



PLANT COMMISSIONING & START-UP

Experiences and Best Practices

September 6 - 11, 2021 – Live online course

7:30 pm – 10:30 pm (Peruvian time)

Objective:

Instruct, orient and train those who are involved in plants start-up to guarantee a safety and continuous operation, with social responsibility through the time.

Course content:

Main Phases of a Project.

- PFS, FS, ID phase.
- Construction phase.
- Pre-commissioning phase.
- Commissioning phase.
- Continuous operation.
- Investment vs. time on each phase of the project.

Main Definitions.

- What is a plant start-up?
- Importance of plant start-up
- Ramp Up: Curves by Manutti
- Walkdown: Blue Tag, Green Tag
- CTOP. (Construction Turn Over Package)
- TCCC. (Transfer, Care, Custody & Control)
- Definitions of systems and subsystems.
- P&ID, PFD drawings.
- Single line diagrams.
- Red-line drawings.
- As-built drawings.



- Training
- Spare parts.
- Risk Assessments: HAZOP

General Context on Plants Start-Up.

- Planning
- Mechanical Completion
- P&ID Checking
- Pre-commissioning
- Commissioning : cold comm & hot comm
- Start-Up – Ramp-Up
- Performance Testing
- Post-Commissioning.

Management Documentation in Commissioning.

- Time Schedule
- Organization charts
- Checklist : Mechanical, Electrical & Instrumentation
- Operating Manual
- Precommissioning Procedures
- Commissioning Procedures
- Safety procedures
- Quality control procedures.
- Emergency response procedures
- Status progress reporting
- Test records
- Punch list template (construction department)
- Approval criteria during relocations.

Commissioning Strategies.

- Objective and scope of commissioning
- Statement and acceptance of strategy
- Alignment strategies.
- Systematization of commissioning areas



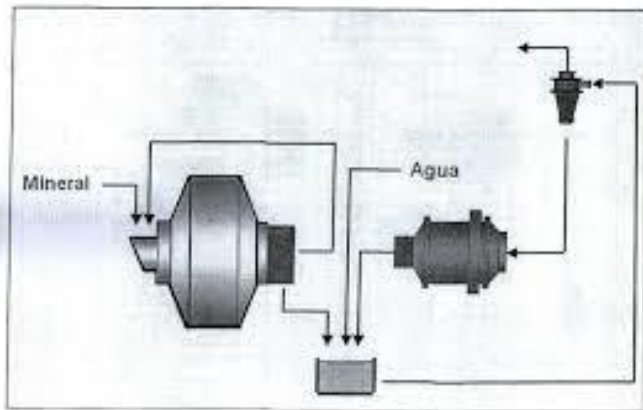
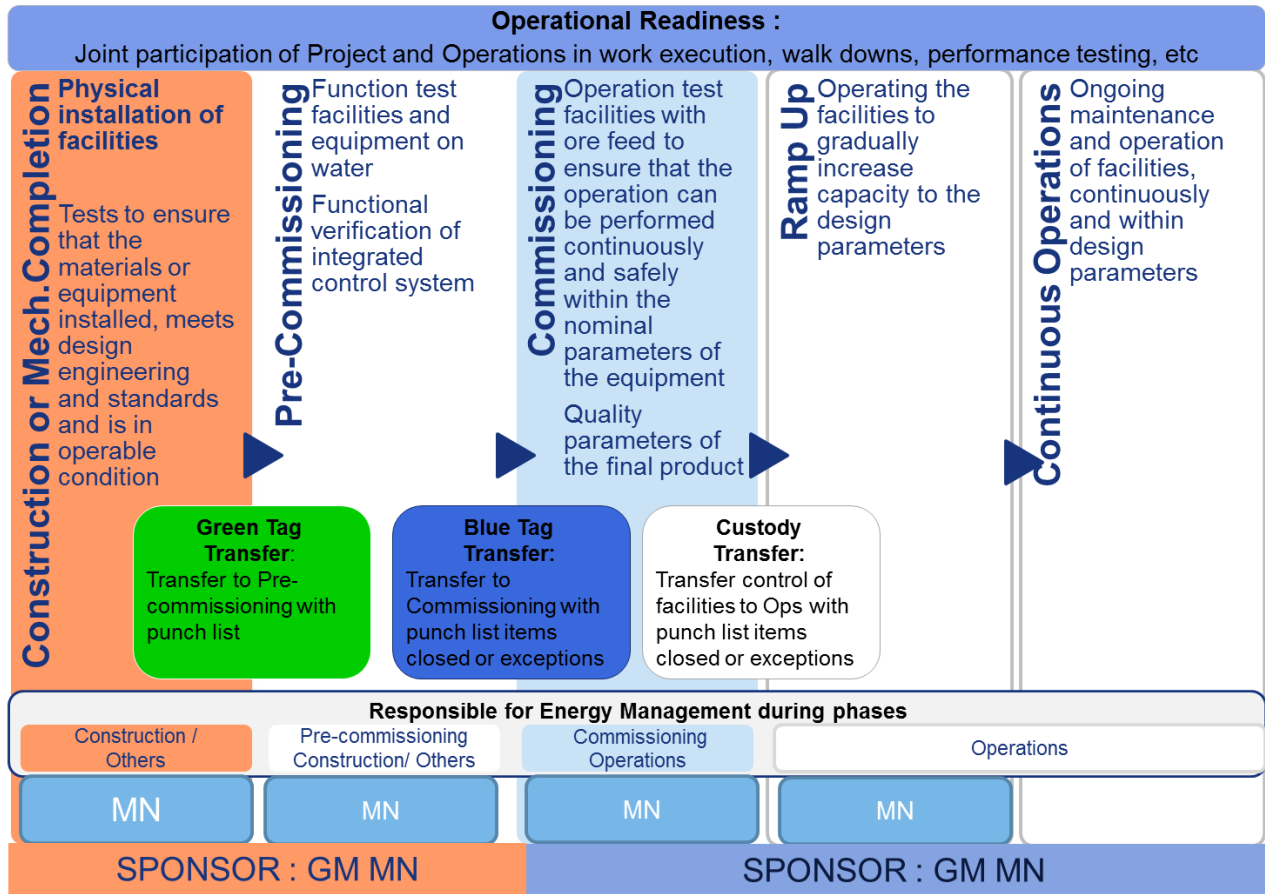
- Commissioning sequences
- Minimum criteria of acceptance for commissioning start-up.
- Manpower (teams): precom, comm, operations, maintenance, contractors, task force, vendors, materials suppliers (clients), office staff.

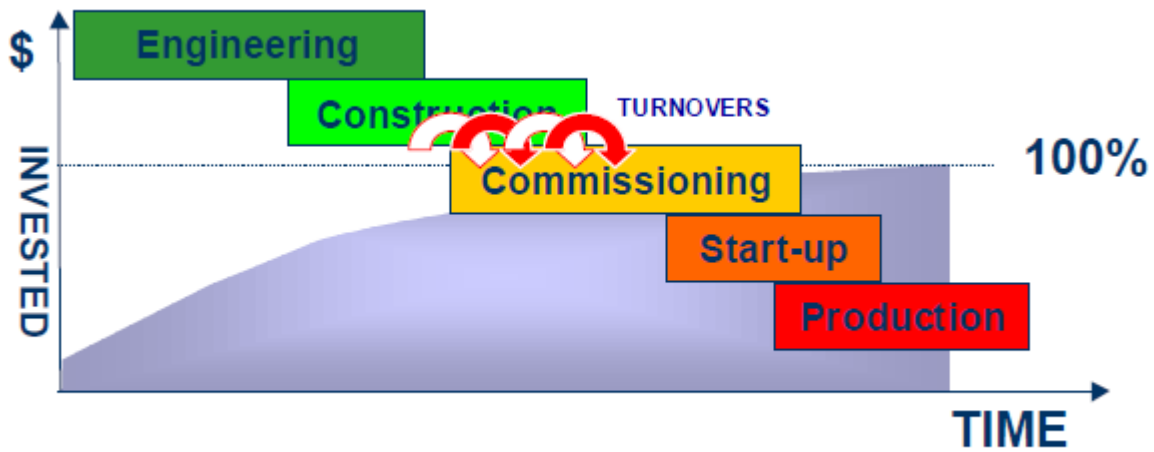
Process Systems Commissioning.

- Crushing Systems Commissioning.
- Grinding Systems Commissioning.
- Flotation Systems Commissioning.
- Filtration Systems Commissioning.
- Pumping Systems Commissioning.
- Stirred Tanks Commissioning.
- Thickeners Commissioning.
- Secondary Systems Commissioning
 - a. Water Systems
 - b. Air Systems
 - c. Power Systems
 - d. Consumption Supply Systems
- Control Systems Commissioning.

Practical experiences in commissioning.

Key experiences and instructions on commissioning of some important concentrator plants in Peru and Mexico will be discussed.





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