



## **Client Benefits**

*Single point of contact for both control hardware and software design.*

*Process know-how and design support enables realistic solutions to be readily developed in-house before being offered for approval.*

*Wide industry background providing cross sector knowledge with practical and cost effective solutions*

BPE offers the full range of Control System and Instrument services from conceptual studies to final design and handover. This includes a full Qualification for validated systems. The support extends from simple one-off consultations to design, installation and commissioning for complete projects

The following summarises:

- **Experience in Pharmaceutical, Chemical, Oil and Gas and Offshore industries.**
- **Packages-** definition of the programming of PLC's for packaged plant to suit process requirements.
- **Full DCS Functional Design Specifications to include Input/Output Schedules, Mimic Diagrams, Configuration definitions**
- **Commissioning and Validation - automated pharmaceutical systems validated in accordance with Gamp 4.**
- **Hazardous area instrumentation and communication - remote I/O, PC's, wireless and fibre optic communication, and HMI's**
- **Safety Shutdown Systems - designed and commissioned, complying with IEC 61508/11.**
- **Batch control to SP88 - phase diagrams, recipes and campaigns designed and engineered to current standards.**
- **ATEX compliant specifications.**
- **Network Topology Analysis, Industrial Ethernet and Wireless technologies implemented.**

BPE's engineers are experienced in the latest industry trends offering leadership in new standards codes and practices.

## **Experience Base**

*Specifications for all types of Process Instrumentation predominantly for Hazardous Areas*

*PLC and HMI programme specifications.*

*PC specifications for Hazardous Areas*

*Application of Process Analytical Technologies (PAT) into API operating plants*

*Specification installation supervision, commissioning and full validation of instrumented systems in accordance with Gamp 4.*

*Specification, testing and commissioning of SIL rated safety systems*

## **Details**

### **Plant Design**

Design and specification of complete control systems. Specification of loops, generation of the schedules, graphics, wiring and all the process parameters. PLC or DCS based safety systems which are hardwired or programmable. All process field instrumentation from transmitters to analysers included for both safe and hazardous areas. Vendor selection to suit client supply requirements or chosen on quality and cost.

### **Plant Modifications or Expansion**

Integration of new and old systems designed to minimise disruption to manufacturing. Use of the latest technologies also minimises any space and installation cost issues.

### **Hazardous Area Instrumentation**

The use of Pneumatics, Purged, Explosion Proof, or Intrinsically Safe technologies to best suit the application.

### **Systems Engineering**

Competitive design engineering based on a thorough understanding of the process ensuring that control systems are optimal.

### **Batch Control**

Modification and/or generation of phase diagrams, recipes and campaigns for batch processes configured to SP88.

### **Full project life-cycle**

Participation in projects from initial concept to commissioning, validation and handover. Provision of integrated design solutions within the team environment for multidiscipline projects. Specialist input to Hazops and CHazops to meet the client requirements. Full design management service for I&E/Controls projects.

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