CUSTOMER PRESENTATION BRIEF
As presented at the 2015 Users Conference

OSIsoft.

SUMMARY

Colorado Springs Utilities®

Industry

Energy and Water Utility

Business Value

- Data Democratization
- Enterprise Visibility
- Cost Reductions
- Corporate Reporting
- Regulatory Compliance

PI System™ Components

- PI Server™
  - Data Archive
  - Asset Framework (AF)
  - Notifications
- High Availability (HA)
- PI Interface for Relational Database (RDBMS)
- PI Interface for OPC
- PI Vision™
- PI DataLink™
- PI ProcessBook™

Colorado Springs Utilities streamlines operations with centralized PI System data

One of the nation's largest four-service utility providers, Colorado Springs Utilities supplies energy and water to over 450,000 people. The state-certified laboratory of the Water Quality Assurance section processes over 14,000 samples and 80,000 analytes per year from eight watersheds, seven finished water treatment facilities, 38 finished water reservoirs, four post-chlorination stations, two wastewater treatment facilities, and over 2700 miles of pipeline. Along with Jeannette Ortiz, David Mora, Environmental Scientist Lead of Water Quality Assurance explained to the 2015 OSIsoft Users Conference how Water Quality Assurance has rolled out a PI System data infrastructure to increase data accessibility and decrease operational costs and reporting times.

Multiple enterprise interfaces pose operational challenges

Mora opened the talk by describing his company's operational challenge of "multiple enterprise interfaces." Before implementing a centralized solution, Mora and his team were "really dependent upon our SCADA operators… We would actually call our operators to find out what's going on with our system, asking them what the current residuals are, what the tank levels are… And you are hoping that the operator on the other end is giving you the right number… because you are actually making operational change based on the information."

Pulling data from multiple interfaces also meant it could take as long as three weeks for Water Quality Assurance to collect data and prepare a report for customers. As Mora explained, "It's almost like checking your checkbook three weeks later. You are not going to be successful if you are doing that. That was one of the complaints from our customers that [they] need the data to make these process control changes, [they] need the data now."

Implementing a centralized data platform

To improve data accessibility, Mora and the Water Quality Assurance team began a small trial of the PI System "looking at 220 monthly data points" from a "bacteriological sampling site." According to Mora, "that worked great, and the next step was… post-chlorination stations and water quality monitoring stations… Once that was successful, we moved onto process control and compliance sampling… Next we moved on to watershed and source water management."

Mora said, to build trust, they chose to "start on smaller or easier processes and then convert to the more complex, time-consuming ones." Today, Colorado Springs Utilities has successfully centralized its water data systems onto a PI Server. Ortiz explained that "17 interfaces feed into our Water PI Server. These are remote interfaces, typically OPC… and we also use RDBMS interfaces to pull and push data into Oracle… We have 12 interfaces that feed from SCADA directly into our PI Collective."

The benefits of centralized data

The shift from multiple interfaces to a centralized data platform has led to a "58% reduction in overtime," "30% reduction in vehicle usage," and "10% reduction in effluent chlorine costs." In addition, Mora said that the 3-week reporting time has decreased and "15 minutes after authorization, our operators, our customers are getting our data."

These operational improvements have enabled Mora to better allocate his resources and further improve operational systems. "Prior to the PI implementation, we only had six operating systems. When I say operating, they were powered up, that as close as we would get. We had the confidence that they are about 50/50, and 50/50 doesn't cut it in water quality. Since then, we have installed all new instrumentation… We will have 18 operating units by the end of the year. Operating meaning they are calibrated to 99%. This is the pulse of our distribution system, and this is realized because we saved that money in our resource allocation and reallocated it to a cause that would really help us fine tune our system."

"I can see what is happening with my infrastructure 936 miles away from my hometown."

David Mora
Water Quality Assurance Lead
Colorado Springs Utilities

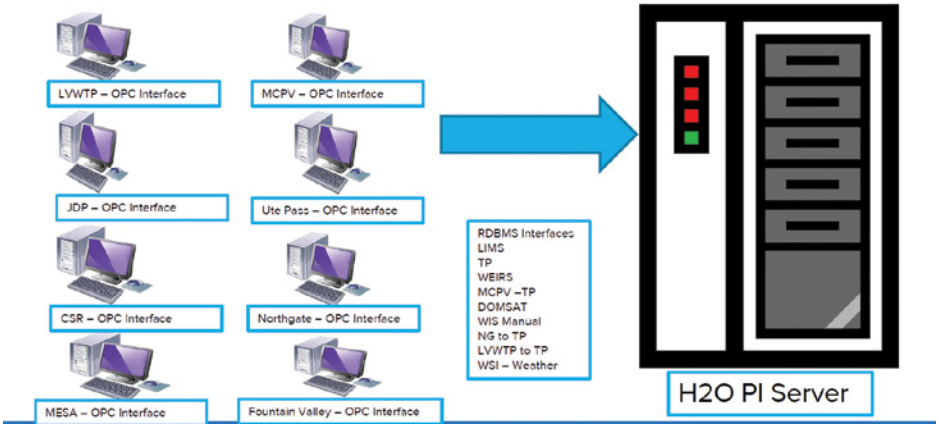

Figure 1. Colorado Springs Utilities Water PI Server with 17 Interfaces

Future data plans for Colorado Springs Utilities

Recently, Mora and his team added PI Coresight[1] as a real-time data tool. Mora believes PI Coresight "is really going to change how we do business. In the past, you had to have [PI] ProcessBook in your computer. You had to have [PI] DataLink on there to pull any of this data. Now, it is actually available anywhere… I can see what is happening with my infrastructure 936 miles away from my hometown."

Next, Colorado Springs Utilities plans to increase use of Notifications and incorporate the PI Integrator for Esri ArcGIS. Mora said, "We want improved process control sampling and compliance sampling, we want to expand the data sharing side. To be able to provide that integration into the ArcGIS is going to be huge. Now we are going to be able to get our spatial analytics with all of the data and put it together. That's going to be powerful for us as we move forward."

[1] PI Coresight was renamed to PI Vision in 2017

Ortiz, Jeannette and David Mora. *Improving Business Processes through Operational Intelligence in the Water Industry.* OSIsoft.com. Oct. 2015. Web. 02 December 2015. <http://www.osisoft.com/Templates/item-abstract.aspx?id=12421>.