

Energy Conservation & CHP

MAR/APR '07

ENERGY CONCEPTS ENGINEERING

The leader in energy efficiency and energy conservation



Inside this Issue

- *Arrow Linen*
- *NYSERDA PON 1101*
- *Emissions Regulations*
- *EC expands NYC office*

Arrow Linen Saves Energy

For the past two years, Arrow linen has been operating their combined Heat and Power Plant, in Brooklyn, NY. The decision to construct and operate a CHP plant at the industrial linen facility was driven by the ever increasing energy cost being incurred. "the cogeneration plant gives us the ability to buffer against the volatile energy market." says Frank Park, Director of Engineering at Arrow Linen.

With high heating requirements and the need for large amounts of hot water, the laundry is a great candidate to benefit from the heat recovery of the chp plant. Producing 300 KW of power to offset about 85% of the electrical requirements, Arrow gets the added

advantage of 6,000 Mbtu's of heat, offsetting the need for much of their hot water heating requirements of 250 gallons per minute. The plant boast a spectacular 89% operating efficiency annually.

Frank notes: "The sound design and special attention paid to the details are the main reasons this

These simple economic advantages are increased even more with the addition of the NYC rebates for "clean cogeneration".

The city offers an initial \$0.444 per kwh produced by the cogen system, as well as a 35% discount on natural gas charges. Couple these with NYSERDA grant programs of up to 30% of construction costs and Federal tax breaks, the economic benefit to the owner climes even higher, and drops the simple payback to less than two years.

To see the plant real-time data being collected by NYSERDA go to www.chpreliability.com and follow the links for the Arrow Linen Facility.



plant is so reliable and successful"

Important Links

- Energy Concepts
- Arrow Linen
- NYSERDA
- KeySpan Energy
- NYS DEC

NYSERDA Releases CHP funding in NYC

NYSERDA recently released the Tier III of the Commercial Industrial Performance Program under PON 1101. In addition to the existing incentives for high efficiency chillers, gas driven chillers, and other energy conservation measures, this new release specifically

addresses cogeneration in Con Edison territory, and offers healthy grant incentives for installing CHP plants.

Unfortunately the program is limited by excluding microturbines and fuel cells, leaving the likely alternative of the internal

combustion engine. But the problem gets more complicated. PON 1101 requires that the CHP system be capable of running off grid. In order to do this, the generators must synchronous parallel with ConEd. Continued on next page.

3445 Winton Place
Suite 102
Rochester, NY 14623

Phone: 585-272-4650
Fax: 585-272-4676

E-mail: jweinschreider@nrg-concepts.com



ENERGY CONCEPTS ENGINEERING

25 Chapel st
Suite 902
Brooklyn, NY 11201

Phone: 718-701-5754
Fax: 718-228-5154

E-mail: jweinschreider@nrg-concepts.com

Continued from first page. (NYSERDA) This requirement poses a problem as it is well known that ConEd will typically not allow the interconnection of a Synchronous plant with their network, especially at the 208 volt level.

So now we have a catch 22 in order to satisfy the requirements of PON 1101 the CHP system must be capable of operating independent of the grid by using

synchronous generators, however, Con Edison will more than likely not allow the interconnection of these generators to their network.

There are a couple of solutions to this dilemma, however, they all add cost to the projects. The benefits to them are that the facilities will be capable of operating without the utility. An event occurring more regularly lately, with brownouts and blackouts hitting parts of

the city every summer.

For more information on the program visit NYSERDA.org.

For more information on innovative solutions contact Energy Concepts Engineering.

Welcome Aboard

Energy Concepts would like to announce the most recent addition to the NYC office. Mr. Chris Volney has recently joined Energy Concepts to provide support and to reinforce our growing market place in the energy and MEP consulting industry in NYC and surrounding regions.

Emissions Regulations and Central Plants

The question of emissions from central plants is one that often does not get addressed until after construction begins and facility operating personnel start to get involved.

Fortunately, if attention is paid during design of the central plants, many emissions regulation issues can be addressed and even more likely avoided all together with minimal investment.

In New York State, emissions are regulated on two levels, unit specific emissions, and overall facility emissions.

Typically most fuel burning

equipment manufactured today is well within the specified emissions limits set by the NYS Department of Environmental Conservation (DEC). However, the trouble begins when all of the fuel burning equipment in a facility is aggregated together to get the total facility emissions level, regulated in Tons of Nox (nitrous oxides) per year.

Facilities with older equipment that are currently in compliance, can get into trouble when central plants are expanded, or new fuel burning equipment is installed adding to the emissions contributions. If the new con-

tributions are enough to push the facility over the limit, then more extensive permitting requirements apply, with additional processes, inspections tests, and fees, etc.

Generally these concerns can be avoided as long as special care is given to addressing the issues at the beginning of the project.

