December 10, 2007

Honorable Jaclyn A. Brilling
Secretary
New York State Public Service Commission
Three Empire State Plaza
Albany, New York 12223-1350

Re: Cases 94-E-0952, 00-E-0165 and 02-M-0514 – Response to Notice Seeking Comments

Dear Secretary Brilling:

In its October 10, 2007 *Notice Seeking Comment* in Cases 94-E-0952, 00-E-0165 and 02-M-0514[1], the New York State Public Service Commission ("PSC" or "Commission") asked parties for comments on the features and functions of advanced metering infrastructure ("AMI") systems that should be considered standard. In particular, the PSC sought responses to three targeted questions about a list of thirteen standards that Department of Public Service Staff assembled for potential inclusion in an AMI standard. New York State Electric & Gas Corporation ("NYSEG") and Rochester Gas and Electric Corporation ("RG&E") (collectively, "the Companies") provide below the responses to the three targeted questions.

While the *Notice Seeking Comment* was not explicit, most of the thirteen standards appear to relate to electric service and the answers provided focus primarily on the electric area: Table 1 indicates those standards that have been assumed to apply to electric service only.

I. Whether the list is sufficiently comprehensive, or whether additional features or functions should be specified.

The Companies feel the list is reasonably comprehensive but advance two additional functions for consideration.

While it may be assumed to be covered by proposed standard J., the Companies want to note that the proposed standards do not include specific reference to either on/off or load–limiting electric disconnect switches. The companies believe that an AMI system should offer the functional capability to remotely turn power on or off, and that load-limiting capability may be desirable. Disconnect switches are not included in the Companies' current business cases, but the disconnect capability may be a feature with future value. A disconnect standard would require support for disconnect switches, but not necessarily require the installation of disconnect switches for all meters. However, 100% deployment of switches is an option being evaluated

[1] Case 94-E-0952 – In the Matter of Competitive Opportunities Regarding Electric Service; Case 00-E-0165 – In the Matter of Competitive Metering; and Case 02-M-0514 – Proceeding on Motion of the Commission to Investigate Competitive Metering for Gas Service.

and pursued in California, and universal deployment of switches should at least be discussed in the context of standards here.
The Companies believe that web presentment of customer consumption data can support creation of valuable conservation benefits, and that such a web portal should be a standard for AMI systems being implemented.

II. Whether the list includes items that should not become part of a Commission standard.

Table 1 summarizes the Companies' views of the standards that have been proposed. Of the thirteen proposed standards, the Companies are in substantial agreement with nine standards and in agreement, but with qualifications, with four standards.

For the most part, the proposed standards successfully characterize the needs of New York electricity customers without attempting to specify how the utilities are to achieve the functional capabilities. The Companies feel that standards based on functionality are strongly preferred relative to standards based on technology characteristics.

Industry experience with BlueTooth provides an excellent example of why the Companies argue strongly for functional as opposed to technological standards. Only five years ago BlueTooth was being touted by many AMR and AMI suppliers as "the standard" that should be universally adopted. Today, while BlueTooth remains a viable standard for some industries, it has been abandoned by all AMI vendors.

As can be seen in the table below, the Companies agree with qualifications to four of the thirteen proposed standards. First, the Companies have concern that the 60-day memory requirement and the positive outage and restoration requirements are particular technology standards that are too specific. The Companies agree that there is a need for on-board memory, but feel that the AMI system on-board memory should be consistent with the performance expectations of the AMI system, rather than being tailored to a particular time period. In addition, the AMI positive outage and restoration notification specifies only one approach for creating outage and notification benefits. For example, some AMI systems "poll" meters on a regular basis and thus can create benefits identical to or similar to the active notification systems. Consequently, the Companies agree that an AMI system should support power restoration benefits, but are reviewing AMI systems that provide those benefits in a number of different ways.

The companies also have concern that the standard related to real-time (less than 5-minute) provision of information to customers and competitive providers has a major drawback. It has potential to create situations where the data received in real-time does not match the data finally used to prepare bills (due to PSC approved validation and editing processes that customers are unlikely to duplicate). This could be the source of significant customer confusion and concern. Thus a standard in this area needs to have a clear and well-understood caveat for customers about potential data inconsistency.

Another concern about real-time provision of consumption data depends on what "real-time" means. For occasional queries from customers and competitive providers, capability to execute a real time measure of the current cumulative consumption read is certainly possible. However, if real-time means a constant flow of interval data from the meter to the customer or energy provider, then there are some feasibility concerns. Home Area Networks (HANs) might be the primary device for communicating such information to customers, and may not offer 100% communication coverage into the customer premises.

No matter what, if HANs transmit the real-time consumption data to the customer premises, it will be the customer's responsibility to collect the data which is sent, process it as needed, and retransmit if necessary. The utility should not be held responsible for the failure by customer owned equipment to receive the data being transmitted by the utility because the utility will have no control over the quality, capability or performance of consumer-purchased devices intended to receive the metering data. The utility should not be held responsible for any interference that may result from the requirement to send meter reading data on some frequent basis if in doing so the messages cause interference to communication for other in home devices that the consumer may purchase.

Finally, the Companies have a concern about the "openness" standard. The Companies agree the AMI systems installed should support open as well as interoperable operation to the greatest extent economically viable and practical within the bounds of the AMI functionality needs. However, the Companies feel that specific and rigid standards on "openness" beyond a goal to pursue "openness" as much as possible could be difficult or impossible to develop within a reasonable time frame, and could severely restrict the number of AMI systems that the Companies could consider(since most AMI systems on the market today are not fully "open"). Moreover, the Companies feel that carefully structured contracts provide much of the price protection and future-proofing open standards are expected to create. Consequently, the Companies disagree that a strict "openness" standard should be included at this time, and prefer instead the identification of openness as an objective to be pursued, subject to other considerations of functionality and cost.

Table 1: Summary of Comments on the Proposed Standards

	Brief Summary of Standard	Comments on the Proposed Standard
A	ANSI compliant (must meet all ANSI standards)	Agree
B	Bi-directional registration (supports net metering)	Agree: Assumed to be specific to Electric Service
C	Visual read capability for cumulative usage.	Agree
D	Ability to provide time-stamped interval data, at hourly or shorter time intervals.	Agree: Assumed to be specific to Electric Service
E	60 Days of on board memory	Agree with Qualification

	Brief Summary of Standard	Comments on the Proposed Standard
		The AMI endpoint should have some on board memory but the amount of memory required should not be explicitly specified. The amount of memory required will depend on the functional standard on how complete the interval data collected by the AMI system needs to be. If, for example, the AMI system is expected to deliver 99.6% of all interval data from each meter in the service territory, then the memory in the meter needs to be sufficient to support collection of data up to this functionality standard. Different AMI systems may require different amounts of on-board memory to meet the final functionality standard.
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.	Agree with Qualification: Assumed to be specific to Electric Service We agree the AMI system should have the capability to provide some real time access to consumption data. However, providing data directly from the meter will certainly create situations where the data used for billing, which is validated, edited, and in rare circumstances estimated, will be different than the data coming directly from the meter. Thus, committing to a second distinct source of consumption data has the potential to create confusion. If the PSC mandates this functionality in the long term then there needs to be a caveat that the data displayed for the customer is not billing quality data and can be used only to generate estimates of bills. If customers buy 3rd party software or bill analysis services, then there will likely be differences in the two "bills." Also, real-time communication is most likely to be feasible if it entails an occasional real-time request to query the meter for the cumulative consumption read. However, the intent of real-time access may be different than an occasional cumulative consumption read. It may imply the continuous monitoring of consumption over fixed intervals. For customers, this monitoring may be intended to rely on a HAN for the expected communications link for this type of information. While HANs can be 100% enabled at the meter, their successful communication into customer premises may be less than 100% due to technology reasons, so that the access to the data could not be guaranteed. In any event, it would be the customer's responsibility to receive the data transmitted, process it, and retransmit it if necessary.
G	Capability to remotely read meters on-demand.	Agree
H	Utilizes open standards-based communication protocols and platforms, e.g., broadband, PLC, internet, XML, MV-90, Zigbee, DNP3, etc.	Agree with Qualification: Assumed to be specific to Electric Service We agree that open standards are desirable but should not be a rigid requirement. The Companies will use widely adopted open standards based AMI solutions to the greatest

	Brief Summary of Standard	Comments on the Proposed Standard
		extent possible, within practical and economic constraints. The Companies will deploy the most open system that meets the needs of its customers without exposing all parties to undue risk associated with unproven technologies or those that cost more than proven ones.
I	Two-way communications capability, including ability to remotely upgrade meter firmware.	Agree: Assumed to be specific to Electric Service
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 customer-activated load control.	Agree: Assumed to be specific to Electric Service
K	Positive notification of outage/restoration.	Agree with Qualification: Assumed to be specific to Electric Service We agree that AMI systems should support improvements to outage and restoration processes but the means by which this capability is implemented varies among AMI system vendors. Most if not all AMI systems enable improvements in the outage identification and restoration processes. However, each AMI system provides information to achieve these improvements in slightly different ways, not all of which include positive notification. For example, some PLC solutions do not support positive notification, but rather poll meters to ascertain status. Improvements in outage notification and restoration are system benefits which should be evaluated in the same way as other system benefits. To require positive notification might narrow AMI system choices available for consideration. Consequently, the Companies suggest removing the term "positive".
L	Self diagnostics, including tamper flagging capability.	Agree
M	Upgrade capability	Agree: Assumed to be specific to Electric Service

III. Whether the items included on the list are accurately and/or sufficiently defined; and if not, how to improve the definition.

Several of the standards can have multiple interpretations, and thus need further clarification. Table 2 below highlights some of the questions raised by presentment of the proposed standards.

Table 2: Questions Raised by Proposed Standards

	Brief Summary of Standard	Clarifying Questions
A	ANSI compliant (must meet all ANSI standards)	
B	Bi-directional registration (supports net metering)	Is measuring the net consumption sufficient, or are two channels required to simultaneously measure in and out

	Brief Summary of Standard	Clarifying Questions
		registration?
C	Visual read capability for cumulative usage.	
D	Ability to provide time-stamped interval data, at hourly or shorter time intervals.	How are the "shorter" time intervals defined?
E	60 Days of on board memory	
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.	Is this capability for 100% of customers or for selected customer segments? Is capability required for continuous sustained access to data or for occasional requests related to cumulative consumption from customers and competitive providers.
G	Capability to remotely read meters on-demand.	How much latency (i.e. time delay) is tolerable in terms of receiving the remote read once it has been requested?
H	Utilizes open standards-based communication protocols and platforms, e.g., broadband, PLC, internet, XML, MV-90, Zigbee, DNP3, etc.	There is confusion in the industry about what exactly constitutes an open platform or protocol and the degree to which they support the underlying goal of interoperability
I	Two-way communications capability, including ability to remotely upgrade meter firmware.	
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 customer-activated load control.	
K	Positive notification of outage/restoration.	What percent of meters that experience an outage or a restoration need to successfully send a notice? What percentage of those notices need to be received? In some of today's systems, information collisions result in only a portion of the notifications being received.
L	Self diagnostics, including tamper flagging capability.	What type of self-diagnostics is required? What kind of tamper-flagging capability is required?
M	Upgrade capability	What does upgradeability mean? Is it limited to reprogramming of the consumption intervals, or does it include complete firmware replacement?

If you have any questions regarding this filing, please contact me at (585) 771-4692.

Respectfully submitted,

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