In Case of Emergency ...

Centralization and technology have helped one utility trim its emergency response time.

When a customer detects a problem with a natural gas line or meter, utility dispatchers, managers and service workers must react quickly. For the dispatch personnel at Central Hudson Gas & Electric Corp. (Central Hudson), responding to gas emergencies trumps other duties and can become job one in seconds.

Central Hudson's target time for workers to arrive at an emergency site is about 20 minutes, in accordance with parameters established by the New York Public Service Commission. It's a challenging goal when considering the size of the service territory, which straddles the Hudson River from suburban New York City northward to Albany, encompassing about 2,600 square miles. The utility serves more than 74,000 natural gas customers, with a gas system consisting of 164 miles of transmission pipelines and 1,176 miles of distribution pipelines, as well as customer service lines and meters.

Over the years, every employee in Central Hudson's system/dispatch operations group has had an impact on improving the utility's response times. Many have performed the tasks necessary for timely response, and have trained others, while reinforcing the significance and seriousness of the nature of this work.

"In 2004, we centralized dispatch operations from five offices into one, and gave those employees responsibility for callout and operations management," said Timothy Scott, director of customer service process and productivity for Central Hudson. "Our goal was to standardize practices and procedures to speed up emergency repairs as well as scheduled maintenance."

Because of schedules and workload, dispatch personnel may seek responders from anywhere within the service territory, but drawing upon staff beyond the district in which the emergency is located could mean a longer response time. For after-hours calls, the dispatch team also must select responders in a way that ensures an equitable distribution of overtime.

Despite these challenges, during the last five years Central Hudson's system/dispatch operations group has typically outperformed the corporate-set target response time. The target in 2005 was 22.5 minutes, and the average response time was just 22.2 minutes. In 2006 and 2007, the target was 22.5 minutes and 21.3 minutes, respectively. Central Hudson posted a total average response time of 21.3 minutes in 2006 and 20.7 minutes in 2007; these times were even lower than the target set for superior response time both years. From 2008 to 2010, the average response time did not reach the target, but the average response was no more than 54 seconds off the goal.

The New York Public Service Commission requires utilities to respond to gas odor complaints within 45 minutes or less 90 percent of the time. In 2010, Central Hudson met that requirement 99 percent of the time.

From 2004 to 2009, response team staff was reduced while meter sets increased, yet average response time was 6 percent lower in 2009 than in 2004.

Technology and Teamwork Speed Response Time

By using technology and teamwork, Central Hudson has been able to decrease the time it takes to respond to natural gas emergencies. Responding to any gas emergency, especially those that occur after normal business hours, requires locating an available crew, keeping a

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channel of communication open between dispatcher and field technician, and routing crews to the trouble spot.

In 2005, software for automating callout and resource management was put into place, and a mobile workforce management system was implemented. The callout system is a hosted, Internet-based application that automatically identifies available crews, calls them, analyzes responses and reports the outcome. The mobile workforce management system not only guides crews to the scene of an outage but also provides progress reports that enable the utility to keep customers informed of repairs.

"Part of the project to centralize our dispatch operations was bringing in mobile workforce management software from Oracle and an automated callout and resource management system from Arcos Inc.," Scott said. "The ability to do more with less is a result of implementing these two software systems, teaching dispatch operations to use new technology and making sure we worked as a team."

Now, when customers call about a gas emergency, a gas order is created in the customer information system (CIS), which is a mainframe system. When a customer service representative activates an emergency call in CIS, the CIS creates an order in the mobile workforce management system and issues a pop-up message (including a list of the five crews closest to that trouble spot), which is sent to the dispatch operations control center. A dispatcher chooses a crew and wirelessly sends the information it needs to arrive at the gas emergency site. Crews are equipped with Panasonic Toughbook laptop computers to receive orders, get turn-by-turn directions and stay in contact via the mobile workforce management system.

PHOTO COURTESY OF CENTRAL HUDSON GAS & ELECTRIC CORP.

Gas crews repair a natural gas line damaged by a non-utility contractor. The damage affected service to two towns.

After normal business hours, dispatchers handle callout via the Arcos system, which can reach workers after regular work hours. Schedules are maintained in the system, and the payroll team uses the software to cross-check timesheets.

This automated callout and resource management system accounts for complex work rules that ensure overtime is assigned to gas chiefs and mechanics in accordance with labor agreements. Before this system was in place, Central Hudson relied on a system that would require programmers to periodically adjust codes as work rules changed. It was a painstaking process, and programmers spent hours making edits. Since 2005, Arcos has handled changes with a few keystrokes.

The mobile workforce management system has allowed dispatchers to carry out street-level routing of field workers to minimize driving time, which maximizes productivity, reduces fuel expenses and increases the expected lifetime of service vehicles.

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Utility personnel work to restore natural gas service to customers.

Lessons Learned

Before consolidating dispatch operations and implementing new software systems for callout and workforce management, Central Hudson operated with paper-based processes. Although we were saving on technology costs, the cost in time lost was far higher. We learned that before investing in technology it is critical to find the right fit for your business. For example, a technology that forces an organization to bend its business processes to the software's capabilities may not be worth the trouble. It's also important to assemble an evaluation team with representatives from all key areas of your company. And, of course, carefully evaluate all options before pursuing any new technology or process.

Central Hudson's new software systems and associated processes began paying for themselves in a short time. Once the systems were paid for, we were able to consider allocating the future savings toward infrastructure investments.

The mobile workforce management system increased the number of field appointments field workers could handle per day by allowing for more flexible appointment times. And because the automated callout system stores current work rules, such as the order in which gas personnel on different lists should be called, we can manage a constantly changing line-up of available staff when a gas emergency strikes.

Automating our processes and centralizing our team has enabled us to optimize performance and continue complying with regulations even when resources have been stretched.