



DATA SHEET

AUTOMATION CONTROLS

OVERVIEW

Installing or upgrading a new control system is not an easy task. Rigorous assessment and planning should be conducted to ensure reliability and improved plant performance. Verve understands the importance of this initial phase because we recognize every control system project possesses unique complexities. We know control systems.

Since 1994, we have been involved in several sophisticated control system projects ranging from Burner Management System (BMS) and Combustion Control System (CCS) for Boilers, and Wet Flue Gas Desulfurization (WFGD) assignments to complete migrations, upgrades, and conversions from older legacy systems to modern controls.

Verve is not another systems integrator that simply implements logic and controls. We are a team of highly qualified process control engineers who truly understand the engineering of complex projects, from conceptual design through detail design and site implementation including I/O checkout, startup, testing and commissioning.

Understanding the plant process plays a key role in reducing costs, minimizing design changes, and providing a quality product for engineering, construction, and operations.

SOLID PROCESS UNDERSTANDING

Our process control engineers have worked with every major distributed control system (DCS) and programmable logic controllers (PLC) currently on the market. The broad range of control system expertise allows Verve to offer the best solution without prejudice toward a particular control systems vendor.

Verve offers complete engineering design services related to DCS and PLC installations, upgrades, or migrations including:

- Conceptual Studies
- Specification Development & Bid Evaluation
- DCS & PLC Vendor Selection
- DCS & PLC Procurement & Programming
- Complete Hardware & Software Configuration
- I/O Database Design Optimization
- Control Logic Development
- DCS/PLC end wiring termination drawings/ schematics/loop diagrams
- Network Design & Implementation
- System Integration
- Control System Tuning
- Communications from DCS to Third Party Devices
- Alarm Management
- Third Party Optimization Support
- Startup & Commissioning
- Maintenance & Troubleshooting
- Performance Testing
- Factory Acceptance Tests (FAT)
- Site Acceptance Tests (SAT)

CONTROL SYSTEM EXPERTISE

Whether you are upgrading your entire control system, expanding for environmental controls, or integrating plant systems into a modern control system, Verve can help.

Our control engineers have experience with all power plant systems and possess extensive experience installing a variety of control systems from single loop controllers to complex DCS.

DCS Design & Implementation (Platforms)

- Emerson WDPF
- Emerson Ovation (Solaris & Windows)
- DeltaV
- ABB/Bailey (Infi90 thru 800xA)
- Siemens (TXP thru T3000)
- Honeywell
- Foxboro
- Rockwell PlantPAx

PLC Design & Implementation (Platforms)

- Rockwell Control Logix (PLC2-5)
- GE Fanuc
- Modicon

COMBUSTION CONTROLS & BURNER MANAGEMENT SYSTEMS

For 25 years, Verve has provided controls solutions to coal-fired power plants throughout the United States. We understand the benefits of increased boiler efficiency through combustion control and safety through reliable burner management systems (BMS).

Our knowledge of combustion controls allows us to identify the ideal balance between fuel and air, compromising advanced boiler control functions including plant master control, fuel flow control, and feed water control. These controls tuned for performance efficiency also reduce emissions for compliance with regulatory requirements for the control, monitoring, and reporting of pollutant emissions.

Verve also has experience implementing BMS systems in accordance to the National Fire Protection Association's (NFPA) standards and have conducted numerous NFPA reviews.

STEAM & GAS TURBINE CONTROLS

Verve has worked directly or indirectly in developing full-scope and partial-scope control system solutions for several coal-fired, simple-cycle, combined-cycle, and cogeneration facilities using the latest steam and gas turbines. Our engineers have extensive process knowledge in regards to control systems due to their background in combined-cycle power plant design, start-up, testing and commissioning.

Proper configuration of modern controls can increase performance, availability, and reliability of steam turbines even as older turbines operate beyond their original life expectancy. Our engineers have implemented fully coordinated turbine and boiler control schemes with various protection schemes.

BALANCE OF PLANT & ENVIRONMENTAL CONTROLS

- Wet Flue Gas Desulfurization (WFGD)
- Baghouses
- Selective Catalytic Reduction (SCR)
- Powdered Activated Carbon
- Coal Handling
- Ash Handling
- Sootblowers
- Water Treatment