

Mine and Process Plant Commissioning and Start-up

Facility and Plant Commissioning

Tetra Tech's commissioning personnel safely and effectively support the transition of constructed assets from the construction or repair phase to the owner.

Our commissioning support is provided through a systematic process of planning, checking, inspecting, testing, and documenting that all facility components and systems perform fundamentally and interactively according to the contract documents, and that adequate system documentation has been provided.

Our on-site engineers and metallurgists support factory acceptance testing, mechanical completion functional testing, and production testing to ensure that systems maintain the integrity of the design expectations throughout the entire project delivery process.

- Commissioning planning—a key part of the commissioning process that starts during the engineering phase; includes integration of the construction and commissioning schedules to ensure proactive commissioning
- Custody tagging—care, custody, and control identification process
- Pre-commissioning—dry commissioning (pre-operational testing) and cold commissioning
- Commissioning—hot commissioning, wet commissioning (testing and initial operation with fluids and then with load), and process commissioning
- Initial and primary dynamic testing, including guarantee performance tests

Our commissioning staff can also provide training for plant staff and managers on operational, safety, inspection, and maintenance procedures for the new equipment, as well as guidance to help them understand the operation and maintenance manuals.



Start-up Support

Tetra Tech assists operations staff in the initial start-up of the equipment by providing visual inspections, troubleshooting, and de-bottlenecking support to ensure the equipment is ready to operate safely. Our support verifies that the equipment is installed as designed, controls and safety systems are fully functional, first fills of process fluids take place, system punch list items are completed, and functional tests confirm conformance with the design expectations for the equipment.

System Checks

Tetra Tech supports facility start-up with systems checks like the following:

- Safety systems (lock-out/tag-out, ventilation, exhaust)
- Fire protection and security systems, HVAC
- Electrical and emergency power equipment
- Structural components
- Mechanical equipment
- Piping and pumping systems
- Field instrumentation
- Redundancy systems
- Integrated automation, process control, and management information systems

Tetra Tech is a leading provider of consulting, engineering, program management, construction management, and technical services. The Company supports government and commercial clients by providing innovative solutions to complex problems focused on water, environment, energy, infrastructure, and resource management. With 13,000 employees worldwide, Tetra Tech's capabilities span the entire project life cycle.



Integrated Commissioning Team

To ensure safe and efficient start-up and commissioning, Tetra Tech's commissioning teams include the engineers who were involved in the design and are therefore most familiar with the project. These personnel include our in-house, experienced commissioning managers; mining engineers; metallurgists; electrical, instrumentation, and control engineers; and design managers.

Commissioning and Start-up Support for Mining Facilities

For new mine facilities, retrofit improvements, and system upgrades, Tetra Tech provides:

- Development of detailed commissioning plans and schedules
- Commissioning handover, inspections, and documentation
- Field walk-through and pre-start-up safety review
- Start-up acceptance testing
- Functional performance testing
- Integrated systems testing
- Discrepancy log and corrections
- Close-out documentation
- Standard operating procedures
- Operation and maintenance programming
- Emergency response planning
- Seasonal testing
- Warranty review
- Reliability assurance testing
- Maintenance planning
- Load management
- Technology expertise
- Equipment operation and maintenance training

Providing integrated engineering techniques and procedures to check, inspect, and test to verify that operational components meet project requirements.

Diverse Commodity Types

on our projects including: gold, silver, platinum, palladium, aluminum, copper, nickel, zinc, alloys of iron, chromium, manganese, silicon, tungsten, molybdenum, vanadium, coal, potash, rare earths, energy minerals, and industrial minerals

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US	Golden, Colorado Salt Lake City, Utah Tucson, Arizona