OpsPilot

Commissioning Plan — User Manual

Handover-Ready Commissioning · IEC 62381 / ASHRAE Gl 0 · AI Engineering Co-Pilot

What this guide covers — what a commissioning plan is, how the OpsPilot module sequences it, what to have ready, and the plan you receive.

1. What is a commissioning plan?

A commissioning plan is the staged process for bringing a new or modified facility from “construction finished” to “running and handed over to operations,” proving at each stage that systems work before the next stage loads them. It runs in a deliberate sequence — mechanical completion, pre-commissioning, cold commissioning, hot commissioning, performance testing, handover — because skipping or rushing a stage simply moves the failure to a worse moment. The most common commissioning failure is sequencing, specifically starting the process before the utilities that support it are ready.

OpsPilot structures it to *IEC 62381 (FAT/SAT/SIT), ASHRAE Guideline 0, the IChemE Process Plant Commissioning Guide and AS 4854*, including IEC 61511 safety-instrumented-system proof testing during cold commissioning.

2. The commissioning sequence

Stage	What it proves
Mechanical Completion (MC)	Construction is complete and the system is built per design.
Pre-Commissioning	Cleaning, flushing, energising — the system is ready to operate.
Cold Commissioning	Function-testing without process fluid (incl. SIS proof testing).
Hot Commissioning	Introducing process fluid and operating the system live.
Performance Testing	Proving the system meets its performance guarantees.
Operational Handover	Formal transfer to operations with documentation.

3. What the OpsPilot module does

Role	Responsibility
🎯 **AI Coach — Senior Commissioning**	Structures the full sequence from mechanical completion to handover — system by system — with MC verification, pre-commissioning checklists, performance

Role	Responsibility
Manager (OpsPilot)	tests and the handover dossier, and stress-tests the sequencing (especially utility readiness).
👷 Commissioning / Project / Operations Manager (you)	Provide the scope, target dates, system boundaries, performance guarantees and team organisation — and validate that the sequence reflects site reality and operations are engaged early enough.

4. What you will be asked — have this ready

- The scope, system boundaries and target dates.
- The performance guarantees that must be proven.
- The team organisation, and when operations gets involved.
- The utility-readiness picture — what supports the process and when it's available.

5. What you receive — the output

A complete Commissioning Plan (Word): a system-by-system schedule, mechanical-completion verification, pre-commissioning checklists, the cold/hot commissioning sequence with SIS proof testing, performance tests against the guarantees, and the operational-handover dossier.

6. Worked example (illustrative)

A new process unit is ready to commission. The tempting move under schedule pressure is to start hot commissioning the process as soon as mechanical completion is signed. But the plan's sequencing discipline asks the killer question first: are the utilities — instrument air, cooling water, power, nitrogen — themselves commissioned and stable? If hot commissioning starts before the utilities are proven, the first cooling-water hiccup trips the unit and you're chasing a process problem that's really a utility problem. So the plan sequences utility commissioning ahead of process, function-tests the safety-instrumented system during cold commissioning (before any hazardous fluid is in), and only then introduces process fluid. Each stage proves itself before the next one loads it.

7. Getting the best result

- **Commission utilities first.** Starting the process before its utilities are stable is the classic commissioning failure.
- **Prove each stage before the next.** Skipping a stage just relocates the failure to a worse moment.
- **Proof-test the SIS cold.** Verify the safety systems before any hazardous fluid is introduced.
- **Engage operations early.** They inherit it — involve them well before handover, not at it.