

Case story | TSG

TSG chooses only **Danfoss pumps and drives** - because **operating margins matter**

HIGH

efficiency and product reliability ensure the lowest possible life-cycle costs.

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TSG has extensive experience in all aspects of water and wastewater treatment – from designing and building new plants to upgrading existing plants. But it is its deep expertise in plant operation and maintenance that gives the Florida firm its competitive edge.

Operation and maintenance contracts with operators in six countries around the Caribbean make up more than half of the company's sales. That's why TSG is intensely focused on predictable component reliability and efficiency – and has made Danfoss the go-to solution for all high-pressure pumps and variable frequency drives.

The challenge: Take full responsibility for operation and maintenance of Sea Water Reverse Osmosis (SWRO) plants in harsh environments for 15-20 years – and make money doing it

TSG relies on recurring revenue streams from operation and maintenance contracts for the bulk of its business. Margins are thin, the contracts are long-term, locations are remote – and the range of issues that can erode project profitability is daunting.

However, TSG is a specialist in coastal and island installations. The company's principals have decades of experience with the highly corrosive conditions and uneven-but-expensive energy supplies that characterize the Caribbean. And they have shaped their business accordingly.

According to Chip Harris, vice president and general manager, "We're relentless in pursuing the lowest possible lifecycle costs, and we always take the long view in balancing capital versus operational costs. Power is extremely expensive in most of the markets we serve, and because plant locations are so remote, simple maintenance routines are a must. When you take full responsibility for a plant's operations over the course of 20 years – and that means *everything* except supplying electricity – total cost of ownership considerations are simply baked into everything you do."

The solution: Dedication to best-quality design and components – including the winning combination of Danfoss APP high pressure pumps and Danfoss AQUA VFDs

TSG's design philosophy is a direct result of its business model: They engineer plants of the highest quality and energy efficiency possible. Their commitment to QA (quality assurance) and QC (quality control) is unrelenting. Their designs must not only be more robust than their competitors' – they must also save more energy.

"I guess I'm a little old school when it comes to quality," explains Harris. "I've just spent too much time in the field to put up with quality-cost compromises that don't make sense. And in contracts where energy costs mean more to your bottom line than capital costs over a plant's lifetime, going for anything but the best can mean the difference between profit and loss. That's why Danfoss APP pumps and VFDs have been standard components for several years now."



APP pump family

The results: With Danfoss as the default solution, TSG is growing its business –profitably

Over the last two years TSG has built and operated six new SWRO plants with Danfoss APP pumps and VFDs, ranging from 20,000 to 250,000 GPD permeate flow. Field failures? Zero.

"Danfoss APP pumps have just got bigger and better," says Harris. "They have so many advantages over reciprocating positive displacement pumps – not least robustness, design and maintenance simplicity, and energy efficiency – that they are our pump of choice. We're particularly happy to see the range grow in capacity, as this means we can include them in larger designs."

"In the same way, Danfoss AQUA VFDs are simply exceptional. We use them for both high- and low-pressure pumps in our desalination facilities, and for air blower systems and EQ pumps in our wastewater facilities. They're robustly reliable, and this is key in our region where brownouts are almost as common as voltage and frequency variations."

"That we can get both of these key components from the same supplier is only an advantage. When we need service, which is rare, responsiveness is excellent. For us, Danfoss is in the "solution" column – not the "problem" column."



Danfoss VLT AQUA Drive NEMA 4X / IP 66

About TSG

Based in Gainesville, Florida, TSG is a water and wastewater treatment plant specialist with extensive experience in meeting the challenges of coastal and island environments. Operating in seven countries throughout the Caribbean, TSG builds turnkey plants, upgrades existing plants, and operates and maintains a wide variety of plants through its full-responsibility programs.

Learn more at <http://www.tsgwater.com/>

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