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EAST SEA ENERGY ENVIRONMENT

Project: UPGRADING NOF NETWORK HEATING SYSTEM
Customer: HOA SEN GROUP

TURN IT BALANCE

Currently, factories of Hoa Sen Group across the country have many lines with different heating systems, making it difficult for the operation and maintenance and backup supplies.

The power supply system and heating process control have been invested for many years, the old control method, causing huge energy loss. The control program is not flexible, the automatic control is low, making the operation efficiency not high.

The documentation system is not clear, is not the same and uses uncommon language, so it is difficult to understand the system and maintain the

Difficulty in purchasing replacement parts and spare parts. Especially, the SCR sets made by China are very old, near the end of equipment's life cycle.

The customer's Issue

The customer's request

Improve energy efficiency.

Improve the quality of the power supply system, comply with regulations on power quality criteria (Harmonic) according to Circular 39.

Flexible operation management.

Integrate information into the factory energy management system.

Able to deploy broadly, synchronously for all remaining lines.

More optimized for maintenance and backup purchase later.

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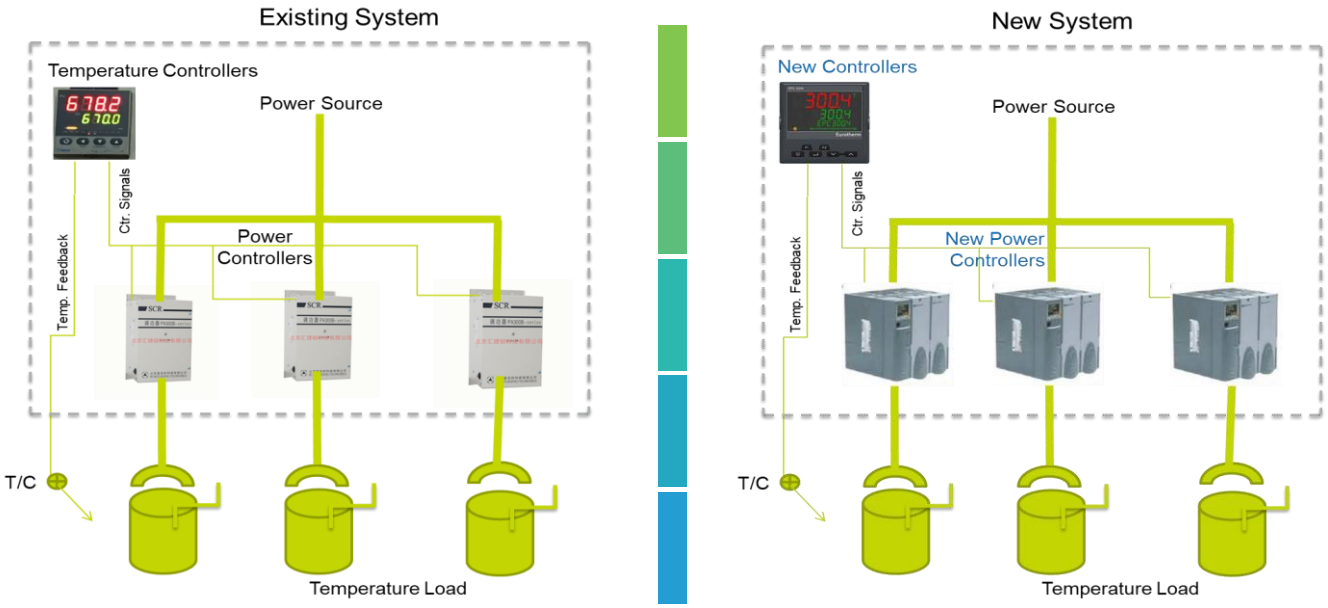
How We conquer the Customer

Our solution is upgrade the NOF plating furnace heating system

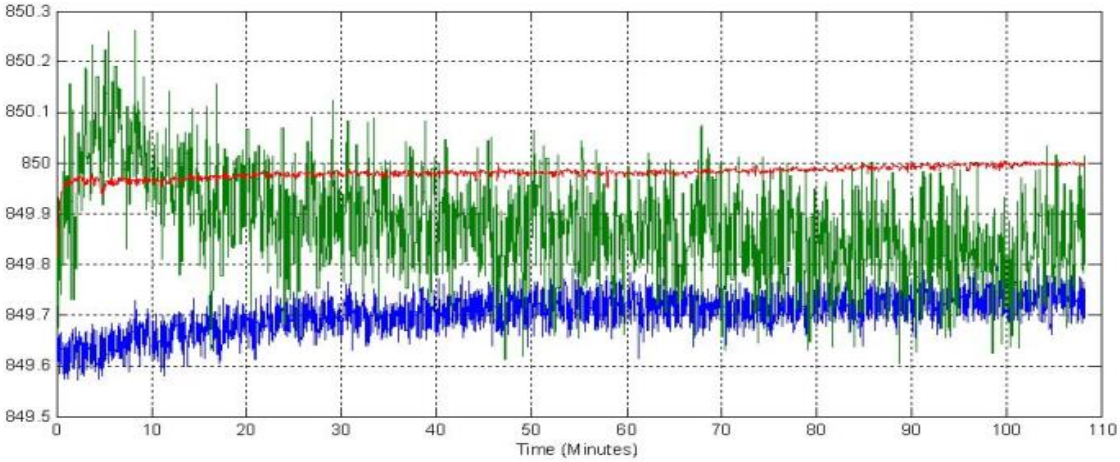
❖ Comparison 2 systems



Running in Phase angle mode, have low power factor, increase harmonics of the system	Running in burst firing mode, have high power factor (PF can be 0.98), reduce harmonics, increase lifetime of heater elements
An additional reactive power compensation system must be used	No need to use reactive power compensation system
Using the old heating control technology. Temperature deviation can be more than +/- 10°C	Use PID function for high accuracy temperature control. Temperature deviation is lower than +/- 1°C
Ventilation of cabinet haven't worked, cause high temperature inside cabinet during operation, will effect to lifetime of equipment	Panel have good ventilation, keep equipment cool, will be good for equipment
Have risk when operate in the cabinet due to can access directly to power components	All power components/ parts have been covered, safety for operation team

TURN IT BALANCE

❖ Accurate Measuring compare to the Competitor Products



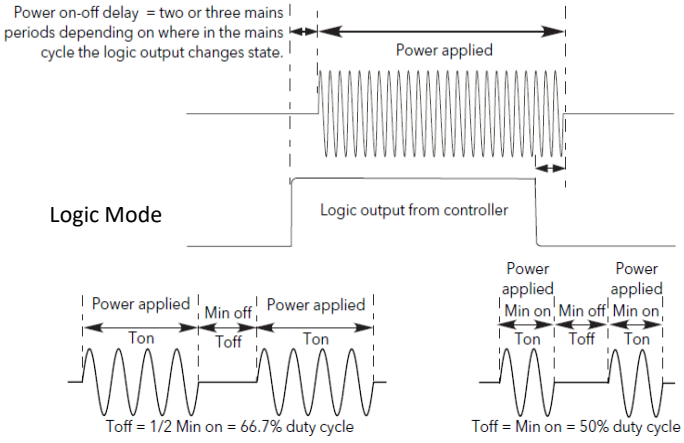
Eurotherm by Schneider Electric

Competitor 1

Competitor 2

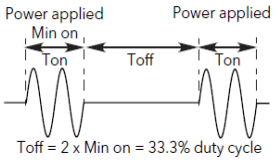
Higher accuracy means lower drift, higher stability, reduced control oscillation, and easier regulatory compliance

Firing Modes

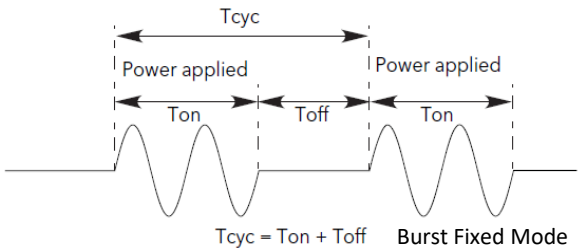


Logic Mode

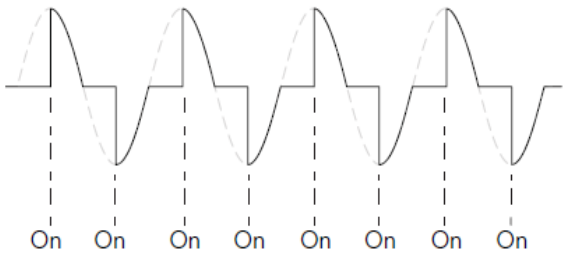
Min On = Min Off = 2 for these examples



Burst Variable Mode



Burst Fixed Mode



50% shown.
Power is proportional to area under curve

Phase Angle Mode

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TURN IT BALANCE

Effectiveness

The new system (after upgrading) calculates more energy savings compared to the old system

	Old System (1)	New System (2)
Production load (Kg)	10,826,850	9,610,000
Energy (kWh)	79,758	65,403
kWh/ Ton	7.37	6.81
Saving factor: (c1 - c2)*100%/c1 =		7.61%

Harmonic as the EVN standard

Old

TÔN HOA SEN
Mái ấm gia đình Việt

New

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