COST EFFECTIVE REMOTE MONITORING OF CATHODIC PROTECTION SYSTEMS USING WIRELESS DATA TECHNIQUES

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Have you ever taken the time to consider all the intricacies of the pipeline network installed across this continent? It is a phenomenal feat of engineering. This infrastructure, which carries everything from crude to refined product and natural gas from production to burner-tip, is one of the unseen economic advantages this country has over any other industrialized nation. In analyzing the operations of this million mile network, the degree of automation that has taken place over the last 25 years is awe inspiring. Automation has greatly increased the operating efficiency these systems enjoy. While automation has been implemented throughout these systems, many functions of pipeline operations have been left behind. One of these is the Cathodic Protection Network. This begs the question, why?

The simple answer is the same as it is for many issues in business ... economics. There just have not been the right combination of technology, data communication and business reasons to justify automating the CP systems. However, several fundamental changes have occurred which, when put together, demonstrate the time has come to automate Cathodic Protection.

In analyzing why CP systems are not automated, contrast what has been automated. The functions currently automated are those dealing with the revenue side of the business. Those are functions that keep the fluids flowing. Compressor stations, custody transfer points where the requirements deal with insuring delivery and accurate billing for both parties. Accurate billing of customers is a priority for any business. Being a reliable supplier is again critical to ensuring future contracts and revenue. In a manner of speaking the functions along the pipeline that have received the most focus for automation are the "cash registers". Here justifying the cost of automation was easy. There are two business case fundamentals at work; reduce operating cost and access to new revenue opportunities. In the case of CP networks and other functions along the pipeline, there is only one of these elements, reduction in operating cost. Therefore, the only business case to present to management for budgeting purposes is manpower savings. This limitation puts a strain on how much can be spent to automate systems such as CP. Therefore it takes changes in technology and business approaches to present a viable business case to management.

And the times they are a changing, both in economics and the technology. First, technology. We have all seen and taken advantage of the phenomenal decrease in the price of computing power. A calculator that in the 70's was $250 is now a throw away item. Together, we have all been a witness to the explosion in wireless communications offerings. It is this convergence of computing power and communication capability which will allow for the automation of Cathodic Protection and other pipeline functions.

Changes in wireless data communications have probably been the last hurdle to overcome. Even though devices to gather the data have been available, it has been the lack of an economical medium to gather data generated that has stalled efforts to automate CP. In the past, Pipeline companies have had two mediums at their disposal for data communication. Telephone lines or their own microwave systems. Neither were economical means for automating functions on the