



No Winter Break(s): Cla-Val Electronic Pressure Management results in a break free winter in an East York-Toronto Pilot Project



Cla-Val Flow Modulated PRV Assembly:
Electronic Pressure Management Valve

When the City of Toronto went looking for ways to reduce water loss in their city's distribution system, they had no idea that the solution they selected would ultimately lead to a winter that was free of pipe breaks - but that's just what happened in their pilot test in East York.

The process started with the selection of Veritec Consulting of Mississauga, Ontario "to provide the city with a long term and sustainable water loss reduction strategy following current industry best practices."

After an initial study was performed, an area in the East York section of Toronto was selected to be used as a Pressure Management Area (PMA) in their pilot program. A second PMA was also identified for implementation at a later date.

Pressure management had been previously identified as an important measure for long term loss reduction for the city based on the premise that lower system pressures during periods of low demand, particularly at night, would result in relief from background leakage - a major culprit in Toronto's reported annual loss of between 10 and 15% of their produced water.

After a minimum night flow analysis established the level of pressure required to ensure adequate supply for peak demand and fire flow requirements, inquiries went out to several control valve manufacturers to provide a product package that could meet Veritec's strategic recommendations.

Cla-Val Canada and Ontario Sales Agent Devine & Associates ultimately provided the most promising solution which included the Cla-Val 12-inch Model 390-02 Electronic Pressure Reducing Valve (PRV) equipped with a differential pressure transducer, a valve position indicator, a 133VF (e-Flow) flow calculator, and a Cla-Val E-Smart flow modulated controller -- the first fully flow-modulated PRV assembly of its kind in North America.

Installation of three such valves was completed by City of Toronto operations personnel in June and July of 2007: one valve to act as the primary Electronic Pressure Management Valve and two to act as slave PRVs set to open during peak demand and fire flow conditions. The entire pressure management scheme in East York was implemented in October 2007 and has been operational ever since.

During this timeframe, minimum night flow pressure savings has exceeded 12 psi or a 20% reduction from a system without pressure management. In addition to the leakage flow rate savings, there was a significant reduction in water main break frequency. In fact, in the time since the East York pilot program was implemented, there have been no recorded water main breaks within the PMA boundaries. Historically, that same area experiences a break frequency of 6 to 8 breaks per year, with most occurring between the months of November and March. So on the way to treat a symptom, the City of Toronto may have very well stumbled onto a cure for one of the most pervasive and expensive operational challenges a water company can face. They expect to roll out a city-wide pressure management program starting in 2009.



PRV Control Panel & Wiring Strip

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