



Fluid Facts *Only EFI*

EFI Integrated Design Maximizes Value

The Village of Mundelein, Illinois, 35 miles North West of Chicago, had a growing water demand and needed to consider options for managing the increasing demand.

Rob Haley, Village Water Superintendent wanted a design that emphasized energy savings. The Village operated with two separate pressure zones and needed to create a third zone to allow the Village to control flow and pressures without excess pumpage. The Village retained Rezek, Henry, Meisenheimer & Gende (RHMG) as their engineering consultant on the project.

The RHMG design scope called for the addition of five interconnection points using five separate pressure reducing stations. RHMG called upon Engineered Fluid, Inc., through their representative, Joe Esposito of Norquip, Inc. to collaborate on the design of the five different pressure reducing stations.

The stations were designed to have their mechanical and electrical equipment built into pre-engineered and factory-built, steel capsules. The capsules were brought to the site completely finished and ready for excavation, connection and burial by the installing contractor.

EFI took their hydraulic and control requirement lead from RHMG through a series of meetings and correspondence and design iterations. In their final form, each of the five stations varied in their configuration and capacity. Because of the flow variation from minimum off-hour flow to peak domestic flow and up to high flow fire demand, the stations had multiple CLA-VAL pressure reducing valves arranged in parallel. Other valve functions were added to the pressure reducing valves for special remote control through SCADA.

Toward the completion of the design phase, Rob Haley determined it would enhance system control if flow measurement could be added to the function of the stations.

RHMG brought the flow measurement problem to EFI. Normally, adding flow meters would either elongate the capsules or require separate flow meter stations in tandem with the pressure reducing stations.

Another option for flow measurement was suggested by EFI. This option was to add the CLA-VAL 133VF Flow Measurement capability to each of the CLA-VAL Pressure Reducing Valves.

The CLA-VAL 133VF System reports an accurate flow rate signal across the full operating range of each individual valve. This is achieved by measuring both the position of the valve diaphragm and the pressure differential across each valve. These individual signals are integrated into

one total flow rate for the station.

Adding the CLA-VAL 133VF Flow Measurement option kept the station designs, the site designs, and the project documents from needing change. Time and money was saved.

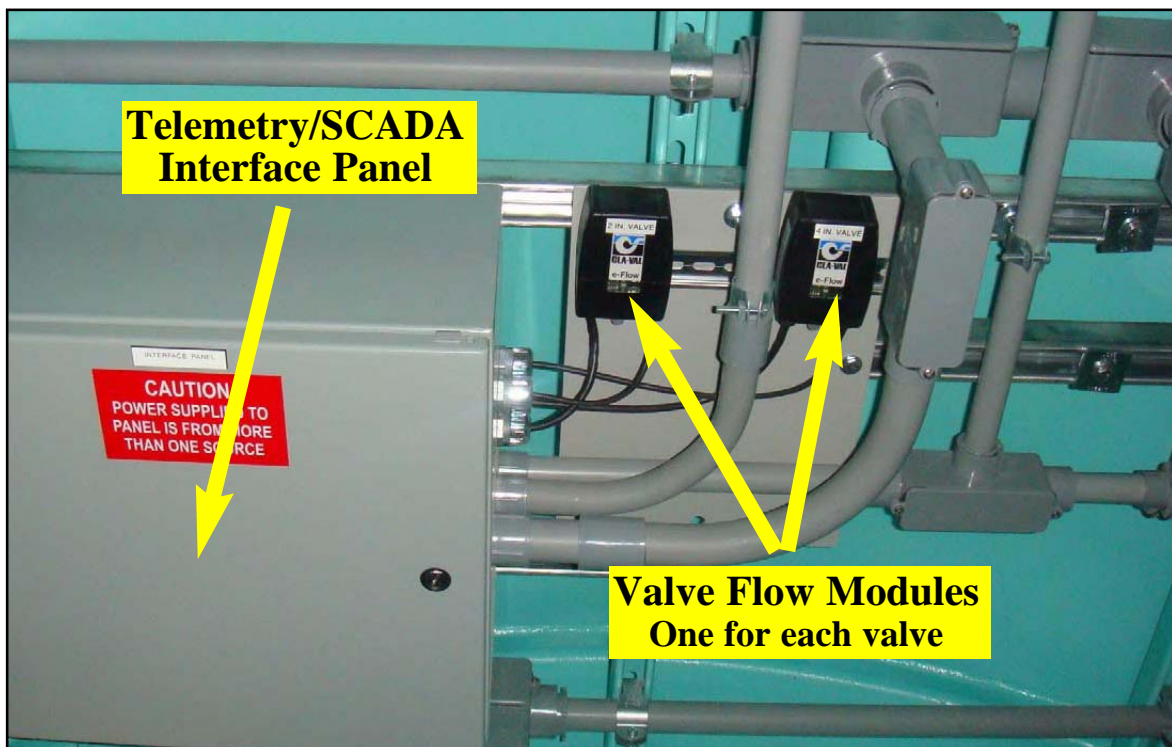
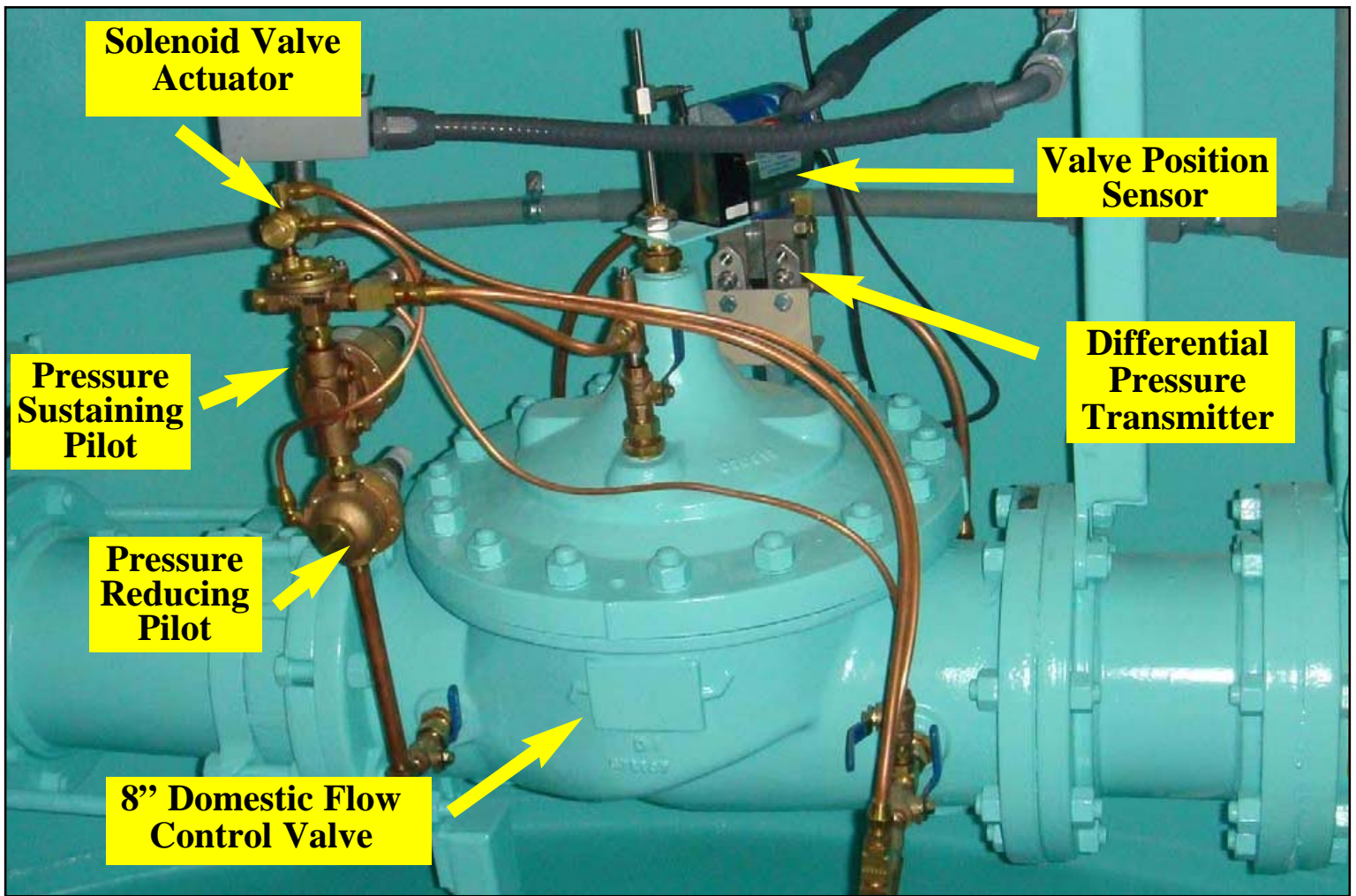
By measuring flow with the control valves, up to \$350,000 in equipment cost and construction cost was saved over the cost of adding separate flow meters.

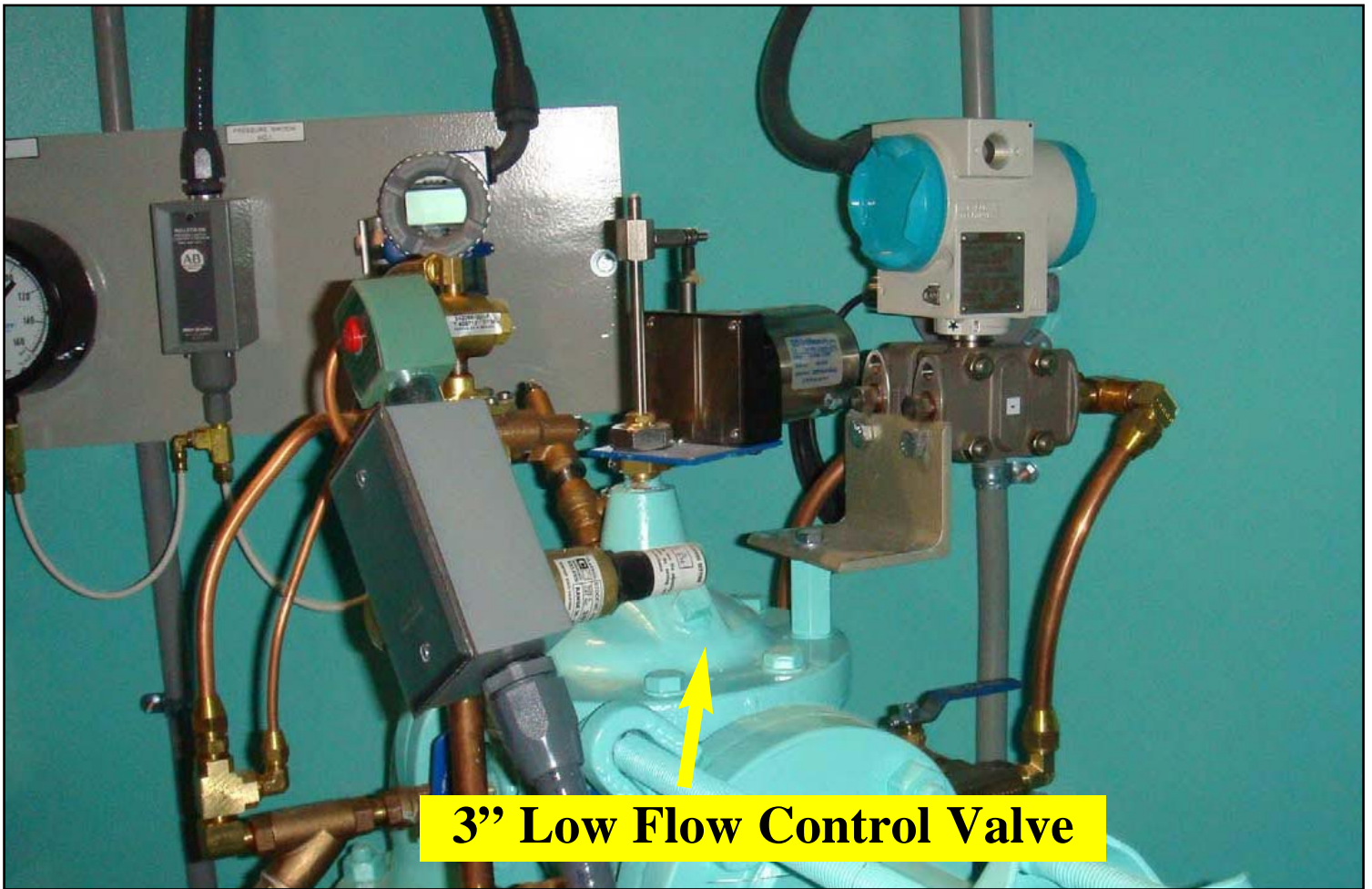
The valve stations are in service and Mr. Haley has seen the benefit of the additional control and information these stations provide to his system management.

Here again, EFI's 45 years of experience in designing and building water distribution equipment has placed us at the forefront of providing intelligent and practical solutions to water system design consultants and to water purveyors across the United States.



Mundelein, Illinois - two pressure reducing stations arriving at the job site on a EFI tractor trailer.





3" Low Flow Control Valve



Here is one of the pressure reducing stations being set into place. After installation is complete, an EFI factory service technician will start-up the stations and train the operators.

This station contains three (3) control valves, a 3” and 8” pressure reducing-pressure sustaining and flow measuring valve and a 10” solenoid actuated and flow measuring valve under SCADA control. The station main line holds a check valve oriented to allow reverse flow if the high zone should suffer a severe loss of pressure.

Interior Plan View

