

INSIDE THIS  
ISSUE:

Captain's Note 1

Upcoming Events 1

Technical Spotlight 2

Power Factor 3

Useful Formulas 3

Mind Meld—  
crossword

## Captain's Note

Welcome to the first edition of "It's Electric". This newsletter will be published on a regular basis to keep you informed.

Many things have changed over the past 25 years; one thing that has remained the same is our commitment to serve you and meet your needs.

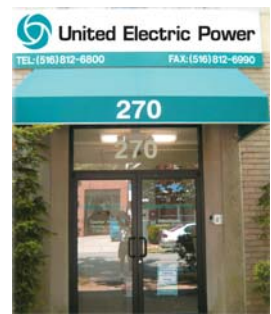
Our objective is to be your "One Stop Shop" for all your repair, service and supply needs. To meet this goal, we have added many services and our locations are staffed and stocked to the rafters. The following services are under our 120,000 square foot facility: Computerized dynamic balancing, UL508 Panel Shop, Pump Fabrication and Service, Electrical Supplies for all needs.

On a regular basis we schedule seminars focusing on Motor and Pump Maintenance, OSHA Compliance, Data Communication and products such as VFD drives and PLCs. These seminars are held in our Garden City Park offices and are announced on our website, our facebook page and by customer invitation.

The newsletter will have a common issue and answer column, a technical spotlight and a mind meld to keep that brain active.

We thank you for your relationship with United Electric Power and look forward to upcoming challenges with you.

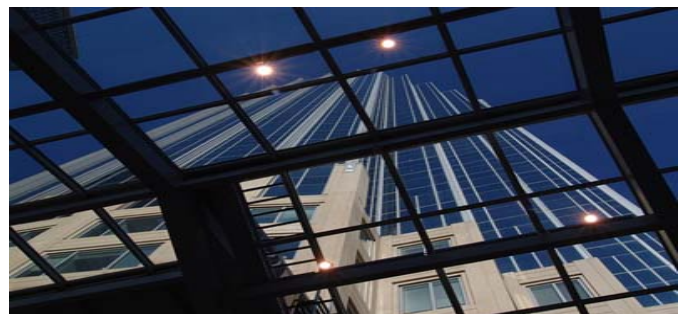
*Jerry DiCunzolo*  
President



## Upcoming Events

October 4-6 we will be at WEFTEC in New Orleans.

Open House festivities in the works — details to follow.



*Real Power is expressed in Watts! Reactive Power is expressed in Volt-Amperes (VAR). Apparent Power is expressed in Volt-Amperes (VA).*

## NYS Ruling—Avoid Increases in Your Electric Bill

You may be paying more than is necessary for electricity if your power factor is not as high as it could be.

In a recent ruling, the New York State Public Service Commission stated that “Reactive power charges...should...be a component of the rate structure for the large customer classes. All customers will benefit...through active participation by large customers who choose to reduce their reactive power usage...by installing on-site equipment to improve their power factors.” Consequently Con Edison will be raising the target power factor that their customers with a monthly demand of more than 500 KW must maintain to not be charged this penalty from .90 to .95.

By now you may be asking “what is power factor and how can I avoid paying this penalty?” Very simply, power factor is a measure of how efficiently you use the electricity provided to you by your utility. Most industrial facilities and many commercial and institutional facilities have many inductive loads, such as, motors, transformers and relays, which require magnetizing current to operate. This magnetizing current is measured in KVAR. When the utility supplies this KVAR it uses additional distribution capacity. That is why the Public Service Commission has mandated that utilities bill at a higher rate when a customer doesn't use power in an efficient manner.

Let's take a look at a slightly more technical definition of power factor. All users need kilowatts to do the useful work done in any facility. This is referred to as real power. However, an additional component of electricity, reactive power or KVAR, is needed to supply magnetizing current to motors, transformers and relays. The sum of these two components is referred to as apparent power or KVA. In the diagram, the customer initially uses 100 KW at a power factor of .70. This requires the utility to supply 142 KVA for the customer's needs, since they are also providing the KVAR. If the customer provides the KVAR by installing capacitors he can raise his power factor to .95 and reduce the apparent power (KVA) he needs to 105 KVA. This reduces what the utility has to supply and consequently reduces the customer's electric bill.

You can also look at the right triangle as an inclined plane to demonstrate the difference between apparent power (KVA) and real power (KW). The KVA is a group of individuals needed to push a ball up the inclined plane to the other side. The KW is what is needed to get the ball to the other side if the plane were flat. However, additional effort (more individuals) is needed to keep the ball on the inclined plane from rolling back. These individuals do not do any useful work as they are only keeping the ball from rolling backwards. In other words, additional “capacity” is needed to move the ball across the plane if the angle is steeper. This is equally true for the utility who must supply the additional capacity to provide both the KW and KVAR (or KVA) for the customer who does not supply its own KVAR with capacitors.

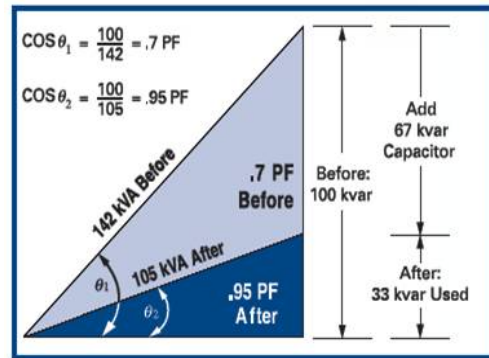
Besides increasing the power factor, installing capacitors can also improve your voltage, increase your system efficiency by lowering your line losses and even increase your system capacity, reducing or possibly eliminating capital expansion expenses, often resulting in a very economic payback.

## Power Factor Correction— Possible Tax Penalty coming soon

In October Con Edison will be implementing a power factor penalty tax for customers who demand more than 500 KW. If you do not maintain a power factor of at least .95 you will be charged for the vars that they must supply to you, increasing your electric bill.

By applying capacitors on your electrical system, you can supply the vars required by your motors and transformers. This will eliminate the need for Con Edison to supply them, greatly reducing your electric bill. This message comes to you from United Electric Power, Staco Energy and Tri-Tech sales. Call United Electric Power at for more information and how you can avoid these increases coming your way on your electric bill.

Please contact the office at 516-812-6800 or your sales person for a free site survey with suggestions for corrective action.



## Useful Formulas

### Volume of Liquid in a Tank

Gallons = 5.875 x (DxD) X H

D = Tank Diameter (ft.)

H = Height of Liquid (ft.)

1 Gallon (US) of water weighs 8.35lbs.

### Electric Motors

Horse Power (single Phase) =  $\frac{E \times I \times \text{EFF} \times \text{PF}}{746}$

Horse Power (Three Phase) =  $\frac{1.32 \times E \times I \times \text{EFF} \times \text{PF}}{746}$

E=Volts, EFF = Efficiency (decimal), I = Amperes, PF=Power Factor



# United Electric Power

**270 Park Ave**  
**Garden City Park, NY 11040**  
**Phone: 888-6-ITSELECTRIC (648-7353)**  
Email: [info@uep.net](mailto:info@uep.net)  
[www.unitedelectricpower.com](http://www.unitedelectricpower.com)

**United Electric Power (UEP)** is a unique electrical supplies distributor, fabricator, and motor and pump repair firm serving the New York metropolitan area. UEP is a Master Distributor and Manufacturers Representative with **REAL SYSTEMS SOLUTIONS**. We have all the products you need ranging from commodity items such as wiring devices, fittings, and light bulbs to more specialized items such as motors, computerized industrial controls, programmable controllers and custom panels. In addition we are experts in the sales and repair of all types of motors, pumps and water systems. We offer engineering support, in-house panel fabrication and state of the art repair facilities for any motor or pump from fractional through 1500 HP in either low or medium voltages.

**Mind Meld — Find the following words in the puzzle to the left. Words will be up, down and diagonal in the puzzle.**

RWLENKLEINBADU  
PEMISAPOWERFLO  
UNJOTCHIMOTORS  
MTIBTTVSIEMENS  
PRGAELECTRICAL  
SERLFURLFURNAS  
GLEDKAIMFETBPS  
SEONJUMEUSTCY  
MCNRUJKNPDSORL  
EPLDEHOPKREEEV  
CLENIPOKJPACOA  
HGENEOLNUDNANN  
ALLCAPKMUCIORI  
NETCTKYNREIL EA  
IVRUORYFOTLLAR  
CIOITEOF APOHSP  
ATOTSKEMUNITED  
LONOCROUAOYSIR  
ENWROTPCITRTCE  
LEUDUPEERLESSE  
TTIANLIGHTINGU

United  
Littelfuse  
Sylvania  
Leviton  
Baldor  
Lighting  
Siemens  
Electromate  
Automation  
Entrelec  
Turck  
Furnas  
Pumps  
GreenLee  
Mechanical  
Powerflo  
Paco  
Peerless  
Electrical  
Motors  
ITE