

Product Data Sheet:
GP-99-001

Revision Date:
June 1999

Gas Processing Performance Controller

GPPC

Barry D. Payne & Associates Inc. offer Advanced Process Control strategies designed for multiple platforms, that deliver plant improvements with your current controls today!

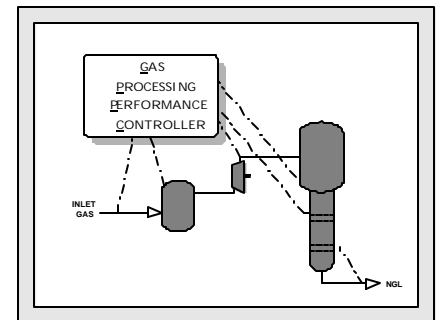
Special points of interest:

- Re-tunes automatically for changes in feed rate, day-to-night operation, and ambient weather conditions.
- Proven to deliver comparable performance to high cost, model predictive software packages.
- Makes continuous adjustments to deliver on-spec products.
- Automatically drives process toward maximum recovery.

Product Description

General Industry Usage: Controls and enhances the recovery of natural gas liquids by cryogenic processes. Drives Cryogenic NGL processes toward the maximum recovery attainable subject to limits on product composition and temperature. Maintains product composition on spec automatically.

Benefits Overview: Continuously "re-tunes" Cryogenic NGL processes for changes in feedstock and ambient conditions. Delivers better recovery performance and product quality than is normally obtainable by manual operator control, or by typical plant regulatory controls. Provides comparable benefits to supervisory model-based software products at a fraction of the cost. As easy to maintain as your current control strategies, with a proven track record for remaining in service.



Inside this Product Data Sheet:

Product Description:
Advanced Regulatory Control Strategies

Applications:
Cryogenic Gas Processing

Performance:
Comparable to Model Predictive Software

Features and Benefits:
Low Investment, Ease of Use, High Return

System Requirements:
Existing Plant Control System (PLC or DCS)

Product Support:
Install, Startup, Training, Follow Up Audits

Contact BDP by:
Mail, Phone, Fax, Email, Website

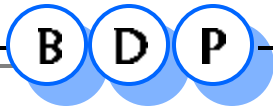
Applications

- ❖ Turbo-expander and Joule-Thompson (JT) Cryogenic gas plants, with and without Gas-subcooled or "Reflux" enhancements or mechanical refrigeration.
- ❖ Drives gas-to-gas exchanger and reboiler system toward highest recovery possible (exclusive of refrigeration) based upon limits due to CO₂, metallurgy, "Cold Spin", etc. Maintains NGL product quality controls, typically C1/C2 or C1 volume percent, and may also be used for C2/C3 control depending on process design.

Performance:

- **C1/C2 Ratio Control** – GPPC has been documented by third parties as delivering a standard deviation within +/- 0.35 LV % in sustained service in a typical Turbo-expander application.
- **Recovery** – typical improvements of 2-5% C2 recovery over basic regulatory controls. Some plants will also experience C3 recovery improvements. Cold separator temperatures normally maintained at low limit +/- 1 degree F continuously.
- **Stability** – several sites have been using the composition controller for more than 3 years (longest is 6 years) without significant interruption.

WE'RE ON THE WEB!
www.bdpayne.com



On Target Solutions!

GPPC

Features and Benefits

- ✓ **Investment:** Target application installed in your existing plant control system.
- ✓ **Operations:** Use of existing control system results in shorter learning curve and quicker acceptance by operating personnel.
- ✓ **Maintenance:** Additional control equipment is not normally required. Easily maintained by current support staff.
- ✓ **Economic:**
 - ◆ Performs close to "your best Operator on a good day" while plant is at steady state.
 - ◆ Speeds recovery of plant to efficient conditions after an upset.
 - ◆ Drives process closer to maximum recovery 24 hours a day. Adjusts regulatory controls to take advantage of day to night or short-term weather variations in processing capacity.
 - ◆ Overcomes normal tendency to operate process "backed off" from coldest achievable conditions to avoid cold spins, CO2 freezing, or other process conditions which can be constraint controlled automatically.
 - ◆ Maintains on spec NGL without giving up potential recovery to over-purification.

System Requirements

- **Instrumentation:**
 - ❑ Onstream Process analyzer, either multi-stream or dedicated. Requires Demethanizer bottoms C1, C2, and total un-normalized component analysis updated typically every 20 to 60 minutes. Performance improves with sample frequency.
 - ❑ Required process measurements and regulatory controls: DeC1 tower pressure, bottom temperature control point, cold separator temperature, and trim reboiler heat source flow and temperature.
 - ❑ Optional process measurements: Cryogenic section inlet gas flow, inlet gas flow split measurements, expander outlet temperature, and inlet gas temperature.
- **Control System Hardware:**
 - ❑ Programmable process control system such as Distributed Control System (DCS), Programmable Logic Controller (PLC), or selected panel-mounted Multi-loop Controllers (MLC).
- **Control System Software:**
 - ❑ Real-time function blocks and command language programs standard in DCS systems.
 - ❑ Enhanced relay ladder logic (RLL) with function blocks for PID, math, and advanced math functions.
 - ❑ IEEE 1131 programming languages with function block, RLL, structured text, and sequence flow chart editors.
 - ❑ Enhanced Multi-loop controller software with function blocks and command language programming.
- **Manpower:**
 - ❑ Easily operated/maintained by existing plant personnel.
 - ❑ Advanced math or programming capability not required.
 - ❑ Implementation on existing control system, supported by BDP training, results in successful operation and maintenance by typical gas plant personnel.

Product Support

- ⇒ Software installation, commissioning, and loop tuning services included in engineering services package.
- ⇒ Training programs for operations and maintenance personnel during product commissioning.
- ⇒ One-year product support included with product license. Includes two "check up" visits, telephone support, and product revision services for one year from commissioning.

Optimize Your Control System Performance –
Install ON TARGET Solutions Today!

Barry D. Payne & Associates Inc.
P.O. Box 1159 (77497-1159)
10707 Corporate Drive, Suite 161
Stafford, Texas 77477

Phone: 281-240-4488
Fax: 281-240-3913
Email: info@bdpayne.com
Website: www.bdpayne.com