

Ensuring Project Success for Food Projects

Scope Definition and Project Initiation:

Make sure all team members understand the process issues, operational goals and regulatory constraints that the design must address.

Training, training, and more training in food specific issues

The Project Manager must be conversant in the manufacturing process.

The PM must lead interdisciplinary coordination and ensure that the design respond to the operational needs and the requirements of the process. An administrative PM or a project architect cannot fulfill this critical role.

Use team members who have worked on food projects before.

Identify anyone who has not worked on food projects. Every engineering discipline has unique requirements for food processing. Pay close attention to any team member who may not have sufficient exposure to sanitary design.

Explain how success will be measured

How is startup and commissioning defined? How is contingency to be managed? Are performance criteria clearly defined?

Plan for startup from the beginning

Focus on startup in the RFPs, the contracts, staffing plans and or course schedule.

Discuss clear divisions of responsibility while focusing on the overlaps

All team members must understand their roles. Design needs to integrate several consultants, different corporate groups, vendors, contractors, etc. For example, how are process responsibilities shared? Even if the Owner has responsibility for all process, A/E firms still need to spend significant effort understanding and managing the interfaces between process and facility.

Confirm the scope of equipment and controls vendors

How are scopes grouped, where are the interfaces? The production line is rarely a series of turn-key "black boxes" connected by conveyors or transfer piping.

Other topics for the Kick-off meeting:

- *Critical issues and unique design challenges*
- *Managing design to meet budget*
- *How to manage scope creep*
- *How to manage risk*
- *Relevant code requirements*
- *PE/PA stamping and professional liabilities*
- *Design quality control procedures*
- *Communications, documents distribution and version control*
- *Design schedule, key review dates, and sequencing of bid packages*
- *Applicable CADD standards*
- *Available data and required data*

Implementation, QA and Risk Management Issues:

Focus on project cost to avoid “value engineering” in the 11th hour

Cost cutting must be carefully accomplished and well documented. It is common for ‘value engineering’ to impact food safety and raise cost of goods sold.

Keep in touch with Operations and Quality Assurance staff during the project.

In most companies, they are the ultimate client.

Focus early and often on the impact that the manufacturing process has on facility design

Rigorously update the equipment list. Include subtleties such as product load, radiant heat, combustion air, etc.

Food projects typically generate numerous change orders.

Process engineering continues concurrently with facility design. Changes impact completed work and justify requests for additional fees. But the business reasons such as reduced case costs, supply chain flexibility, meeting changing market conditions, and reacting to competition have financial impacts that greatly exceed design fees.

Layout equipment plans and sections at ¼ scale (or larger).

Everything always fits at 1/8 scale!

Most mistakes are made in section. Few are made in plan.

Draw section sketches and more section sketches. Do not rely on field coordination.

Focus on the interdisciplinary scopes that are difficult to coordinate

Piping in pipe racks, air flow patterns, pressurization, condensation, ductwork, roof penetrations, dynamic hanging loads, process hub drains, doors and bollards, penetrations through fire rated walls/floors, equipment access/maintenance access, diversity factors in utility loads, backup and emergency power/controls, material handling and sprinklers, coordinating MEP in interstitial spaces and hundreds of other issues impact three or more disciplines.

Test prior to ship.

Don’t debug anything on-site that you could have debugged at the manufacturer. Leave enough time in the schedule to test prior to ship with sufficient product.

Watch the job closely during Construction.

CMs need to manage contractor’s details to ensure food safety. Plan for enough hours for qualified staff to tour the construction site and discuss critical food design issues with contractors. If possible, find CMs with food plant experience. Value engineering decisions made in the field without adequate review are commonly the cause of problems later.