



Catalyst[®]



BULLETIN – 101

Catalyst[®] Assuring the Safety and Availability of Pike Township Water Supply

The Pike Township Municipal Authority recently installed a RACO[®] Catalyst to monitor various conditions and levels — turbidity, chlorine, PH, flow, reservoirs and tanks — at their Curwensville, PA, water treatment and distribution facility. As a participant of the Partnership for Safe Water program, the township completed the installation as part of an effort to optimize treatment plant performance and provide safe drinking water. Through this membership, the township is encouraged to voluntarily survey treatment processes, operating and maintenance procedures, management oversight practices and the treatment facility itself. Pike Township Municipal Authority realized that they needed to put the appropriate tools into place to assess the filter plant and prevent problems or possible violations before they occur, as well as help bring their facility up-to-date.

Assessing problems with the old system. To assist in accomplishing their goals, Pike Township Municipal Authority looked to replace their alarm notification and monitoring system with a more robust solution. Prior to the installation of the Catalyst system, the facility was limited to 4 monitoring points. That left 12 points unmonitored. In addition, the facility wasn't staffed nights and weekends, so it was therefore not unusual for an engineer to come in on Monday morning and find a problem that occurred the day before.

The inconvenience of the sixteen chart recorders was also an issue. The recorders had to be manually checked and set up, requiring personnel to visit each one on site. Additionally, the engineer who received an alarm notification call had to go to the RTU location, punch in so there was a record of who responded to the alarm, diagnose the problem and then travel to the location where the alarm condition occurred. Overall, the system was not only inconvenient for facility staff, but also inefficient and potentially dangerous. A new system was needed to bring the plant's operational efficiency up-to-speed.

Having used the RACO Chatterbox[®] in the past, the engineers at Pike Township Municipal Authority were familiar with the dependability of RACO products. Chuck Lutes of independent sales and engineering firm Reinbrecht Associates of Hatboro, PA, was contacted to assist with designing a new system. After seeing a demo of RACO's Catalyst, engineers at Pike Township Municipal Authority knew it was exactly what they needed.

What is the Catalyst? The Catalyst is RACO's first integrated, interactive data logging, and alarm notification system, and control system. The Catalyst has 4 standard internal inputs that can be configured to sense digital or analog signals and can monitor up to 256 points to provide extensive data and event logging capabilities. Featuring up to 5 megabytes of onboard memory, the system can monitor data samples, alarms, channel state changes and configuration changes.

The Catalyst is accessible at any time and can be remotely programmed via the integrated keypad, using RACO's proprietary Alarmware[®] software or any standard Touch Tone[®] telephone. Alarmware can also be used to configure the Catalyst, monitor alarms, observe channel values and status, transfer and review log files and perform diagnostic procedures.

A PIN-based security system safeguards all settings and information access. The Catalyst provides up-to-the-minute, two-way communication via telephone, pager, cell phone, e-mail or fax machine.

The Catalyst system configuration at Pike Township.

With the Catalyst installed, Pike Township Municipal Authority's system is a simple one, consisting of a single Catalyst unit mounted on a wall in the control room, adjacent to the Automation Direct-Terminator I/O interface system.

The Catalyst reports on 16 different measurement conditions. Each measurement is directed into both its own analog and digital channel. When an alarm condition occurs, the Catalyst sends out numerous alarm calls. The first call goes to a fax, where a printed report shows all the details of the alarm condition. Reports can provide the status of the following:

- level and temperature indicators
- pumps
- flow meters
- compressors
- switches
- PLCs
- annunciator panels
- SCADA systems
- motors

The fax call is immediately followed by calls to the manager's cell phone, pager and home phone, as well as the operator's pager and home phone. These calls alert staff to the existence and nature of the alarm condition. Pike Township engineers can check status and respond to alarm conditions from their home or any other remote location equipped with a telephone.

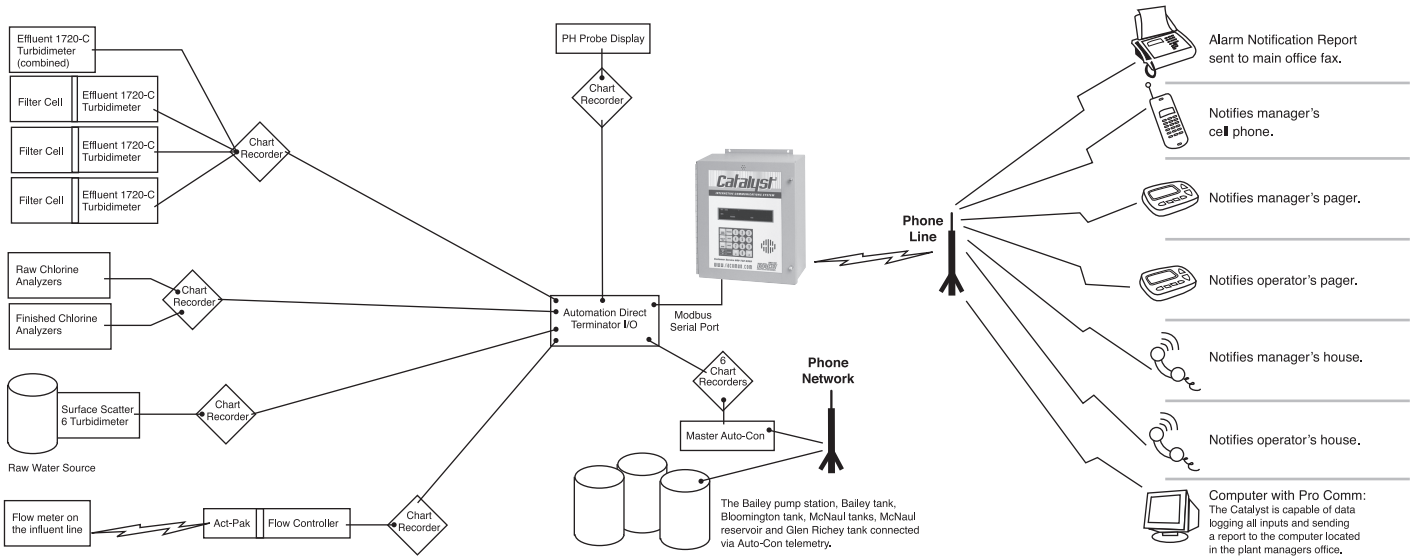
Catalyst for success. The new system has been extremely successful. With the installation of the Catalyst, Pike Township has experienced the following benefits:

- quicker, more efficient engineer response to alarm conditions
- less travel time for engineers since they can now go directly to the problem area, instead of first traveling to the RTU location to get the data
- reduced on-site time put in by the staff
- decreased chance for human error since data collection is easier and engineers no longer have to physically go to the chart recorder to review the information

- easier report generation due to data being sent through Procomm Plus software
- more proactive approach to preventative maintenance, since in-depth data collected by the Catalyst alerts engineers to emerging conditions; engineers are then empowered to respond to those conditions before they become problems

Ultimately, Pike Township's process control has been vastly improved and engineers have the peace of mind that conditions are being monitored 24/7.

Pike Township Municipal Authority's System



All units that require monitoring in Pike Township's system are connected to chart recorders, which send data to the Automation Direct Terminator I/O interface system. The interface system then sends the data to the Catalyst, which makes the appropriate alarm notification calls.



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