

## What is Commissioning?

The goal of any equipment purchase is to operate the existing process at the same, or better, productivity, quality and safety levels. In the event it is a brand-new process, then the goal is to achieve or exceed the operation goals used to justify the purchase. Commissioning a piece of equipment is the process of ramping up an operation with the new equipment from the moment it is installed to the point where it achieves the desired goals.

Preparing for commissioning starts at the very beginning of the project, understanding what are the desired goals, translating that into equipment supplier specifications and then conducting a Factory Acceptance Test (FAT) and a Site Acceptance Test (SAT). These tests will look at how the equipment meets Operational, Safety, Functional (ie. Mechanical/Electrical), Sanitation and Environmental criteria.

## Stages of Commissioning

### Project Initiation:

- Project Scoping
  - During this phase the expectations and goals of the equipment with respect to the overall process are outlined
  - Main emphasis is on the operational requirements of the system but high level safety, functional and environmental criteria are also discussed
  - The point when Operations takes over responsibility from the Engineering/Maintenance Departments should also be discussed
- Equipment Request for Quote/Proposal
  - In this step the different criteria are translated into the specifications for the suppliers and vendors of the equipment
  - Included in the quote or proposal is also an outline of the type of testing that will be used to evaluate the readiness of the equipment for operation prior to shipping from vendor

### Equipment Evaluation:

- Before equipment arrival (Factory Acceptance Test – FAT)
  - Testing and inspection that occurs at the vendor's facility to determine the functional, safety and environmental readiness of the equipment. Some operational readiness tests may also be performed, often requiring raw material that will be used in actual operations.
- After equipment arrival (Site Acceptance Test – SAT)
  - Once the equipment is on-site and in place, the equipment is again tested for functional, safety and environmental readiness. It is also tested for integration with existing and/or other new components (i.e. interlocks, ergonomics, training)

### Operations Ramp-up:

- System start-up through handover from Engineering/Maintenance to Operations to full production
  - Equipment is engaged and the system is ramped up to the desired operating levels
  - Often involves troubleshooting and experimentation to determine the optimal operating parameters to achieve desired levels of production
  - Can be done in several phases if the project has multiple pieces of equipment or is complex

***A strong future is built on collaboration, knowledge sharing, and mutual trust. Let's build that future together!***

## Some Sample Checklists (not complete)

### FAT – Factory Acceptance Testing

- Is there a test plan?
- Has a test plan been sent out with the Request For Quote (RFQ)?
- Does it state the responsibilities, accountabilities and deliverables?
- Are the deliverables measurable and quantifiable?
- Is there a scope of what is to be considered in the testing vs later on? (ie electrical, mechanical, safety, construction, plant preparation)
- Has the amount of testing and material/product required for testing been determined and ordered?
- Has the disposal of the test material been planned for?
- Who from operations and maintenance will be attending the FAT testing?
- Is training part of the FAT?
- What potential failures are being tested?
- Have all potential safety hazards been identified?
- Can all the equipment be tested in one go? In one location? Is an integrator required?
- Are there manuals? Drawings? Certificates?

### SAT – Site Acceptance Testing

- Is there a test plan?
- Does it state the responsibilities, accountabilities and deliverables?
- Are the deliverables measurable and quantifiable?
- Is there a scope of what is to be considered in the testing?
- Is there training involved?
- Does the testing reflect actual production volumes and speeds?
- Are the right people involved?
- Are there supplier representatives/technicians on hand to help?
- Is the test looking at best-case and/or worst-case scenarios?
- Is the complete product line, production line, production volumes being tested?

### Commissioning

- Is there a plan on how the production line will be ramped up?
- Will the equipment/production be phased in?
- Does it state the responsibilities, accountabilities and deliverables?
- Does it state at what point Operations will take over ownership?
- Are the deliverables measurable?
- Is everyone aware and in agreement on the goals/expectations?
- Are the upstream/downstream processes prepared?
- Are the right people available to train, provide support, measure?
- Is there a communication strategy outline – communicating progress, issues, resolutions?

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