

Saline Water Conversion Gains Efficiency with Infor10 EAM




Setting the strategy.

The innovations that Saline Water Conversion Corporation (SWCC) has pioneered since the Saudi government funded its first desalination projects in 1928 have powerful worldwide implications. The extensive desalination experience SWCC has accumulated, along with the research it conducts through its Saline Water Desalination Research Institute (SWDRI), has driven continuous improvements in the science and worldwide practice of desalination, including methods for desalinating seawater more economically, rapidly, and at greater levels of purity.

Desalination spans various techniques, ranging from traditional multi-effect distillation (MED) plants, to complex multistage flash systems (MFS), to even more sophisticated reverse osmosis (RO) systems. SWCC employs all of these technologies, while simultaneously generating electricity for maximum energy efficiency.

The cost and efficiency of large-scale desalination depends heavily on well-maintained equipment. Research conducted by SWCC shows that even after several decades of operation, well-maintained desalination machinery can operate just as efficiently as newer equipment—or even more so. But the absence of a well-managed maintenance program can lower desalination performance due to declining rates of heat transfer and from mineral deposits that scale and foul the system. An effective enterprise asset management (EAM) program can lower costs and contribute directly to improved desalination performance by optimizing and reinforcing consistent maintenance practices.

To improve the management of its plant and equipment, SWCC developed an in-house asset management system. As the scope and size of the organization increased, SWCC found that a home-made solution would no longer suffice. Many drawbacks with the existing system—functionally and technically—were due to its age of 20 years, which also resulted in rising support costs. There was no effective equipment history for the assets, and estimating accuracy was poor. Furthermore, there was no way of integrating budget management into the system, and no way of carrying out predictive maintenance. And the system required a huge amount of paper work.

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—ADEL ALSUBHI, EAM PROJECT MANAGER

About the company.

In Saudi Arabia, where oil abounds but water is scarce, life itself depends on the nation's ability to reliably create its own fresh water supply. Largescale seawater desalination is indispensable. As a result, the nation's government-owned Saline Water Conversion Corporation is the world's top producer of desalinated water, producing 27% of the world's desalinated water from an assortment of 30 plants, 14 transmission systems, and 4,170 kilometers of pipeline. Located in Al-Jubail, Saudi Arabia, SWCC every day supplies 3.5 million cubic meters of fresh water to residents of the Kingdom, along with 5,000 megawatts of electricity. To learn more, visit www.swcc.gov.sa/.

Getting business specific.

Under the unlimited support of SWCC's governor Fehaid Al-Sharief, who guided SWCC's plants to implement the best global practices in maintenance and operation, SWCC realized the importance of the Electronic Transformation Program (e-TP).

e-TP Director Eng. Abdullah Alkheder started by forming teams to apply BPR methodology and prepare the organization to implement an EAM program. The e-TP director suggested that SWCC make EAM an integral component of a comprehensive operational and financial management system. The in-house solution lacked the capacity to interoperate with state-of-the-art business systems and support optimal overall performance. "So we sat down with our maintenance managers from the various plants (at Khobar, Jeddah, and Shuqaiq) to work out what they wanted from the new system," says Adel Alsubhi, SWCC's EAM project manager. "We also knew we needed automated procedures, real-time evaluation, management decision support, and self-improvement—in effect, a new maintenance system that allowed access from anywhere at any time, at a low total cost of ownership."

After conducting a business requirement session and a thorough solution survey analysis, the EAM project team recognized and selected the most highly regarded EAM solutions available and selected Infor10™ EAM as the most effective application for the task. "Infor was simply the best choice for us," says Alsubhi. "It was the right fit in terms of size and experience in the utilities sector; the cost of implementation was low; and crucially, the local support was available."

Facts at a glance

Product

Infor10 EAM

Industry

Energy

Country

Saudi Arabia

Seeing results.

Integrating more than 135,000 pieces of equipment and training 300 users required an ambitious implementation schedule. The SWCC staff worked long hours and completed the task in only three months in the initial rollout at its Khobar plant, marking the fastest and largest implementation of Infor10 EAM in the Middle East. They immediately went on to complete similar implementations at the Jeddah and Shuqaiq plants.

Software migration often presents challenges, particularly when converting data from proprietary, in-house systems. Converting data into usable form for the target system is a critical and time-consuming phase of the task. The six-member EAM project management staff at SWCC overcame the challenge successfully with assistance from Infor experts. "I think one of the implementation problems was the data," says Alsubhi. "If the data is not ready to migrate to the new system, then the system won't work. In this case, we spent a lot of time revising and uploading the data, and then Infor provided us with reports that helped us correct any errors that might have been made."

“Another issue we had was convincing some of our engineers and foremen—who might find it difficult to accept change—that there are benefits to using such a technical system. Now, however, if the system is interrupted for any reason, you will find that they are the first to complain.”

The successful implementation at the first three SWCC locations led Alsubhi and his team to roll out Infor10 EAM throughout the other 27 plants that they manage. They also plan to apply Infor10 EAM to their network of pipelines. “With Infor10 EAM, we can now manage the long-term maintenance of all of our assets—including turbines, our huge boilers, and other large pieces of equipment,” says Alsubhi.

Doing business better.

By leveraging Infor10 EAM to support more effective maintenance, integrate with other management systems, and analyze desalination performance history, SWCC positions itself for a future of continuous process improvement. Those improvements will undoubtedly yield countless future benefits to people in waterscarce regions around the world. Alsubhi adds, “In the future, we plan to integrate EAM with our other solutions, such as the Oracle finance product, which will give the end user powerful and relevant information at the touch of a button.”

About Infor.

Infor is a leading provider of business software and services, helping more than 70,000 customers in 164 countries improve operations and drive growth. To learn more about Infor, please visit www.infor.com.

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