

FROM: Steve Bolles

SUBJECT: Evaluation of Savings for USES Shunt Efficiency Units

Bill:

We have re-evaluated the energy savings produced from the USES power conditioner units recently installed at the Warren WWTF. Our review was based on field measurements readings, saving calculations done by System One Sales and a review of the facility utility rate structure. From this information we have concluded the following:

1. The onsite metering by HEC agrees with System One Sales metering performed at the same time.
2. The new kWh calculations performed by System One Sales are acceptable. However, HEC recalculated the cost savings based on a weighted kWh average (peak, on peak, shoulder rates) based on hours in each rate period and KVA demand charges. The expected energy savings shown below are slightly less than System One Sales calculations, but still within acceptable values.

Weighted average cost/kWh: \$0.05973

Average 1995 fuel cost/kWh: \$0.0129

Average cost /kWh: \$0.07263

Average 1995 demand cost: \$4.99/billed kVA

Annual kWh Savings:  $16\text{kW} * \$0.07263/\text{kWh} * 8760 \text{ hours} = \$10,180$

Annual Demand Savings:  $16\text{W} * \$4.99 * 12 \text{ months} = \$958$

Total Annual Savings: \$11,138

Payback based on \$16,700 project cost: 18 months