

Automation & Control Advanced Process Control

Streamline your projects with Wood Group's complete automation and control capabilities

WOOD GROUP





Independent and full service

Wood Group is an independent provider of advanced process control (APC) services with industry-leading technology experts. We have experience with the leading multivariable controllers and newer technologies for automated step testing and evolving project methodologies. We also provide distributed control system (DCS) configuration, DCS graphics, human machine interface (HMI) and analyzers and will work with you to implement your APC project successfully, minimizing the number of contractors involved.

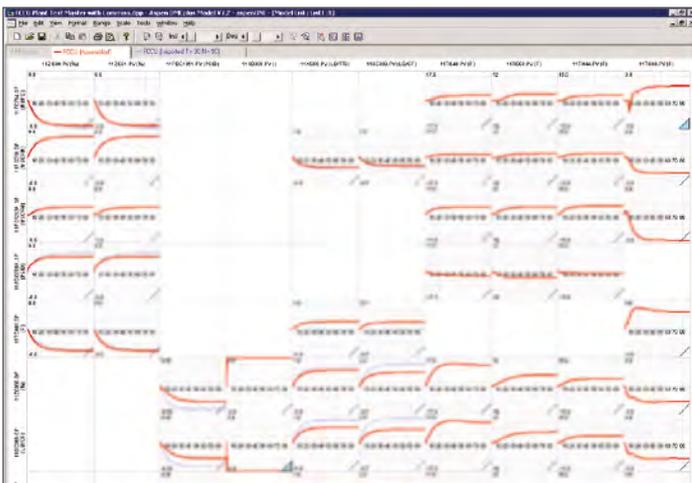
APC is designed to improve operation of production processes, resulting in continuous management and optimization of complex process interactions. A multivariable interaction model (APC Model Matrix) is designed using proven control software to predict the future path of the process, compare that to the operating boundaries, and implement a smooth plan to that target.

Effective APC helps you to maximize profits, increase capacity and improve operating efficiencies. Our experience delivering successful APC projects stems from many years of merging our extensive process knowledge with the latest control technologies.

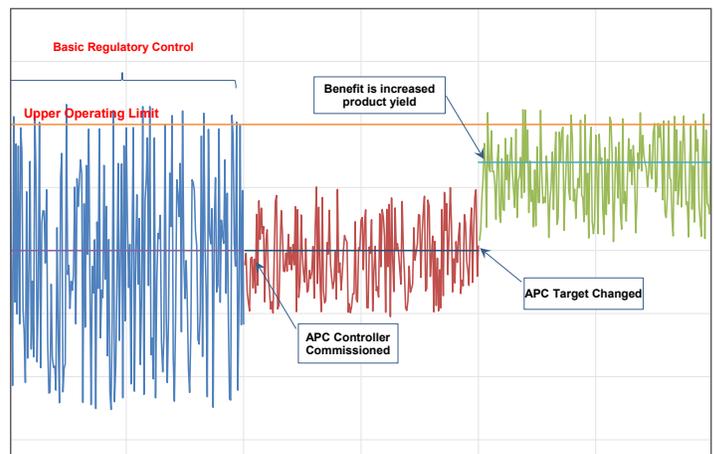
The typical benefits of APC

- Reduction of product quality variations by 50–80%
- Maximize throughput against constantly changing process constraints
- Increase yields and conversion by 2–4%
- Increase throughput by 3–5%
- Reduce energy consumption as much as 5–10%
- Maximize recovery of more valuable products
- Improve process stability, operability and reliability
- Reduce off-spec material
- Promote better process disturbance rejection
- Typical payback period of 6-12 months

APC model matrix



APC reduces variability



Key

- A.** High variability before APC
- B.** APC reduces variability by 50-80%
- C.** APC holds targets closer to limits with no more variation

Common APC applications

Downstream

- Chemical, petrochemical and polymer plants
 - ▶ Ethylene
 - ▶ Olefins
 - ▶ Polyolefins
- Refining
 - ▶ Crude distillation
 - ▶ Fluidized catalytic cracking
 - ▶ Hydrotreating
 - ▶ Hydrocracking
 - ▶ Alkylation
 - ▶ Catalytic reforming
 - ▶ Delayed coking
 - ▶ Hydrogen plants
 - ▶ Sulfur recovery
 - ▶ Aromatics

Midstream

- Gas separation plants
- LNG liquefaction and regasification units upstream
- Oil and gas production facilities

Upstream

- Oil and gas production facilities

Wood Group delivering powerful solutions

Our scope of work includes the following:

- Process and control assessments
- Feasibility benefit studies
- Technology assessment and selection
- Management of turnkey projects
- PID loop evaluation and tuning
- Continuous soft sensor property predictor
- Life cycle maintenance and training support
 - ▶ Scope
 - ▶ Evaluate
 - ▶ Test
 - ▶ Model
 - ▶ Install
 - ▶ Commission
 - ▶ Revamp

Wood Group's automation and control services add value

We offer extensive and diverse experience in automation and control and information systems. Our services provide complete DCS and control system work, HMI development, alarm rationalization, safety systems and networking. Wood Group is both a systems integrator with full service instrument and electrical engineering capabilities and a consultant - vendor experienced yet vendor independent. We are skilled in the following areas:

- Advanced process control
- Regulatory control evaluation and tuning
- Operator training simulators
- Environmental data solutions
- Production and yield accounting
- Batch management
- Recipe management
- Manufacturing execution systems
- Real-time process data historians
- Production reporting
- Statistical process control/statistical quality control
- Laboratory information management system
- Systems integration between the plant floor and business processes
- Custom application development



Wood Group is an international energy services company with around \$6bn sales and operating in more than 50 countries. The Group designs, modifies, constructs and operates industrial facilities mainly for the oil & gas sector, right across the asset life cycle. We enhance this with a wide range of specialist technical solutions including our world leading subsea, automation and integrity solutions. Our real differentiator is our range of services, the quality of our delivery, the passion of our people, our culture and values. We are extending the scale and scope of our core services into adjacent industries. Visit Wood Group at www.woodgroup.com and connect with us on LinkedIn and Twitter.