GE Workflow for Water/Wastewater

Make every operator an expert

Guide operators interactively and orchestrate processes

Solve problems faster

Reduce costs and improve quality

- Ensure operators follow the right work processes
- Coordinate data across systems - know what to do, when
- Enable Corrective Action to improve operations in real time
- Trigger Workflows to act on alarms and prevent additional downtime
- Capture knowledge of expert workers to reduce effects of employee attrition
- Automatically trigger QA based on events or elapsed time
- Record and track work processes and operational data to ease compliance
- Manage both automated and manual processes

Sometimes having too much information is as bad as not having any information at all. In a water or wastewater treatment plant, you need to filter through complex situations and sets of circumstances, managing the data from many sources and understanding what the next steps should be. You can count on your best operators – but they can't handle every situation, every day, every year.

Now, you can make every operator your best operator with GE Workflow. This software enables you to create an environment of information-rich, circumstance-based workflows that operators can follow to best understand what's happening around them and react in a sequenced and procedural manner that is repeatable every single day.

With a Work Process Management system, you have the opportunity to reduce operational costs, improve your water quality and secure your operations.

Guiding Operators Through Tasks and Corrective Action

GE Workflow guides your operators with step-by-step instructions for each task during the day and automatically walks them through corrective action to prevent or fix problems. For exceptions, for example, an alarm from your SCADA System, GE Workflow instructs the operator on exactly how to work through the problem, provides the information that he or she needs and possibly plays a video on how to resolve the issue with a piece of equipment. The software helps the operator to understand the following within approved procedures:

- What are my circumstances?
- How can I fix the situation?
- How can I best affect the quality in a more cost-effective manner?

This combination of technology and a human interface allows operators to better understand the information at hand – and take action.

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Additionally, GE Workflow can connect to many existing databases in water and wastewater treatment plants—both from GE and third parties—using GE SOA (Service Oriented Architecture). This architecture connects to many different databases and pulls information back into video, portal or html-embedded screens. The software prompts operators for manual data entry as needed, and the validated data becomes part of your permanent databases.

Electronic Work Instructions

Electronic Work Instructions /SOPs

Guiding operators through step-by-step instructions, this use case ensures operations comply with defined processes through validated entry. Users can capture both automated and manual data entry. In addition, they can digitize and enforce compliance with policy manuals and Standard Operating Procedures (SOPs). Through this use case, GE Workflow can reduce errors and costs of compliance.
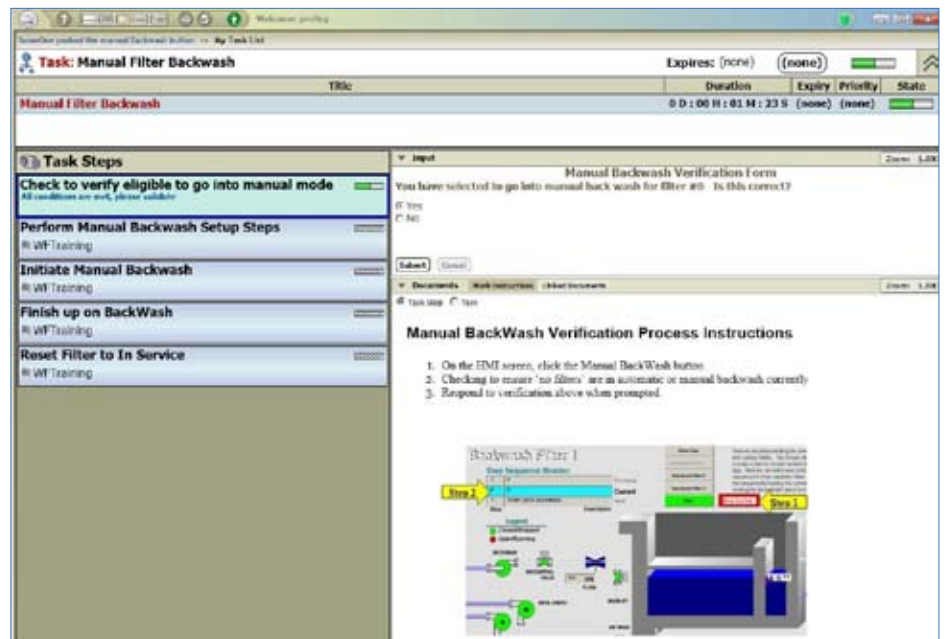
Process Set Up

Operators can walk through the steps for asset maintenance, and treatment plants operators can verify proper chemical dosage. Plants can control set up of batch treatment processes regardless of the level of traditional automation and independent of automation. Teams can record operator input, validate equipment calibrations, and more. GE

Workflow decreases costs of equipment changeover and errors, downtime associated with equipment set up, and inventory through less waste. Plants can increase efficiency and quality through faster and better set up, improve agility for changing operations, and achieve sustainability of processes.

Virtual Trainer

Digitize the expertise of your best operators in a form that all operators can use. With GE Workflow, plants can provide new operators with instructionally sound training and the ability to practice tasks and SOPs before actually operating equipment and using materials. Teams can electronically capture knowledge from expert workers due to retire and embed the expertise in training materials before attrition affects plants.

As an example of Electronic Work Instructions, GE Workflow can guide operators through the process of a manual filter backwash

Quality

Non Conformance

By automatically triggering non-conformance workflows, plants can better manage and take steps to improve regulatory compliance. GE Workflow coordinates the activities of operations and management. The software guides operators through supplemental testing and processing. This use case decreases time and costs associated with manual recordkeeping, processing time by driving fastest resolution, and risk by enforcing non-conformance SOPs.

Water Quality & Lab Sampling

Automating and managing your water quality plan and sampling, enabling more sophisticated, situation-driven sampling, testing and inspection routines are the basis of this use case. Plants can automatically trigger sampling based on events or elapsed time, connect operator work instructions with new tasks and real-time quality data, and distribute sampling tasks across the utility.

GE Workflow can request that operators enter and store information for regulatory or historical use.

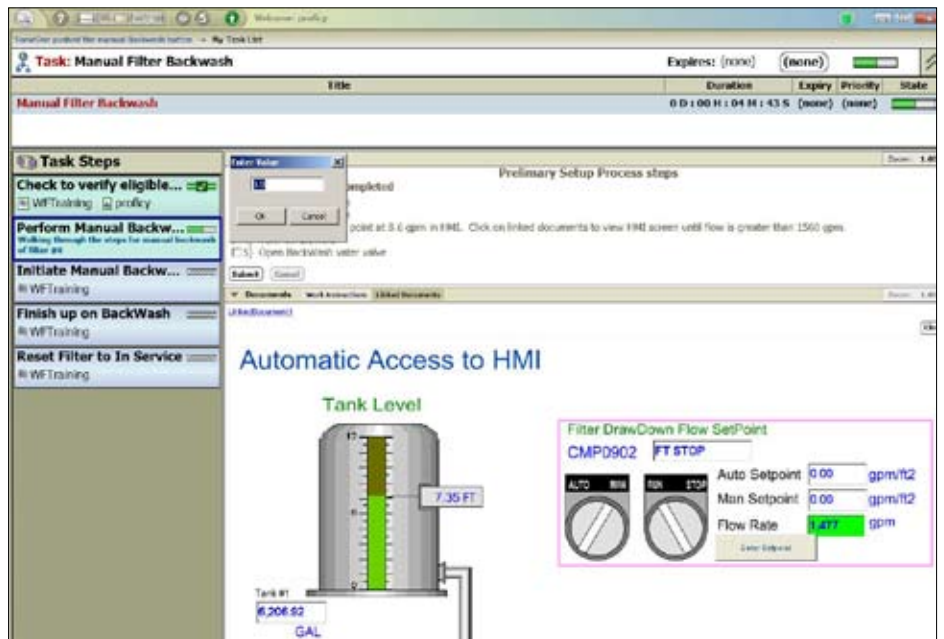## Corrective Action and Exception Management

Alarm Management. Corrective Action and Exception Management

React immediately to alarms and process exceptions with best practice corrective action and exception management. This use case allows treatment plants to automatically and dynamically respond to problems and events, monitoring alarms and out-of-spec conditions from multiple systems. Users can send tasks to people or systems to correct problems in real time and escalate as needed. Plants can minimize nuisance alarms and ensure proper action on critical alarms.

Additionally, users can track water quality data in real time and automatically adjust treatment processes to conform to regulations on an ongoing basis. They can then record exceptions and corrective actions for compliance audits and continuous improvement of processes.
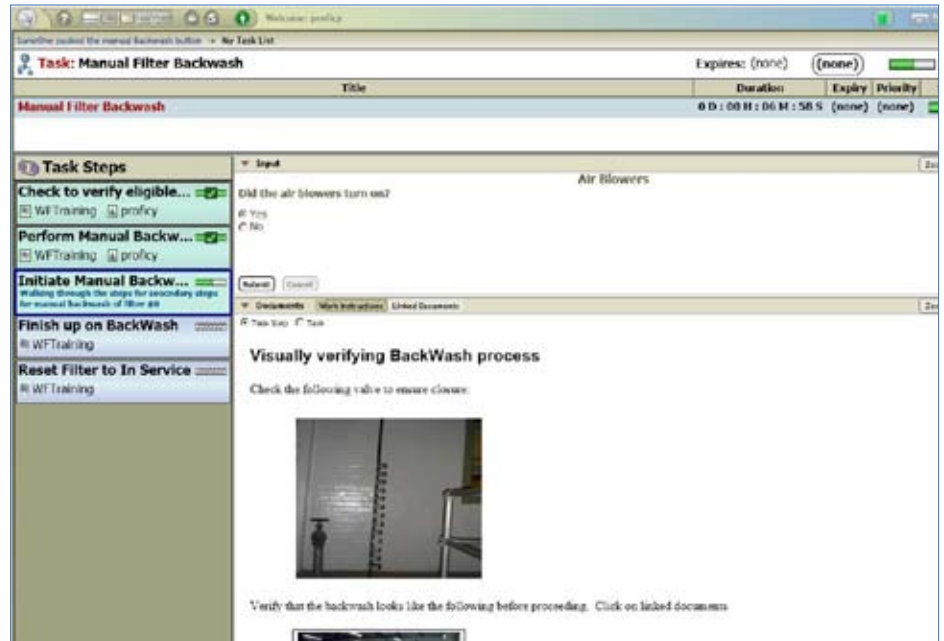
Linked screens allow operators to enter set points into their HMI, such as iFIX, through GE Workflow.

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Troubleshooting Trees

Teams can walk through operations problems to determine root cause and solution, therefore increasing uptime as well as compliance. GE Workflow can make every operator an expert and lower costs by reducing waste and labor, minimize downtime through faster response, and reduce risk through automatic remediation or escalation.

With GE Workflow, you can guide operators with video and step-by-step instructions.

About GE

GE (NYSE: GE) is the world's Digital Industrial Company, transforming industry with software-defined machines and solutions that are connected, responsive and predictive. GE is organized around a global exchange of knowledge, the "GE Store," through which each business shares and accesses the same technology, markets, structure and intellect. Each invention further fuels innovation and application across our industrial sectors. With people, services, technology and scale, GE delivers better outcomes for customers by speaking the language of industry. www.ge.com

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