work fronts based on available manpower and materials. This working pattern is essential to maximize construction progress at the front end of the construction phase.

However, as construction progresses, typically at 60-80% of piping system installation, commissioning priorities come into play to focus construction efforts on the mechanical completion of priority subsystems so that suitably subsystem sequenced pre-commissioning and commissioning activities can progress in parallel to construction.

This dovetailing of construction activities with pre-commissioning and commissioning activities requires a high degree of attention and management, as there are increased risks due to the systematic energization of electrical and process equipment and machinery.

How can this conflict of interest be managed?

The conflict of interest between the possible conflict of interest can be addressed using the following:

- Systemization of the process plant with input from Engineering, Construction and Commissioning teams.
- Training, Education and Explanation.
- Careful and rigorous advanced planning in which the interdependence of subsystems is accounted for.
- Having a realistic and achievable schedule in place particularly toward the end of construction. This should be based on a planned overall sequence with priorities clearly identified.
- Using a state-of-the-art Completions Management Database.