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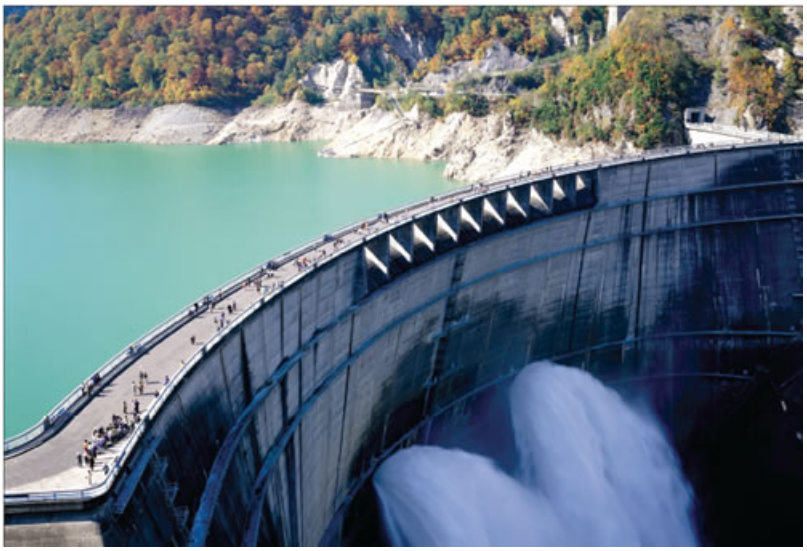

Southern Nevada Water System (SNWS), a department of the Southern Nevada Water Authority, currently has 12 technicians running PDAs (Personal Data Assistants) with maintenance scheduling and management software. What's especially interesting about this situation is the fact that the organization expects to save about $50,000 a year in improved maintenance work order processing and reduced administration because of it.

The problem

SNWS manages two treatment plants with a combined capacity of 900 million gallons of water per day, 28 reservoirs, two ozone treatment facilities and 14 tanks with more than 150 million gallons of combined storage capacity. Thirty pumping stations distribute this water across 163 miles of pipeline.

"Maintaining a system of this magnitude is an enormous undertaking, requiring mechanical skill, system performance monitoring, information analysis and efficient resource deployment. Efficient planning and scheduling is the key," notes Jeffrey Deitch, business systems analyst with the Technology and Special Projects Division of SNWS.

The solution

SNWS took its first step toward automated maintenance planning and scheduling in 2000 with the installation of Avantis.PRO enterprise asset management software from Invensys. The Avantis.PRO software provides comprehensive functionality for maintenance management including automated work order, entity and inventory management. This resulted in significant streamlining of operations in management and administrative offices; however, once the technicians left the building, they were still working with paper.

When Deitch learned that Invensys had created an Avantis advanced planning and scheduling client that ran on a PDA, he seized the opportunity to leave the cost, inaccuracy and time-consuming aspects of paper processing behind him. ”Our primary objective was to reduce paperwork. Less paperwork means more wrench time for the technicians and that means more availability of equipment and better service to the Authority. Also, less paperwork in the back office frees administrative staff to perform other value-added activities to improve the efficiency of our operation,” says Deitch.

Deitch’s handheld solution involves a single planner/scheduler who coordinates use of Avantis VIP Advanced Scheduling software on HP IPAQ handheld computers. The software helps the planner/scheduler ensure that all people, tools, assets, parts and other resources needed for a maintenance project are lined up and available to the technician.A calendar wizard, for example, helps him schedule the maintenance and measures schedule compliance. It enables better employee work utilization and facilitates changes in plans and schedules.

With the new system, instead of receiving a paper stack of work orders for the day, technicians receive a PDA, which the planner/scheduler has docked to the network and loaded their work assignments for the day. At the end of their shift they hand in the PDAs, which are synched again to Avantis.PRO. The planner can then see exactly what got done the day before, what work is still outstanding, and what emergency or brake schedule work came in during the day. He then uses the VIP tools to coordinate sick call-ins or any other schedule changes that need to be made, reconcile it with new work orders that came in, and have updated PDAs ready for the crew when they report to work the next morning.

According to Deitch, there are side benefits in addition to eliminating paper shuffling. “You avoid problems related to lost or inaccurately competed forms,” he explains. “You save

cost of producing filing and sorting work orders, and you have better tracking of employee performance and equipment status."

"I might hand a technician a month's worth of preventative maintenance work orders," Dietch continues, "which could include hundreds or even thousands of tasks, hundreds of work orders, hundreds of pieces of paper. He might just bite away at this load day to day and at the end of the month come back with a stack of paper and say everything is done. That's not a bad way to operate if you are not concerned with tracking his progress, but if you want more timely input on his performance or on the status of your equipment, you need input more often than every 30 days."

Through the display, Dietch can see daily or weekly availability of his entire crew in a single Gantt style chart. Color coding tells him where they are, what work has been started and what has been completed. It is accurate up to the preceding day. "Getting that kind of information," he says, "would otherwise require a tremendous administrative effort, which would take away from wrench time. The software also helps make better use of the new time the crew has available."

As an example, Dietch points to a typical work order to rebuild a motor. This type of work order would enumerate a number of steps and require logging of how much time each step took. The electronic system not only provides an easy way to log progress in that job, it also provides a very effective checklist that ensures that each step was completed correctly and in the proper sequence.

The payback

Running Avantis VIP advanced planning and scheduling software on PDAs has proven to be a multipart solution for SNWS. It helps to plan and schedule field maintenance, communicate schedules to the technicians on a timely basis and get accurate and timely records back into the enterprise system. In the first year of operation, the SNWS is expecting to save about $17,000 in work order processing and $33,000 in reduced administrative costs. **MT**

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