

FEED+[©]

Including Constructability in the FEED Study

Many consulting engineers offer a Front-End Engineering & Design (FEED) study as a means of producing a system design that better meets the customer's particular situation. We take the FEED study a step further by including construction issues into the study-design process.

Our integrated control, power, instrumentation, and construction study starts with a thorough site audit that applies our 30-plus years of experience to produce a detailed scope of work, electrical instrumentation detail, a construction approach, and cut-over planning.

The scope of work includes I/O, instrument, and engineering deliverable list, plus control system and HMI definitions, and the detailed construction approach. When we're done, you will have an appropriation/PO-worthy estimate. You may bid out the estimate if you wish, but we guarantee to install the defined scope of work for the estimated price.

A key element of the FEED+ study involves the site survey. Our site survey team consists of personnel with expertise in control systems engineering, field engineering, plant support, and construction. They start with a thorough investigation of the as-is control system, which includes the control board devices, operator interviews, examining manual operations, need for automation, and taking into account appropriate safety considerations.

They also do a P&ID walk-down. This includes physically locating equipment and drawings, recording current manufacturers and models, tagging/color coding wiring and cables, taking photographs of in-place material, evaluating the condition and version levels of in-place equipment, and creating as-found drawings.



The site survey helps the team strategize the project approach, including identifying panel locations, major cable raceways, a material marshalling area, and determining which equipment will need to be replaced and which equipment will require modification. The survey team also develops the I/O list. A master drawing index is created that reviews every existing drawing, determining any revisions needed, and identifies what new drawings are required. A repository of all information gathered during the survey is created and made available to the entire team.

The FEED+ study requires approximately 3 weeks by 4 people and accounts for about 20 percent of the total engineering cost. But it results in a comprehensive, highly accurate scope of work document that typically experiences less than a .5 percent scope "creep". It results in a fully audited plant and mitigates risk. It also results in a high degree of adherence to schedule and to budget.