

- (c) The Bureau of Fixed Utility Services recommends that the Commission adopt the draft Order rescinding our previous orders relating to the implementation of a single Internet communications standard.

PENNSYLVANIA
PUBLIC UTILITY COMMISSION
Harrisburg, PA. 17105-3265

Public Meeting held June 10, 1999

Commissioners Present:

John M. Quain, Chairman
Robert K. Bloom, Vice Chairman
David W. Rolka
Aaron Wilson, Jr.

Standards for Electronic Data Transfer and
Exchange Between Electric Distribution
Companies and Electric Generation Suppliers

Docket Number:
M-00960890 F0015

(REVISED) ORDER

BY THE COMMISSION:

DOCUMENT
FOLDER

In November 1997, this Commission established the Electronic Data Exchange Working Group ("EDEWG") to develop a standard set of data transaction guidelines for the implementation of electric competition on January 1, 1999. Since that time, EDEWG has developed a series of reports outlining specific protocols for use by the Electric Distribution Companies (EDCs) and the Electric Generation Suppliers (EGSs) for the exchange of electronic data relating to customer information and its transfer over the Internet. By Orders adopted on June 18, 1998, August 13, 1998, September 17, 1998, November 4, 1998, February 11, 1999, and March 18, 1999, the Commission has approved numerous standards submitted by EDEWG governing the electronic exchange of data.

One standard that we adopted was the use of a single, interim
Internet communications transfer protocol, the Gas Industry Standards Board

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(GISB) Electronic Delivery Mechanism (EDM) standards. All EDCs and EGSs were ordered to immediately commence testing of this interim solution and to conclude no later than March 1, 1999. (Order entered September 17, 1998) This date was set as a deadline wherein a business partner (EDC or EGS) who was compliant with our September 17, 1998 Order could require a non-compliant business partner (EDC or EGS) to bear the full costs of transmitting Electronic Data Interchange (EDI) transactions through a Value Added Network (VAN) service. In addition, we clarified our view on this implementation deadline by stating that the GISB standard should be developed. (pp. 8-9) In response to our directive, the EDEWG established an EDEWG-GISB Task Force to test the GISB solution.

It was during GISB Task Force discussions leading up to and at its February 8, 1999, meeting when we were alerted to unanticipated problems relating to the security program required by the GISB EDM standards. We had based our previous decisions relating to the use of the GISB standard, in part, upon the data security criteria that had been set forth in Section 4 of the EDEWG Revised Plan.

By Order entered February 11, 1999, the Commission postponed the implementation date for the GISB EDM protocol from March 1, 1999 to July 1, 1999. At that time, the Commission sought comments from interested parties relating to the continued reasonableness of the implementation of that standard from a technical and financial basis. Although the comments filed by several parties were very helpful, they were not sufficiently complete to enable an informed decision by the Commission on the complex technical issues involved with implementing this mechanism. Based upon the rapidly changing technology surrounding the use of Internet transfer mechanisms and the substantial financial

investments that are necessary to implement these protocols, the Commission desired to gather as much pertinent information as possible before rendering a decision. By Secretarial Letter dated April 2, 1999, the Commission announced that a fact-finding technical conference would be conducted to facilitate the resolution of this issue.

On April 28, 1999 a technical conference was held. Fifty-three representatives from Pennsylvania EDCs, EGSs, energy marketers, the gas industry, communications information system services, software product vendors, and e-commerce organizations attended the conference. Also present to ask questions of participants were Commission staff representing the Office of Executive Director, the Law Bureau, and the Bureau of Fixed Utility Services. Statements were received from interested parties on the various technical and financial issues related to GISB EDM standards and the Internet Engineering Task Force (IETF) EDIINT protocols and their development. A list of speakers is provided in Attachment A to this Order. We appreciate the interest and commitment of all parties who participated in this important event.

Background

An Internet communications transfer protocol refers to the means of transferring data electronically over the Internet; such means is commonly known as electronic commerce. In all electronic commerce, one party initiates or sends a transaction and the other party receives the transfer. In the electronic commerce process, participants must be able to use a common method for sending and receiving electronic documents. A standard Internet communications transfer protocol within the electric industry would enable all parties to communicate Electronic Data Interchange or EDI transactions with one another. There exist

many different types of Internet communications transfer protocols, but not all are interoperable, which means that unless a standard protocol is selected, communications across the industry will not occur.

EDI is the computer to computer exchange of business documents in standard, machine-readable formats. This Commission has adopted the use of EDI standard formats for the exchange of business information in the restructured electric industry in Pennsylvania. The type of business information exchanged through EDI includes, but is not limited to, billing, energy usage, enrollment, volunteer, drops, and reinstatement transactions. Currently, there are more than 20 EDI standards that are in use by EDCs and EGSs participating in the Pennsylvania Electric Choice Program.

In order to achieve interoperable communications, companies must develop common business processes and automated systems to ensure an efficient and flexible business environment. A standard method of implementing electronic commerce requires a major investment in human resources and technology, including computer hardware and software, and in many cases, computer support services.

In response to the deregulation of the natural gas industry, the Gas Industry Standards Board or GISB was established to address the need for common business processes and automated systems to ensure an efficient and flexible business environment. GISB formed the Future Technology Task Force to develop standards to accomplish electronic commerce using the Internet. The Task Force accomplished their goal and developed the Electronic Delivery Mechanism (EDM) Related Standards. GISB EDM standards have undergone several revisions since their establishment nearly five years ago.

CommerceNet was established about the same time that the GISB EDM standards arrived. CommerceNet is an electronic commerce industry organization, which provides a centralized source of information and various services for its members. The CommerceNet does not develop standards for Internet communications. CommerceNet does provide interoperability testing for the IETF EDIINT standards.

IETF refers to the Internet Engineering Task Force, which is the international body responsible for developing all Internet standards. IETF started the EDI Internet Working Group or EDIINT to provide standard ways to send EDI over the Internet. EDIINT published the AS1 draft standard in 1998 and is expected to publish the AS2 draft standard sometime late in 1999. AS1 uses electronic mail standards for exchanging EDI transactions; AS2 uses web standards for exchanging EDI transactions.

The Utility Industry Group (UIG) is an industry action group dedicated to the advancement of Electronic Data Interchange (EDI) within the electric, gas, and combination utility industry. The UIG does not set standards for Internet protocols. It participates in the Accredited Standards Committee (ASC) X12 process that sets the cross-industry standards. The American National Standards Institute chartered the ASC X12 to develop uniform standards for inter-industry electronic interchange of business transactions. The UIG provides guidelines that assist utilities using these standards to benefit more fully from EDI. The UIG represents the Edison Electric Institute on the ASC X12 committee to facilitate implementation of EDI in the utility industry. To date, the UIG has not developed guidelines for the use of a communications protocol for delivery of EDI

transactions over the Internet and has not recommended a specific protocol for use in these transactions.

Discussion

At the Technical Conference, the participants did not establish that there is any discernible financial difference between the implementation of either the GISB EDM Internet communications standards or any of the currently available or developing IETF EDIINT protocols. We learned that the problems relating to the security program of the GISB EDM protocol were not insurmountable, but were susceptible to the complexities of the market place--the security method used by GISB EDM operates in an informal, non-standardized function left entirely up to the users to implement. The EDIINT protocols operate in a secure environment that is based on a Public Key Infrastructure or PKI, which is a method of establishing trust through the issuance of certificates by an authority of the state.

Additionally, we learned that the EDIINT e-mail solution is currently available, but there is no support for data compression in EDIINT AS1. Also, we were informed that e-mail based solutions lack immediate acknowledgment and are vulnerable to "spamming" or data corruption. For these reasons, use of the EDIINT AS1 protocol may not provide an economic or efficient method of transferring EDI transactions over the Internet for certain users. However, Hyper Text Transfer Protocol (HTTP) circumvents the problems associated with e-mail. HTTP is a high-level Internet transfer protocol. HTTP delivers immediate acknowledgments upon successful transfer of the data, and all communication is direct. The IETF is currently developing a second Internet protocol that uses HTTP that is called EDIINT AS2. Although EDIINT AS2 is promising, this

protocol is still under development; there are no EDIINT AS2 implementations. However, according to the participants to the technical conference, it is expected that these standards will be developed and ready for use within the next six to nine months. The GISB EDM Internet standards currently use HTTP.

Participants at the technical conference affirmed our previous understanding that the GISB EDM standards have been fully developed and tested and provide an economically viable solution. GISB EDM operates in a peer-to-peer environment, which does not require the use of a third-party certification process. GISB EDM operates on a model of trust through a trading partner agreement; both parties are well known to each other. However, this method of establishing trust does have its limitations. As described earlier in this Order, the security environment for GISB EDM functions in an informal manner. Such security operates using Pretty Good Privacy (PGP)--a data encryption software application which is not unreasonably expensive, but which has been recently upgraded by its sole proprietor, Network Associates Inc. Subsequently, major system overhauls could be needed by certain existing enterprises in order to effectively exchange data with new market entrants. Additionally, financial institutions typically do not transact business using PGP, but instead operate through a PKI infrastructure. Although there are many similarities between GISB EDM and EDIINT AS2, the methods by which these Internet protocols provide data security are separate and distinct and, at this time, they are not interoperable.

Finally, we learned that the IETF and GISB organizations are currently discussing the possibility of converging the IETF AS2 and the GISB EDM into one standard so that the benefits of interoperability and broader industry support of standardized data can occur. No time frame has been established for the completion of this process.

Clearly, each of the existing Internet protocols have limitations which must be weighed in determining the appropriate mechanism for the exchange of the EDI transactions. While GISB is in a more advanced stage of development, it has limitations with respect to its applicability to other areas of commercial transactions. On the other hand, the other Internet protocols are moving quickly toward development and deployment but are not totally refined. It is abundantly clear that this is an emerging technology with, as yet, no dominant or universally accepted protocol.

While the Commission continues to believe that the establishment of one standard is preferred, we are not convinced that the industry is sufficiently mature to make the specific determination as to which protocol would be the best one to employ in Electric Choice. GISB is used in the gas industry and has some promise within the electric industry; however, as the market emerges, other protocols, equally able to handle Electric Choice are being developed. These other protocols may also be used for other, more varied, data exchanges. At some point, the cost of maintaining separate protocols to handle different types of transactions will prove cumbersome and uneconomical. The decision of which protocol to employ is one that the Commission believes will be determined by the market.

The Commission strongly encourages industry convergence of Internet standards which would permit all parties, e.g. customers, the financial industry, energy marketers and brokers, as well as EGSs, EDCs, and others, to participate in the opportunities made available through the Electric Choice Act. We believe that adoption of an interoperable standard alleviates any need for a regulatory imposition of a specific Internet protocol and would allow the technology and the market determine the best resolution of this issue.

In the context of the above discussion, the Commission has decided to rescind its previous Orders relating to the use of a single interim Internet protocol, and instead prefers to allow the market to decide which Internet communications protocol is most appropriate. In light of this decision, there are two outstanding issues that must be addressed: (1) Section 4 of the EDEWG Revised Plan, which describes electronic transmission via GISB EDM and the VAN, and how the GISB Task Force should function; and (2) the transmission of detailed interval metered data, which can be costly to transmit using a VAN.

With respect to the first outstanding issue, we direct the EDEWG to reconsider the criteria and process for electronic transmission as described in Section 4 of the Revised Plan, and to recommend how this Section should be revised in accordance with this Order. We also direct EDEWG to reevaluate the mission of the GISB Task Force in the context of its first recommendation. The EDEWG shall submit its recommendations on these two matters to the Commission on a timely basis so that an Internet protocol can be tested and implemented by EDCs in accordance with this Order.

Relating to the transmission of detailed interval metered data, we direct EDEWG to revisit the EDI 867 Interval Usage transaction. The 867 IU transaction has not yet been fully developed, but is currently being used by GPU in draft form. As drafted, the EGS has no choice but to accept detailed interval metered data. Since this is an important industry issue, the EDEWG must consider the options for providing summary and detailed interval metered data with the understanding that anyone asking for the latter will incur provider charges, as appropriate. The EDEWG shall submit its recommendation on this matter, along with any majority and minority opinions, to the Commission on a timely basis so

that an Internet protocol can be tested and implemented by EDCs in accordance with this Order.

We believe that the changing environment for Internet communications will compel companies to eventually decide upon a single Internet protocol. We shall not, therefore, select a specific protocol or product. However, we do hereby establish a time table for selecting and implementing an Internet protocol. EDCs shall select an Internet protocol by December 31, 1999, and implement Internet communication exchanges of EDI data no later than June 30, 2000. If an EDC is not compliant with these deadlines, then the EDC shall pay all charges associated with the use of a Value Added Network (VAN). Any EDC which has already selected a specific protocol and is currently implementing it, may proceed with their current course of action.

The most commonly used method of electronic communications implemented by EDCs and EGSs at this time is the VAN, which is a service provider that provides mailbox access and related services for the exchange of EDI transactions. Small, licensed EGSs may not find it cost-effective to implement an Internet transfer protocol. Requiring these suppliers to pay all of the VAN charges, however, may be cost-prohibitive. Therefore, if an EGS chooses to continue to exchange EDI data using a VAN, it may do so with each trading partner paying its own VAN charges.

With respect to those entities which will be providing competitive billing and metering services and competitive default supplier (CDS) service in the EDCs' respective territories, the directives in this Order shall also apply. In the event that an EGS (generation supplier, metering/billing provider, or CDS) is ready

to implement the EDC's Internet solution prior to June 30, 2000, it may do so at anytime; **THEREFORE,**

IT IS ORDERED:

1. That all previous Orders under Docket No. M-00960890 F0015 are hereby rescinded to the extent that directives relating to the use of a single interim Internet protocol are modified in accordance with this Order.

2. That all EDCs are required to select an Internet protocol for the transmission of EDI data by December 31, 1999, and to implement Internet EDI exchanges no later than June 30, 2000. An EDC that is not compliant with these deadlines shall pay all charges associated with the use of a Value Added Network (VAN).

3. That should an EGS be ready to implement the EDC's Internet solution prior to June 30, 2000, it may do so at anytime.

4. That effective with the entered date of this Order and unless otherwise specified in this Order, if an EGS chooses to continue to exchange EDI data using a VAN, it may do so with each trading partner paying its own VAN charges.

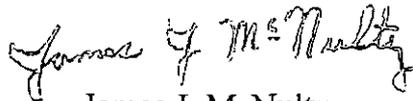
5. That EDEWG shall reconsider the criteria and process for electronic transmission as described in Section 4 of the Revised Plan in accordance with this Order, and shall reevaluate the mission of the GISB Task Force in the context of its proposed revisions to Section 4. With respect to these issues, the

EDEWG is directed to submit its recommendations to the Secretary's Bureau within 90 days of the entered date of this Order.

6. That EDEWG shall redraft the EDI 867 Interval Usage transaction to include options for providing summary and detailed interval metered data with the understanding that the entity requesting detailed interval metered data will be responsible for payment of the provider's charges, as appropriate. The EDEWG shall submit its recommendation on this matter, along with any majority and minority opinions, to the Secretary's Bureau within 90 days of the entered date of this Order.

7. That a copy of this Order and any accompanying statements of the Commissioners be served upon all jurisdictional electric distribution companies, all licensed electric generation suppliers, the Office of Consumer Advocate, the Office of Small Business Advocate, and the Office of Trail Staff. Additionally, it shall be posted on the Commission's website and shall be made available to all other interested parties.

BY THE COMMISSION,



James J. McNulty
Secretary

(SEAL)

ORDER ADOPTED: June 10, 1999

ORDER ENTERED: JUN 11 1999