



# Projects Showcase

## Turn Key

### Power Outage Solution



A company in Schenectady, NY needed to solve the problem of the event of a utility power outage. KJ Electric engineered the project, procured and installed the equipment, started it up and tested it. The result supplies 13.8KV to the facility in the event of a power outage.

The company had a 900KW 460V generator and fuel tank. KJ Electric supplied the following:

- 460V Motor operated **circuit breaker** in a free standing enclosure

- Step Up Transformer** 460V - 13.8KV

- 13.8KV Lineup** with (2) 1200amp **vacuum circuit breakers** and a **utility metering compartment** complete with the **automatic transfer scheme**

In the event of a power outage, the utility breaker is opened, the generator starts and stabilizes. The 460V breaker closes in on the primary side of the step up transformer, then the generator breaker closes, supplying 13.8KV to the facility. When the power is restored the generator breaker opens and the utility breaker closes. The generator then cools for 15 minutes and shuts down.





**EPC**  
**Engineer,**  
**Procure,**  
**&**  
**Construct**  
**Substation**  
**Upgrade**



A paper mill in Cohoes, NY was in need of a primary substation upgrade. The existing 3750KVA primary substation transformer servicing the facility had reached its maximum capacity and the existing secondary 5KV main breaker was feeding a bank of (4) 5KV load break switches.

KJ Electric provided the following:

- Transformer** - 7.5MVA (34.5KV primary / 4160V secondary)
- 5KV Outdoor walk-in single aisle switchgear** - consisting of (1) 2000amp **main breaker**, (5) 1200amp **feeder breakers** and a **utility metering compartment**

All of the equipment, including a new pad for the switchgear, was installed, tested, and started over two days in August.

# TURN KEY

## Water Processing Upgrade

The City of Oswego needed to update the system that pumps it's water from the lake to it's end users. The existing equipment was from the 1940's and had been repaired so many times it was on it's last leg. This, in conjunction with the need to upgrade to energy efficient equipment, is what drove the approval of the project.

### Finish Water

Medium voltage drawout circuit breakers were starting the motors. KJ Electric converted these circuit breakers to **transformer feeders**, supplied new **transformers** (with a low voltage secondary) which fed new **VFD's**, powering the new vertical solid shaft **motors**.

### Raw Water

The horsepower of these four pumps was increased and four new **A.C. adjustable speed drives** were installed. This was accomplished by converting the starters in the low voltage motor control centers to feeder breakers. Power was then fed to the four new VFD's, controlling the four new motors.

All of the raw and finish water elements of the system were tied together with an **automated control system**.

All equipment was purchased, installed, tested, and started up by KJ Electric.



# Machine Rebuild & Panel Building

KJ Electric's Custom Control Panel Shop recently completed a drive control panel for International Wire Group. The panel will control a new wire drawing machine to be installed at their Sherrill, NY manufacturing plant.



The main drive panel has 7 bays, and is NEMA 12 rated to keep copper dust out of the internal electronics. The panel has two air conditioning units to keep the equipment inside cool.



The panel includes 9 AC vector drives, from 2 to 150 hp, with common DC bus for load sharing applications. The drives control the entire machine from the drawbox, where a wire rod is drawn down to fine wire, to the dual spooler where the fine wire is wound on reels for shipment to the customer. The panel also includes a complete PLC system and motor starters for all of the auxiliary controls required for the machine.



The operators control console, with a 256 x 128 pixel interface screen, gives the operator a single station where he can monitor and control the entire machine.



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