

## Profile No. 5 | New Developments & Process Control Systems | March 2004

### Introduction

New developments or expansions are obvious drivers for a business to move into capital expenditure. Due to their sphere of influence, the process control & safeguarding systems are critical to the overall success of the capital works.

Plexal Group provides a cost effective alternative to traditional approaches when developing these systems.

### Key Consideration

The nature of new developments typically requires large, mainstream multi-discipline engineering companies to provide not only the overall design but also management of 3<sup>rd</sup> party suppliers.

In the area of control & safeguarding systems, the usual design basis includes a plant-wide process control network that interfaces the DCS, safeguarding system and various package systems such as gas compressors, generators, air compressors, heaters, filter skids, switchboards and so on.

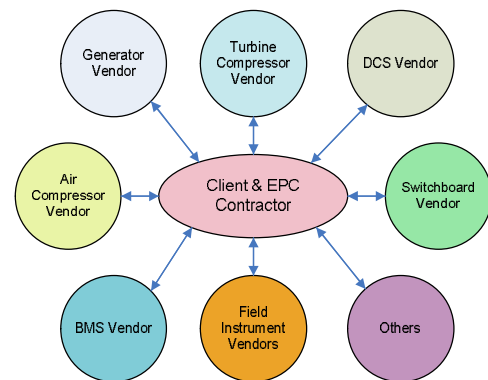
Although the Client and its engineering services company can steer the direction of the plant-wide systems, they are often forced to accept the package vendor's standard solution resulting in multiple hardware and software types throughout the plant.

At first glance this may not appear overly burdening. However, integration of the primary control network and these sub-systems can present significant risk to budget and schedule, particularly during commissioning and start-up.

In addition, the systems are often supplied by different specialist vendors who rarely have any need for comprehensive knowledge of the other systems.

Their involvement is usually limited to providing standard interface signals for use 'By Customer'.

Furthermore, vendors rarely have any contractual obligations between themselves and in most cases the Principal Contractor is the Operating Company.



Contract Communication Relationships

Traditional engineering practices often attempt to describe interface requirements in general specifications, with design slanted towards 'supplied by others' and a general expectation that intersystem signals will be compatible.

With obvious logistical issues involved, full system integration testing can rarely be performed before mobilisation to site.

The consequences of poor interface design and lack of emulation testing can be a delayed start-up and cost increase at site rates. It can also lead to complex resolution as each vendor believes they have delivered their scope.

The client is often forced to pay for modifications due to pressures to commence production and attempt recovery after the fact.

## Our Difference

Plexal Group offers far more than traditional control & safeguarding system development and configuration services.

Our ownership model includes operations, process and mechanical expertise with a focus on optimising the overall process via the various control systems.

This group supports the skills of our I&C Systems Engineers to develop SCADA, DCS and PLC systems to suit each unique situation. Our mix of expertise and experience allow Plexal Group to develop and implement systems that perform beyond the base design expectations.

Over the years our people have confronted and successfully dealt with many of the interface issues presented by multiple sub-systems.

Office based emulation is used to provide a high level of assurance that a robust design will be deployed, significantly reducing the risk of system clashes, schedule and budget overruns during commissioning and conflict resolution.

Plexal Group's people come from varied backgrounds such as operations, maintenance, EPC contractors, design consultants and system vendors.

With these different views of the world under the one roof, and having worked together for many years, Plexal Group is able to effectively translate the requirements of each interested party into an effective working system.

We can identify system constraints before reaching site and constantly challenge the capabilities of the various technologies to optimise production opportunities.

Plexal Group comprehensively understands the business drivers, various phases, approvals and considerations each group goes through during development of the plant design and resulting systems. This knowledge facilitates smoother project management, efficiency opportunities and decreases the risk of rework.

Our independence complements the products and services provided by the Vendors and assists in working with them without bias. This gives us the flexibility to implement the appropriate technology to deliver the desired business outcome.

## Our Service

Our Clients have the option to engage Plexal Group in a number of roles to provide varying levels of service. Plexal Group can act as 'one of the many' or alternatively represent the Client as the overall project manager of the system development whilst performing specific tasks.

Tasks centred on the proprietary systems such as Turbine Controls would typically be performed by the Vendor(s) with Plexal Group providing interface engineering, project coordination and design and configuration of the plant-wide systems.

Plexal Group can provide full turnkey services:

- Opportunity assessments & system roadmaps.
- Conceptual, front-end & detailed engineering.
- System interface engineering.
- Plant-wide system design and coding/configuration including operator interfaces.
- Systems verification testing.
- Construction management.
- Performing upgrade/cutovers.
- Pre-commissioning & commissioning
- Final validation and handover
- Support (See Profile No. 8)



## Collaboration

It is essential that a cohesive and collaborative relationship exists between all parties. We welcome the opportunity to work alongside all participants from operations to the EPC contractor and various vendors.

## In Summary

Plexal Group's specialist team and approach have a proven track record of delivering outstanding value whilst significantly reducing the project and operational risk inherent with control and safeguarding systems.