



MAKING PLANTS SMARTER AND SAFER

INCINERATOR AND FUEL OIL COST MONITORING with DAILY REPORTING using FALCONEER™ IV Energy Saving Process Performance Solution

THE BUSINESS OPPORTUNITY

A current customer manages five waste water treatment plants in Western New York. All plants interface with SAP ERP systems for business information management. All plants have SCADA, LIMS/OPS32, CMMS, and AB PLC systems to collect process data, perform closed-loop control, and provide a “dumb” operator interface. All the systems are not able to easily and cost effectively share information, which must be done manually at a cost of time and resources. Effective information sharing and management unlocks the complete business value and ultimately provides the ROI intended from these systems.

FALCONEER is successfully installed and operating on the waste treatment trains for the new Solids Retention Time (SRT) system at the Advanced Wastewater Treatment Facility (AWTF). FALCONEER™ IV is already helping in several ways. It enhances the reliability of the on-line instrumentation associated with the SRT system - the flow meters, the DO meters and the TSS analyzers. FALCONEER™ IV helps identify operational and instrumentation issue root causes through sensor validation, abnormal condition auditing and process optimization analyses. FALCONEER™ IV ability for daily and automated advisory communications via email, reports, charts and real-time dashboard helps alert management sooner of operational issues and opportunities. Our solution can and is being used for auditing and advising in real-time on Key Performance Indicators (KPIs) and soft sensors, such as Target SRT, leak detection, RAS recycle flow and UNOX vent flows. FALCONEER™'s ability to provide a daily analysis of this system's parameters and KPIs will help the plant optimize and maintain operations in this system – a virtual risk management or insurance system in essence.

FALCONEER has had extensive discussions operations/planning management. FALCONEER™ IV software can also provide cost savings associated with the fuel oil usage at the AWTF. The costs for fuel oil at the facility (primarily used for the onsite incinerators) were several thousands of dollars over budget for the 2006 fiscal year and likely double that in 2008 with the increasing price of fuel oil. Although there are some suspected causes, there is no data that would allow them to pinpoint the exact reasons. Use of FALCONEER™ IV may help to identify the root causes through sensor validation, process optimization analyses, and more importantly would potentially have alerted management sooner of potential overages. In this case, our system can be used for auditing and advising in real-time on Key Performance Indicators (KPIs), such as

- 1) Incinerator fuel oil use and costs versus budget and operational parameters



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- 2) Incinerator sludge rates (not measured) from air feed and fuel content on sludge to determine if they are approaching permit limits
- 3) Environmental Emissions sensor validation and monitoring on their incinerator

Therefore, we propose to expand FALCONEER to cover the Sludge Processing System. The Sludge Processing system includes thickening, pressing and incineration. The fuel oil use by the incinerators, roughly 500 gallons per day, is one of the plant's high operating costs. If the annual budget was around \$500K in 2006, then it has likely increased to around \$750K with current prices, assuming little if any optimization or improved real-time monitoring has been accomplished. FALCONEER™'s ability to provide a daily analysis of this system's parameters and KPIs will help the plant optimize and control these soaring fuel oil costs. A 5% savings will easily provide a payback in less than 3 years on this system alone.

In addition, FALCONEER™IV will be configured to integrate between the SAP system & SCADA system to demonstrate information transfer and management. This capability will demonstrate three key features:

- 1) Allow for KPI and/or other process information to be imported into SAP;
- 2) Allow for SAP internal order, statistical key measures and/or other required information to be exported into FALCONEER™ IV;
- 3) Provide this information in real-time to the PCs of selected key users and decision-makers.

The figure below depicts how FALCONEER™ will interact with the other process information systems. FALCONEER™ will interface with the SCADA system via OPC. For most typical systems, FALCONEER™ will be a client only. No data will be written back to the SCADA system from FALCONEER™. If needed, the performance auditing results can be written back as alerts and calculations, such as key performance indicators or soft sensors.



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Flow Diagram of FALCONEER™ IV Process Information Management Solution

