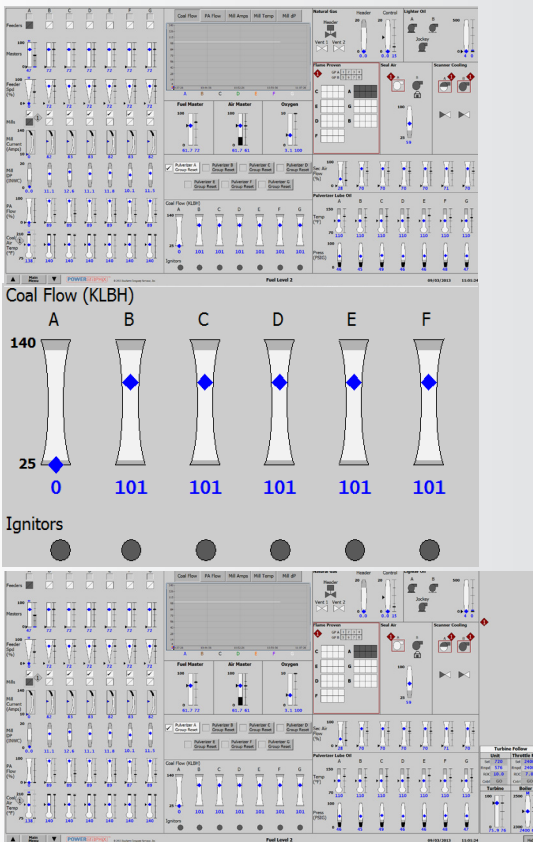


PowerGraphiX 2.0 is the latest innovation in operator interfaces that significantly enhances situation awareness in the power industry.



### Key Benefits:

- Improves operator situation awareness
- Standardizes templates for units and their subsystems
- Reduces training and maintenance effort
- Reduces engineering costs per unit by \$50K+
- Reduces the number of graphics required by up to 75%

### The Challenge

Poorly designed human machine interfaces (HMI) in the power industry hinder an operator's ability to rapidly recognize emerging abnormal situations, often leading to upset conditions and unplanned shutdown.

With the advent of the distributed control system (DCS) in the mid-1970s, the operator's scope of responsibility increased considerably – more instruments and significantly higher number of alarms. In the rush to take advantage of the new microprocessor-based DCS, automation suppliers, engineering firms, and operating companies overlooked the basic needs of the operator for clear and concise visibility to real-time information. In most control system upgrade projects, the operator interfaces were an afterthought, and little attention was given to the ergonomic design and the usability of the displays.

Today, operator graphics at most plants are overloaded with information, are cluttered with inconsistent use of colors, and lack proper pattern recognition. The power industry has identified improving the design of operator interfaces along with optimizing the alarm systems as critical safety and plant reliability opportunities.

### The PAS Solution

The design of the human-machine interface (HMI) plays a critical role in determining the operator's ability to effectively manage the operation, particularly when faced with abnormal situations. PAS has developed the seven step methodology for the practical implementation of High Performance HMI™ in power plants.

PowerGraphiX is a high performance HMI solution for the power industry. It is a collection of predesigned operator graphics and object libraries for coal fired, combined cycle, and super critical power plants.

PowerGraphiX has been implemented and operator tested at numerous power plants.

Features include:

- Utilization of a standardized color palette to ensure abnormal situations stand out
- Utilization of pattern recognition to transform data into actionable information
- Incorporation of operator assistance: alarm documentation and rationalization information, operational boundary limits, and procedures



Oil & Gas      Refining  
Metals & Mining    Chemicals  
Pulp & Paper      Power

## About PAS

PAS is the leading global solution provider of ICS cybersecurity, process safety, and asset reliability in the energy, power, and process industries.

Our comprehensive portfolio includes solutions for industrial control system cybersecurity, automation asset management, and operations management which includes alarm management, IPL assurance, high performance HMI, boundary management and control loop performance management.

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## The Gold Standard for Power HMIs

PowerGraphiX was developed by a team of power operations experts averaging over 20 years of industry experience. A variety of perspectives were taken into consideration for the careful design of each graphic: console operators, shift supervisors, and plant engineers. The methodologies used to develop these graphics were based on the industry recognized book, *The High Performance HMI Handbook*.

Thousands of hours were spent on designing, reviewing and editing the displays to achieve unparalleled situation awareness for the operator. The designs were implemented at numerous power plants. The lessons learned from these deployments have been incorporated into the final designs.

## Reduce the Cost of HMI Projects

PowerGraphiX consolidates and organizes information on the displays, providing operators an intuitive view of their plant operations with fewer graphics and DCS hardware.

This provides the following benefits:

- Reduced DCS hardware/licensing costs
- Reduced engineering costs
- Reduced number of graphics

These benefits allow for reduced on-going maintenance cost through the life cycle of the fleet's HMI.

"[PowerGraphiX] was originally created to streamline information displayed in control rooms across our generating fleet, significantly improving operator effectiveness."

- Harvey Ivey, Southern Company

For information on how to purchase PowerGraphiX, please email [sales@pas.com](mailto:sales@pas.com).