



Overview

Country or Region: Salt Lake City, Utah

Industry: WasteWater Treatment

Business Situation

For years, Central Valley used the PI System as the company's real-time and historical data engine. However, when a decision was made to switch to a competing system with promises that it would perform the same and be less expensive, the outcome had many negative results and the new system failed to deliver.

Solution

The data historian system that Central Valley switched to from the PI System was buggy, unreliable, and simply did not perform. The company quickly returned to OSIsoft and the PI System, which provided high scalability, connectivity, data integrity, and the ability to deliver reliable data to the desktop in real-time. The cost of upgrading the PI System to stay on current technology was much less expensive with almost no disruption than originally perceived. OSIsoft won because the PI System originally set such a high performance standard that the company now expects, and maybe even takes for granted.

Benefits

- Reliable, industrial real-time information Platform
- Easy, seamless upgrade from VAX to Microsoft Windows
- State and federal data storage requirements met
- Easy-to-configure reporting capabilities

Central Valley returns to OSIsoft's PI System after the competition fails to deliver



"We learned a valuable lesson. When it comes to software, use a product that's tried and true. You'll save in the long run. Even if you pay more up front, over time you save frustration, money and time. When I install software that plays a vital function in my organization, I expect the vendor's technical support department to take my problems very seriously. With OSIsoft, that's what we get."

Tyran Ormond, Network Administrator, Central Valley Water Reclamation Facility

Central Valley Water Reclamation Facility has used OSIsoft's PI System™ (PI) since 1991 to store the process control data online and manage operations. In early 2000, the company installed a new control and monitoring system in order to migrate from VMS-based technology to Windows. The sales representative for the new system encouraged Central Valley to switch from the PI2 System, running on VAX, to this competitors historical data server. The plan was to merge a decade's worth of PI data into the vendor's recently released historical data server.

Rather than upgrade to a Windows-based PI3 server, Central Valley made the decision to install the vendor's control system. However, they soon realized that the vendor's historical data server and viewing tools paled in comparison to OSIsoft's enterprise solution. After much frustration and wasted time and money, Central Valley made the decision to decommission the new system and reinstall the PI System from OSIsoft, upgrading this time from PI2 to PI3. The initiative proved successful; Central Valley now has a reliable, long-term infrastructure for real-time performance management throughout the operation.

The Central Valley Water Reclamation Facility

The Central Valley Water Reclamation Facility (Central Valley) in Salt Lake City, Utah, is a state-of-the-art wastewater treatment plant that processes an average of 60 million gallons of wastewater per day. Central Valley is one of three treatment plants in the Salt Lake City region and serves the entire central part of the Salt Lake City valley, which includes over 450,000 residents. Central Valley is the largest wastewater facility in the state and is customarily on the technical and environmental leading edge.

Central Valley uses a trickling filter solids contact process. Anaerobic egg-shaped digesters treat the solids, which are later applied to land around the Salt Lake area as class A and class B biosolids. Class A biosolids can be used for any purpose, while class B is limited to farmland applications. Some of the biosolids are composted with green waste from the valley, and the finished product is offered as compost to local residents. The treated water is cleaned and used on local golf courses and other landscape projects.



The history of OSIsoft at Central Valley

Central Valley became an OSIsoft customer in 1991, when they first purchased a PI 2 server, running on VMS, to collect, store and report process data from their control system. The PI System was used to satisfy state and federal mandates for both storage and reporting. Data for wastewater treatment plants must be kept for seven years and is used to generate the required regulatory reports. All of Central Valley's reporting was produced using OSIsoft's Excel-based client, DataLink, and the data from PI. In addition, all lab data was stored in the PI System, which made it easily accessible for other reporting purposes.

The engineering staff also used real-time and historical data from the PI System for plant performance monitoring and tuning. For example, although the plant is symmetrically designed, there are differences in performance between the west and east sides. Engineers are constantly analyzing trend data supplied by PI to fine-tune the system so that both sides perform similarly. The data from PI is vital to this analysis. The PI2 server and OSIsoft client tools provided ten years of trouble-free service in support of these initiatives.

Central Valley implements a competitor's historian with promises that it will "perform just like PI"

In early 2000, a management committee decided to replace their existing control system in order to go from VMS to Windows. As part of the control system upgrade, the vendor persuaded them to implement a different data management system, including a new historical data server and viewing tools. They were assured that the software was just as good and as reliable as the OSIsoft products they'd been using for over 10 years.

Because they had nearly a decade of viable, critical data stored online in the PI System, the vendor of the new system was required to migrate the PI 2 archives into their historical data server. Following several unsuccessful attempts, the vendor promised that a new solution would be forthcoming and the project moved forward. Central Valley management was assured yet again that the new system would work just as well as OSIsoft's product.

The vendor stated on numerous occasions that Central Valley no longer needed the PI server, claiming that the new system would integrate all of its functionality into their control system. However, management realized they needed to keep the PI System in the IT architecture to assure that data would be gathered from those parts of the plant that had not been switched over to the new system.

When the promised system was finally installed, it functioned unreliably, with many glitches. Several data integrity and routine reporting issues surfaced immediately. While Central Valley technical staff expended countless hours in workarounds, it became apparent that the vendor could not integrate the new plant data with archived PI data. In addition, a number of other problems quickly became obvious. Several bugs were encountered in the data storage and reporting tools, and many resources were required just to get the new system to perform basic operations. For example:

- Time stamps of 12/31/69 were randomly inserted even though the system was installed in 2001
- Instant changes in equipment power output recorded as occurring over time
- The reporting tool for date range selection failed to work as per documentation
- Reports required much more time and effort to complete
- One IT employee had to work full time on work-around solutions
- Vendor technical support stated that most bugs and shortcomings were considered "non-issues"
- Management knew Central Valley needed a more reliable solution that could accurately store data and required minimum support. An "out-of-the-box" system would be ideal. The answer, they finally realized, was in renewing their long-term commitment with OSIsoft and implementing the PI System.

The PI System was reborn, quickly and painlessly

Management made the decision to confine the new vendor's system to process control functions only, performing no historian capabilities. The PI 2 server was to be upgraded to PI 3 for all historical trending, analysis, reporting and real-time viewing. This shift in infrastructure proved to be overwhelmingly successful.

Central Valley was elated to discover that the upgrade from PI 2 to PI 3 would be nowhere near the financial and technical pain they initially envisioned. Reed Fisher, general manager says, "When the OSIsoft sales representative called, she informed us of the cost and effort required to make the conversion to PI 3. Before this, we were under the mistaken impression that upgrade costs would be prohibitive to Central Valley. She not only gave us a viable option, but also put us in contact with a local integrator. We are very appreciative of her efforts." The local integrator, JDK Information Systems, Inc. explained that converting the data and configuring an OSIsoft interface to the new control system could be done quickly and economically. Upon completion, the PI upgrade solution proved to be more cost-effective and reliable than the solution proposed by the new vendor. In addition, the local integrator proposed and completed a PI training program geared specifically to the needs of operations personnel.

The initial goals of the upgrade were to ensure that the new PI 3 solution maintained the accuracy and reliability of the PI 2 System, and to ensure it could quickly and easily interface to the new control system. Regulatory and engineering reports had to be easily produced, just as they were in the past. These goals were successfully accomplished at the conclusion of the upgrade process. The following PI System modules were installed or utilized:

- PI3 data server
- Control System Interface
- Text file interface for lab data integration
- ProcessBook
- DataLink
- OSIsoft Data Access Suite

The Central Valley IT staff supervised all aspects of the installation and conversion process. Much credit for the successful outcome also goes to local integrator, Jay White, from JDK Information Systems, Inc. Working closely with the conversion team at OSIsoft, JDK worked through several conversion issues that were unique to the Central Valley situation. In partnership with the plant IT staff, all of the initial goals for the PI System upgrade were met in a short period of time.

Timetable for the PI System Upgrade

- Day(s)
- Installation and configuration of Server (1.5)

Installation and configuration of Interfaces (.5)
Data conversion setup (2.0)
Data conversion from PI2 to PI3 (3.0)
(one computer, minimal staff time, seamless)
Installation of client applications (.5)
Administration and Client Application Training (2.0)
Total days to upgrade 9.5

The PI System is well worth the investment

According to IT Director, Kelly Kimber, "We'd been worried about what it would take to upgrade the PI System to the new system with PI 3, both in terms of time and money. But we quickly realized that our fears were unfounded. The upgrade went better and quicker than we had envisioned. Clearly, OSIsoft builds products that are meant to be upgraded quickly and easily and their products work. We're really happy to be back with OSIsoft and to have the PI System helping us manage our operations data and performance. We intend to continue working with them to make our implementation even better. They offer so many strategic tools that we're just now starting to take advantage of."

The PI System accomplishes the mission and helps Central Valley plan for the future

The positive results of Central Valley's recommitment to the OSIsoft Platform and PI 3 System were immediately apparent:

- Staff has full confidence in data integrity
- Support time was drastically reduced
- Reporting is easier

Facility has reliable, trouble-free operation
According to Kelly Kimber, "The Central Valley management team is pleased with the results of the PI 2 to PI 3 conversion and is now exploring many previously unknown attributes. Clearly, we're not taking advantage of many benefits the Platform offers in the collection, analysis and presentation of the data. There's a lot more we want to be doing with the PI System."

Initiatives under consideration include:

- Making process data available off-site to selected plant personnel
- Providing remote lab services to other Utah entities
- Increasing the depth and span of process data distribution within the facility
- Improving plant performance monitoring and management
- Streamlining state and federal reporting
- Enhancing the ability to trend process and equipment performance

The PI System is a solution that works — all the time, every time

The people at Central Valley were impressed with OSIsoft's commitment to providing reliable, easy-to-use, easy-to-install software that works flawlessly right out of the box. To keep the PI System up to date, Central Valley subscribes to the Software Reliance Program where incremental upgrades are downloaded on a continuous basis and technical support engineers are available any time a problem might arise.

Reed Fisher, Central Valley's General Manager says, "The only regret I have is that we weren't taking full advantage of what OSIsoft's PI System has to offer. Now, that goal is always in the forefront as we move toward future enhancements in plant operations."