PRECIPITATOR OPTIMIZATION SYSTEM (POS) SOFTWARE OVERVIEW

The Neundorfer Precipitator Optimization System (**POS**) is an intuitive, graphically oriented software control system for interacting with the precipitator. POS has a range of modules to allow users to remotely operate precipitator controls, better understand and troubleshoot precipitator performance, and to optimize operation to improve efficiency and environmental impact.

Operator Interface and Remote Control Functions

- Perform On, Off and Alarm Reset commands for T/R set voltage controls
- Remote display of all local indicators for each Voltage Control and High Frequency T/R Set
- Ability to adjust voltage control settings
- Real-time plan view display of T/R Sets indicating On, Off, Tripped, and Communication status
- User adjustable T/R Set Icons can display information graphically or numerically along with Electrical Field Mapping to display operating levels across the precipitator
- Change between rapping programs and Suspend/Resume rapping for rapper controls
- Real-time plan-view display showing each rapper as arranged on the precipitator
- Rapper status is indicated by color change to show rappers ready, rapped properly, failed with open coil, or failed with shorted coil
- Intuitive Rapper Programming interface to create or adjust rapping sequence
- Real-time display of process signals including Unit Load, Stack or Duct Opacity and additional process analog and digital signals.
- User configurable alarm indication and annunciation – alarms can be e-mailed according to priority

Data Logging, Diagnostic, and Troubleshooting Functions

- ESP Performance modelling to predict relative efficiency of precipitator lanes based on live operating data
- "Outage Map" display that pinpoints problem sections in the precipitator that are contributing the most to opacity issues
- Data logging at 5 second intervals for all precipitator control and process data
- Advanced line trend and numerical historical interface for all logged data
- User-configurable report generator with selectable time frame, data sources, automatic output and selectable output to printer, file, or e-mail
- 3-D bar graph display showing live and historical T/R Set data over the area of the precipitator energized by each electrical section

- Enhanced V-I curve function to sequentially gather and plot up to eight V-I curves on a common graph including ability to store V-I curves on hard drive for later display or export for offline analysis (Neundorfer MVC only)
- Real-time and historical plotting of Rapper Operation and Opacity to show effects of rapping sequences on emissions
- Visually enhanced Digital Storage Oscilloscope allows user to analyze real T/R Set electrical waveforms and voltage control re-actions to sparking (Neundorfer MVC only)
- Customized trend graphs allows users to save individual trend groups and add notation to trends
- Voltage Control actions are logged and displayed on trend graphs including parameter changes, POS function interactions, control trips, and all operator commands
- Rapper Control actions are logged displayed on trend graphs such as program changes, POS function interactions and operator commands
- Configurable Event/Alarm log stores all indications of T/R set trips, POS function actions, and any errors in communication

Advanced Feedback Based Optimization Functions
- Performance Optimization module adjusts voltage control levels to achieve the most efficient powering of the precipitator at the lowest level of emissions
- Power Off Rapping module allows scheduling of reduced power rapping events with configurable opacity and load thresholds and requires no extra hardware
- Raping Optimization module selects the most appropriate rapping sequence based on configurable load, opacity, time of day, or other process settings
- Start-up/Shut-down module automates the process of bringing the precipitator in or out of service based on configurable set-points such as O_2 levels or MW Load.
- T/R Auto Adjust module adjusts specific Voltage control set points to allow the precipitator to react to variable process conditions or batch processes

Additional Features
- System overview screens to show status of all active POS functions in one place
- User-configurable graphics allow each user to customize their view of the precipitator
- Data interface drivers for integration into plant DCS or PI systems
- History Snapshot button to easily send data to Neundorfer for troubleshooting
- Optional Remote Clients allow users to view only or fully interact with POS software from any networked computer