

**STATE OF NEW YORK
PUBLIC SERVICE COMMISSION**

CASE 94-E-0952 – In the Matter of Competitive Opportunities Regarding Electric Service

CASE 00-E-0165 – In the Matter of Competitive Metering

CASE 02-M-0514 – Proceeding on Motion of the Commission to Investigate Competitive Metering for Gas Service

**COMMENTS OF
DISTRIBUTION CONTROL SYSTEMS, INC.
AND
HEXAGRAM, INC.
(Hereinafter called Companies)**

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Introduction

Now comes, the Companies, who have customers and potential customers within the jurisdiction of the Commission for the purpose of offering comments as a result of the Commission's Order dated October 10, 2007. The Companies are engineering companies, recently combined, with Nexus Energy, a meter data management software company, as ESCO Communications Segment. All three entities are subsidiaries of ESCO Technologies, a publicly traded corporation based in St. Louis, Missouri. ESCO

Communications Segment exists to provide solutions to electric, water, and natural gas distribution utilities through the use of advanced metering communications technology, used individually, or in combination, power line communication (“PLC”), radio frequency (“RF”) and meter data management tools. . In addition to our 280 plus customer utilities in the U.S., we have pilots either under contract or underway in the Caribbean, South America, and Australia and therefore are interested parties in the above captioned docket. We have extensive experience in designing and successfully implementing to completion, large advanced metering infrastructure (“AMI”) projects also known as advanced metering systems (“AMS”) and/or automated meter reading (“AMR”) solutions to investor owned, municipal, and cooperative electric utilities in the U.S. It is from this base of experience that we offer our comments for consideration. We thank the Commission for this opportunity to share the knowledge of our experience.

Background

The Companies would note the order the Commission issued on August 1, 2006, in the above styled proceedings which directed electric utilities to file comprehensive plans for development and deployment, to the extent feasible and cost effective (emphasis added), of advanced metering infrastructure (“AMI”) systems for the benefit of all (emphasis added) customers, We further note in this order the Commission rightly adopted a broad definition of “advanced metering” with the intent of refraining from including requirements that might favor one manufacturer’s product over another or that might limit innovative solutions that previously not been considered. It is now December 2007 and technology has significantly advanced in the past 16 months. However, the Companies strongly supported those stated positions in the Order of August 2006, and we strongly support those positions today. We do not deny that utilities must have some guidelines to allow enough regulatory certainty to move forward. However, utilities must have the flexibility to choose one or more smart metering technologies that allow them to most effectively serve the needs of their customers, their own business objectives and the regulatory policies desired by this Commission, today and in the future.

It has been our experience designing and implementing large scale AMR and AMI projects that all utilities are different. We are sure this Commission recognizes that a practical reality of technology development is this” One size set of requirements will not fit the needs of all utilities forever. The Commission rightly should adopt a policy that encourages deployment of technology that provides cost effective benefits. Consumers do not generally choose and specifically do not enjoy wasting monetary resources to pay for functions, features, widgets, and gadgets that have small probability of ever being used. We believe the utility is the best judge of which technology it should use to satisfy their consumers’ requests. The policy on smart metering requirements should be flexible to allow this very simple construct. Inflexible mandates, in the long term, could prove extremely expensive to the public interest thereby becoming detrimental to all ratepayers. One pitfall this Commission should consider is the notion that standards currently exist to cover smart metering communications. The recent interest by Congress to develop a “smart grid” is one example of desirable new technology that is still in the design, test, and build stage. As a result, universal acceptance and agreement to “standards” are still being debated. . How can utilities expect to purchase and implement “smart grid” technology when the smart grid requirements are yet to be clearly defined?

As a result of the Energy Policy Act of 2005 (“EPACT”), and numerous meetings Commissions have conducted around the country, much accurate information on smart metering communications technology is available. We would point out that there also exists an abundance of misinformation regarding capabilities and functionality of smart metering technology as well. We applaud the use of the broad definition of “advanced metering” preferred by the Commission in 2006. It was intended to be inclusive of multiple manufacturers’ products lessening the limitation of innovative solutions that would surely never see the light of day, should a “one size fits all” approach to technology be adopted by this Commission. We also applaud the Commission for recognizing that AMI deployments affect all utility users and represent a large technical undertaking involving millions of devices that must integrate with many utility processes and legacy systems. That in itself is a tremendous leap of faith by this Commission.

Today, a utility in Pennsylvania, with over 1.2 million end points has an AMI system which we provided. This system: reads 100% of meters, collecting hourly data, has two way communication features, remote connect/disconnect, and meter outage detection capability. It does not have all of the functionality listed in the features and functions proposed by the Staff, but it is extremely reliable and works very well for this utility and its customers. We bring this to your attention because the Commission should be very wary of what can be determined as basic AMI functionality and what amounts to “gold plating”. We are sure the Commission has heard of the term “gold plating” as used in the context of providing features and functionality which the consumer pays for but never uses. We encourage the Commission to be mindful that if 90% of the people that use smart meters never use one or more of the mandated metering functionality, perhaps that functionality should be optional and at the expense of the consumer desiring that feature. To use an old New England phrase, why let the tail wag the dog? For those that want it, it is easy enough to provide. Our point to this Commission is this: Define the minimum requirements based on the cost benefit relationship to the consumer with and be realistic regarding those hypothetical avoided cost constructs that may never materialize. There are experiments like the above in play in other locations outside of New York State. Suffice it so say, billions of dollars are at risk on the utility side as well as the consumer side of the issue. We would be disappointed if this Commission did not use its Yankee ingenuity to take an expedient but conservative approach to which smart metering requirements are really necessary to deliver the Commission’s desired and stated goals. It is our position that the cost causation principle should dictate that features outside the established minimum requirements by the Commission can be and should be optional at the consumer’s choice and at that specific consumer’s expense.

Comments

Below are our responses and questions regarding the proposed list of features and functions for an AMI system directly address the Commissions list. These comments represent concerns and issues that some of these requirements create for the utility. In some cases it is felt that these requirements burden the capabilities of the system therefore unduly increase the overall cost of the system. In other cases, these requirements represent solid advancements in the industry but should not be ubiquitously deployed as they would be unused in many locations.

[a\) ANSI compliant \(must meet all ANSI standards\).](#)

It is agreed that this should be a requirement.

[b\) Bi-directional registration \(supports net metering\).](#)

Currently, without a change in depreciation rates as currently being debated in Congress, this requirement places a burden on the utility to either replace all existing electro-mechanical meters with solid state bi-directional registering meters or utilize a vendor with AMI modules that can be retrofitted to electro-mechanical meters that can discern rotation. While many AMI vendors (including ESCO) can provide such a capability, the ubiquitous enforcement of this requirement may negatively impact the overall business case for an AMI solution.

[c\) Visual read capability for cumulative usage.](#)

While this capability has been a traditional requirement of meters, it should be time to consider approaches that eliminate the requirement for an integral display. In light of the mandatory integration of communications with the meter along with the increasing interest in Home Area Networking, it should be considered that an integral display at the meter is no longer necessary. In addition to simplifying the overall design, elimination of the display on a solid state meter reduces cost and removes the most prominent single point of failure thereby increasing the expected service life and overall quality of the product. It should be noted that incumbent U.S. meter manufacturers have enjoyed for years the advantage of superior technology over foreign manufactures in the area of display technology, which for many has been the most common area for meter failures.

[d\) Ability to provide time-stamped interval data, at hourly or shorter time intervals.](#)

This is agreed to be a requirement of a system. However, this capability should be defined as being supported by the integrated meter/AMI module package rather than requiring the support by the meter itself. This allows utilities to use less expensive meters.

[e\) On-board meter memory capable of storing at least 60 days of readings.](#)

These 60 days of readings seems to be vaguely defined. Is this 60 days of daily readings or 60 days of interval data? Is it interval data on multiple channels? Regardless, this time period seems to be extraordinarily long given the quality and reliability of many AMI communications systems. It seems to overly burden the resources of the AMI/meter package. In most cases a 7 day history has proven to be more than sufficient.

[f\) Direct, real-time \(defined as a time lag of five minutes or less\) remote read-only access for customers and/or competitive providers to meter data.](#)

It is unclear as to whether this requirement is for all meter data, interval data, or simply total consumption. It is also unclear as to whether this real time access should be via the AMI communications system or perhaps locally via a HAN interface. Assuming that this requirement refers to the AMI communications system, care should be taken in mandating such a requirement since no system has been proven to have this capability at any given scale. Equally unproven is the customer's desire to have this data. Also, it is likely that any retailer wanting to have this data would be tied to a Demand Response program which has its own requirements to satisfy.

[g\) Capability to remotely read meters on-demand.](#)

It is agreed that this should be a requirement.

[h\) Utilizes open standards-based communication protocols and platforms, e.g., broadband, PLC, internet, XML, MV-90, Zigbee, DNP3, etc.](#)

Proprietary communications protocols and platforms should not be dismissed out of hand. This is especially true if they represent the most cost effective, reliable, and secure means of communications. What should be required instead is the ability to interface to such a system via an open standard methodology. This could be achieved via a communications conduit at the host or some type of HAN technology local to the meter. Dismissing proven AMI technologies, especially any that are proven in scale, needlessly introduces more risk in the Utility technology decision.

[i\) Two-way communications capability, including ability to remotely upgrade meter firmware.](#)

It is agreed that this should be a requirement. However, it is pointed out that the exact means of upgrade should be left to the discretion of the individual communications system designers. It should also be considered that not all AMI/meter packages be initially upgradeable so as not to overly burden the entire system cost.

[j\) Ability to send signals to customer equipment to trigger demand response functions, and/or connect with a home area network \(HAN\) to provide direct or customer-activated load control.](#)

It is agreed that this should be a requirement although it is recommended that this statement remain suitably vague and that it not mandate this as a ubiquitous capability for all customers. It should be readily recognized that not all customers will be candidates for demand response or HAN interfaces.

[k\) Positive notification of outage/restoration.](#)

The term “positive notification” would seem to eliminate any type of power line based communications system. Since those types of systems were listed as acceptable in item h above, it is suggested that the requirement should possibly be for “accurate and reliable outage assessment/restoration.”

[l\) Self diagnostics, including tamper flagging capability.](#)

It is agreed that this should be a requirement.

[m\) Upgrade capability.](#)

It is agreed that this should be a requirement although it should be a question as to whether this should be a ubiquitous requirement for all endpoints.

Conclusion

To our knowledge, there is no system in mass use today in the U.S. that provides all of the functionality suggested in the “standard” for AMI systems proposed by the Commission in its Notice Seeking Comments, issued on October 10, 2007. There are several “science projects” testing concepts created in a laboratory setting which work fairly well under perfect conditions but have not passed the mass scale usage test. There

are several pilots planned or in place using upgraded technology which has been proven in large scale deployments. Many of these projects are erroneously called “pilots” in the hope of attracting more business. The existence of so many “pilots” around the U.S. is proof that utilities are desirous of the potential benefits an AMI system can deliver, but it also recognizes that technology continues to be immature and continues to develop. The cost of investment leaves little room for error, hence the use of test deployments on small scale. Every utility is different.

It is important to note what was recently spelled out in the FERC 2007 Assessment of Demand Response and Advanced Metering at this point. Functions being required of AMI systems by various utilities are growing. Typical specifications listed by a number of utilities in their recent RFPs include:

- ability to provide time-stamped interval data for each customer, at least hourly, but often as short an interval as 15 or 30 minutes,
- option of remote disconnect/connect for some or all meters,
- ability to remotely upgrade meter firmware,
- ability to send messages to equipment in or around customer home to support demand response,
- positive notification of outage and restoration,
- capability to remotely read meters on-demand,
- voltage interval reading capability at same interval as meter readings,
- tamper flagging capability,
- support for some form of prepay metering.

Common sense mixed with practical application and successful mass deployment should equal enough flexibility, when developing smart metering requirements, to allow for smart metering technology to stabilize. We believe the Commission should adopt guidelines within the policy, which foster the end result goals the Commission desires. We believe it is the burden of the utility to propose technology that meets the broad policy goals set by the Commission, within the regulatory guidelines established by the

Commission. And if those guidelines are followed, the Commission should be obligated to approve those costs established by the utilities as the project is completed.

Respectively Submitted,

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Active Party List noticed