

Power Monitoring Power Management

Requirement Customer uses electrically fired furnaces for casting and heat treat of superalloy products. Each furnace can consume up to 300 KW during full heating operation.

Electrical utility contract calls for a peak demand premium. When several furnaces were operated simultaneously at full power a new peak electrical demand would be reached. Peak demand premium could be as much as 50% of the total electrical utility charge.

Solution Power monitoring devices are installed on each substation.

Monitors measure and report electrical demand based on measurement and based on K-Y-Z pulse signal from substation equipment.

PLC logic acquires electrical usage information.

If a new electrical peak is being set, a visual indication is made to signal operators to reduce electrical demand.

If electrical demand is near a new electrical peak, a visual indication is made to signal operators to wait before starting additional furnaces.

If electrical use is below these limits, operators can operate furnaces as required for production.

Benefits Electrical utility charge is reduced by more than \$100,000 per month.

Power monitors also provide information on power quality. This is used when analyzing distribution quality problems from the utility provider.

