PRACTICAL GUIDE | INDUSTRIAL & ENGINEERING PROJECTS

Construction Completion and Commissioning

Demonstrate that the facility is safe, operable and meets the contract - not simply physically complete.

WHAT TO DO | PART 1

01 Define testable systems early

Divide the facility into systems and agree boundaries, documents, testing sequence and acceptance responsibility before late construction.

Evidence: Systemization plan and turnover schedule.

02 Verify construction records

Close mandatory inspections, welding/NDT, pressure testing, grounding, equipment installation, vendor certificates and hidden-work checks.

Evidence: Mechanical completion dossier by system.

03 Complete precommissioning

Carry out cleaning, flushing, pressure/leak tests, instrument calibration, loop and functional tests, energization and system safety checks as applicable.

Evidence: Signed precommissioning check sheets.

04 Prove operational readiness

Confirm operating procedures, trained staff, permits, utilities, emergency drills, consumables and maintenance/spare parts.

Evidence: Readiness review and start-up authorization.

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WHAT TO DO | PART 2

05 Commission under controlled conditions

Commission and start up according to approved procedures, with OEM assistance and permitted operating conditions. Capture defects and retest results.

Evidence: Commissioning records, punch list and as-built updates.

06 Run contractual performance tests

Demonstrate output, quality, availability and efficiency where specified, using agreed test conditions, measurement methods and witnesses.

Evidence: Signed performance test reports and deficiencies.

07 Apply acceptance criteria correctly

Issue taking-over/PAC only when contractual tests and allowed residual defects are met. Track warranty, retention and later final acceptance separately.

Evidence: Taking-over certificate or PAC, with remaining work register.

REQUIRED OUTPUTS

System dossiers, operating permit, readiness certificate, successful tests, training records and contractual acceptance documents.

DECISION POINT

ACCEPT only when the contractual definition of completion is evidenced, not solely when construction is finished.

COMMON MISTAKE TO AVOID

Commissioning assistance is not the same as contractor responsibility for commissioning, start-up and performance testing.

APPLICATION NOTE

PAC/FAC terminology is contract-specific; use the actual acceptance definitions agreed by the parties.

METHODOLOGY / REFERENCES

Practice basis: use contract-defined completion tests and applicable safety regulations.