

Comparison of Mining Industry and Chemical Industry Definitions of Studies

The mining industry and chemical industry have analogous design study progressions in the prevailing stage gate opportunity development work flows. The mining industry is usually driven by the geology centric Canadian National Instrument NI-43-101 whereas the chemical industry is driven by its adaptation of the US Department of Defense initiated Front End Engineering Development (FEED, or formerly FEL) project management techniques. Over many years of evolution the two have become similar but not necessarily fully useful to either industry and a blend of understanding must be reached to have clear definition of the components to be delivered and to what quality and detail.

A typical comparison of the two prevailing methods might be as follows:

Mining Industry Terms	Chemical Industry FEED Terms	Typical Level of System Design Documents	American Association of Cost Engineers Estimate Definition	Typical Accuracy of Cost Estimate	Typical Contingency Carried in OpEx and CapEx Estimates
Scoping Study	FEL1	Block Flow	Class 5	± 50 %	50%
Pre-Feasibility	FEL2	PFDs	Class 4	± 25 %	25%
Feasibility	FEL3	P&IDs	Class 3	± 10 %	10%