

MUNICIPAL WASTEWATER TREATMENT PLANT

POWER SOLUTIONS
CASE STUDY of the
**ARIZONA CITY
SANITARY DISTRICT**

UNITS

800 kW Modular Power
System (2 x 400 kW Diesel
Gensets in Parallel)

LOCATION

Arizona City, Arizona



MPS — THE BEST N + 1 SOLUTION

Purifying wastewater and keeping it flowing is not a very glamorous or exciting process, but it is essential for municipalities everywhere. Because of environmental concerns and the rules of the EPA (Environmental Protection Agency), wastewater authorities are charged with collecting, conveying, and treating large volumes of sewage, then releasing the processed water back into the environment. In many places, the treated effluent is routinely discharged into streams, rivers, lakes, or the ocean.

But not everywhere. In Arizona's hot and arid desert, water is a precious and rare resource. Even the wastewater produced by municipalities is valuable in its own way, because it can be processed and reused for irrigation.

The Arizona City Sanitary District is in central Arizona, about fifty miles south of Phoenix. Its newly expanded wastewater treatment plant is at the business end of eighty-five miles of collection mains. The sanitary district serves Arizona City's population of almost 5,000 residents, with approximately 2,600 residential

and commercial customers connected to its system.

"The expansion was a major upgrade in our capabilities," says Gary Boileau, plant superintendent. "As this area continues to grow and more homes are added to our system, we will be able to handle higher volumes. Currently, we are processing about 600,000 gallons per day. With the three sequential batch reactors now in place, our capacity has been increased to about 1.5 million gallons a day."

The wastewater is processed through the plant relatively quickly, and the treated effluent is used for irrigation nearby. "Most of the water is piped to the municipal golf course," Boileau says, "and we're supplying them every day. The remainder is used for crop irrigation just outside of town."

To ensure that operations continue in the event of a power outage, a Generac

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High capacity water pumps require considerable amounts of power.



Modular Power System (MPS) is standing by. Its two 400 kW diesel gensets provide up to 800 kW of backup power, with onboard paralleling technology that allows the output of both generators to be paralleled and combined. The two units also back up each other, providing full $n + 1$ redundancy to ensure that the plant will have adequate electricity in the event of a utility outage.

“The electricians say that one generator running at 80% load will operate the entire plant,” Boileau notes. “This gives us double coverage.” This built-in advantage of the Modular Power System is perfect for end users with mission critical applications, who can select the number of gensets to match the level of redundancy ($n + 1$, $n + 2$, $n + 3$, etc.) they require.

The system was sold by Arizona Generator Tech, one of Generac’s premier dealers in the Southwest, and installed in September of 2003. “We’ve provided Generac equipment to quite a few wastewater plants, including this MPS installation,” says Don Leher, Arizona Gen Tech’s sales manager. “We’ve also equipped dozens of lift stations with backup power over the years. Generac gensets are a popular and cost effective choice for these kinds of applications.”

GENERAC®

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