

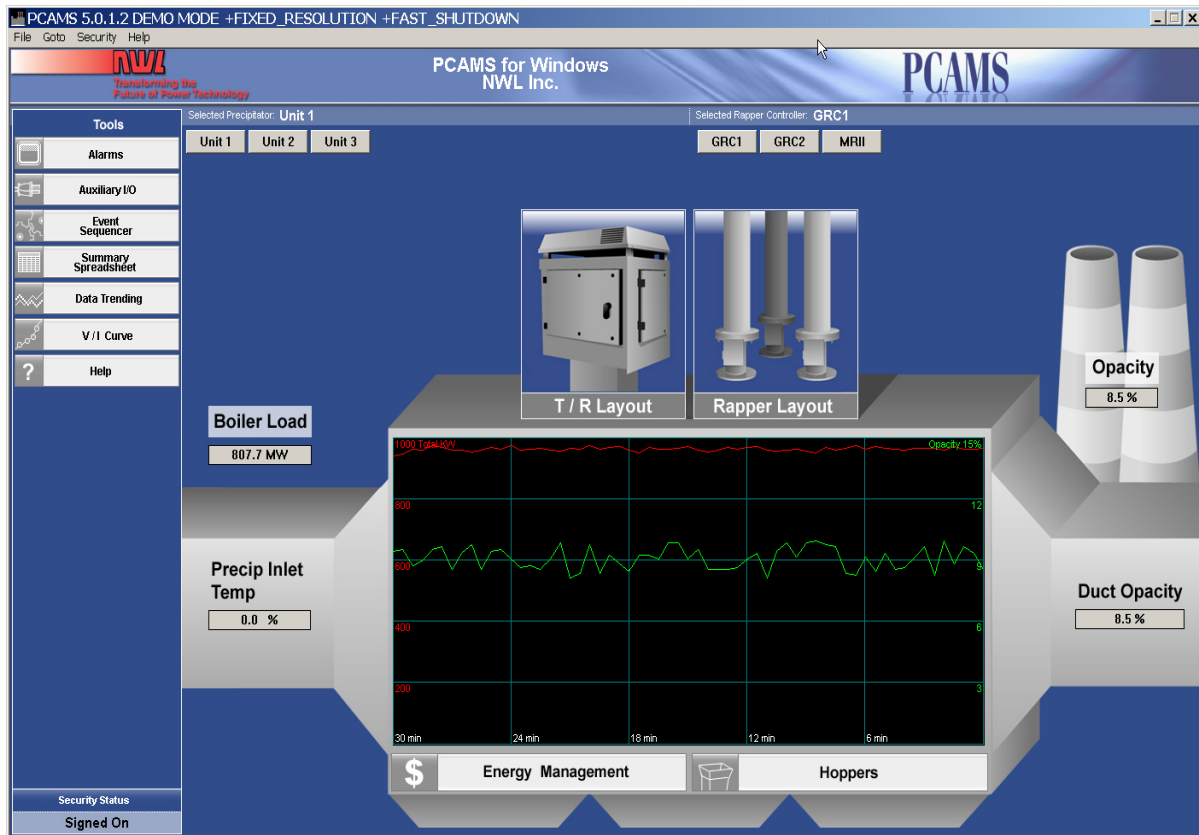
# Precipitator Control and Management System

## Complete Electrostatic Precipitator Control Package

NWL's Precipitator Control and Management System (PCAMS) combines proprietary software, a PC, and a central interface into a comprehensive monitoring and control system. PCAMS enables you to monitor up to 8 precipitators per facility, showing T/R outputs, boiler loading, inlet and outlet gas temperatures, and opacity measurement. The graphic displays provide real-time viewing of numerous operating parameters. For more detailed information on specific equipment, simply point and click on the device's icon.

Our unique Energy Management program feature allows you to automatically operate your T/R sets at the lowest power while still maintaining required opacity levels.

By incorporating an Object Link/Embedding for Process Control (OPC) server, PCAMS data is transmitted to your plant's central control system. With the addition of remote access software (GoToMyPC, LogMeIn, etc.), you can access PCAMS and have the same process control as if you were at your plant computer.



PCAMS consists of a main I/O interface, LCD module, PC with monitor, keyboard, mouse, and proprietary software (Microsoft Windows® OS based) for ESP equipment control, data logging, trending, energy management and display.



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## Precipitator Control and Management System Features

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- **Energy Management** – this feature enables PowerPlus or our linear T/R sets to run at the minimum possible current while still delivering the required particulate performance (opacity) to meet your plant's permit. This is done by attaining the lowest possible opacity and then backing off the power until opacity starts to rise. Power is then re-adjusted until the best opacity level is achieved. Customers have been able to reduce input power by up to 30%.
- **Switchmode and T/R Control** – control up to 90 power supplies per precipitator. You can turn individual units on and off, set and check alarms, and set control parameters such as spark setback, quench, spark ramp, undervoltage trip, undervoltage relay, and current and voltage limits. V/I curves and other trending graphs are stored and can be recalled for comparison with current operating data. Our PowerPlus switchmode power supply seamlessly integrates with PCAMS to form an outstanding power management tool.
- **Rapper Control** – control up to 8 Graphic Rapper Controllers (GRC) with a single PCAMS. As with power supply function, you can control either single rappers or rapper groups and instantly see output number, type of rapper, and enabled or alarm status. Rapper sequencing, duration and intensity can be set separately for up to 64 groups per GRC.
- **Dual Mode Hopper Management** – Hopper evacuation is easy with this feature. "High" input and "high-high" input alarms signal either activation of vibrators or the shut-down of specific power supplies. The "high-high" shut-down option helps avoid shorting of electrical fields due to particle re-entrainment, which provides additional assurance that hopper loads are properly managed.
- **Interconnectivity** – PCAMS data can be integrated with your plant's central control system using OPC (Object Link/Embedding (OLE) for Process Control), which has become the de facto industry connectivity standard.
- **Icon driven displays** – simply click on the device to display the current operating status. The intuitive menu-driven program does not require any training to master. Performance charts, V/I curves, opacity trending, and numerous other parameters are easily accessible. You can view up to six different screens simultaneously.
- **Remote Access** - by adding a software package that allows connection to your plant network, full ESP control can be yours from any location.

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## Unmatched Capability

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NWL has been the undisputed leader in ESP power supplies and controls for over two generations through constant innovation and outstanding customer support. We stand ready to assist you any way we can.

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