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Case Study

Customer
Spring Creek Towers

Location
Brooklyn, NY

Industry
Multifamily Housing

AERCO Product
46 Benchmarks
(2500, 3000, 5000, 6000)

The Path to Decarbonization with Benchmark Boilers

What the Client Needed

Spring Creek Towers is a major housing unit with 5,881 apartments in the southern section of Brooklyn, NY. With 46 buildings and its own school, this sprawling apartment complex is larger than a typical college campus and has a larger population density than many small towns.

The heat and domestic hot water (DHW) for all their buildings had been provided by a central, gas-fired CHP plant. However, this aging underground heating/DHW distribution system had deteriorated and was found to be operating at a mere 49% efficiency.

With future electrification mandates in mind, Spring Creek Towers initially thought to upgrade the plant to an electric heating system. However, the current grid structure could not handle the added load for heat and DHW generation at the site.

In addition, Spring Creek Towers is an area with very high levels of background NOx due to their population density and the location sitting at the intersection of the Belt Parkway and Pennsylvania Avenue, close to John F. Kennedy International Airport. So their new system not only needed to improve their efficiency, but also the property's air quality for their residents.

AERCO's Solution

AERCO's sales representative, GA Fleet, quickly responded and worked with Spring Creek Towers owner, Brookville, as well as their facility manager, Jay Sikora at The Experts. They selected AERCO Benchmark boilers to upgrade the system not only because of their superior high efficiency and patented AERtrim O_2 Trim technology, but also because they're ultra-low NOx <9ppm and will allow the facility to remotely monitor the site's fuel economy, emission levels and more via AERCO's onAER Predictive Maintenance analytics tool.

For the new system, GA Fleet furnished 46 Benchmark boilers in eight modular plants. Each plant utilized multiple BMK 5000 and two BMK 2500 boilers or multiple BMK 6000 and two BMK 3000 boilers. The smaller two units in each modular plant provide better turndown for DHW summer use.

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Results

81%
INCREASE IN EFFICIENCY

91%
REDUCTION IN NOx

0
DRAIN ON POWER GRID

The mechanical spaces are located in eight parking garages, each surrounded by a cluster of high-rise buildings. Each plant is fully monitored by a SCADA system, which is also able to be remote monitored via onAER Predicative Maintenance. onAER helps optimize the plants' performance by ensuring units are operating at maximum efficiency with lowest emissions, while also preventing costly issues from developing.

Return on Investment

With multiple-sized, high-quality Benchmark boilers working together seamlessly and packaged into modular plants, the fuel to hot water efficiency at the mechanical room entrances went from 49% to 89% – a 81% increase in efficiency translates into huge energy savings.

Spring Creek Towers has also seen a 91% reduction in NOx emissions. This is no small feat due to its large population density and proximity to major New York highways and one of the nation's busiest airports.

The overall reliability of the heating systems has been significantly improved through diversification and redundancy created by the modular plant design, and the new Benchmark plants will help reduce future maintenance costs due to better monitoring via the SCADA system and onAER Predictive Maintenance.

Additionally, with the decentralized Benchmark plants, Spring Creek Towers increased their water conservation because water had been leaking into the ground from aged piping in the system that had been built in the 1950's. By decentralizing the system, Spring Creek Towers no longer has to worry about wasting a large amount of water via leaky/damaged pipes and avoids additional costs by not having to chemically treat the make-up water (which is better for the environment as chemicals will no longer leach into the ground).

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