PUC-77

PENNSYLVANIA PUBLIC UTILITY COMMISSION
Uniform Cover and Calendar Sheet

1. **REPORT DATE:**
May 30, 2000

2. **BUREAU AGENDA NO.:**
JUNE-2000-FUS1396 *

3. **BUREAU:** Fixed Utility Services

4. **SECTION(S):** Finance & Tariffs

5. **PUBLIC MEETING DATE:**
June 8, 2000

6. **APPROVED BY:**
Director: Rosenthal 3-5242
Manager: Wilson 3-6162 BW
Legal Review by: Moury 2-8883 KOM

7. **PERSONS IN CHARGE:**
Smith/Glunz/Marino 2-2151 aem

8. **DOCKET NO.: M-00960890 F0015**

9. **(a) CAPTION (abbreviate if more than 4 lines)**
(b) Short summary of history & facts, documents & briefs
(c) Recommendation

(a) Standards for Electronic Data Transfer and Exchange Between Electric Distribution Companies and Electric Generation Suppliers.

(b) To meet requirements relating to the use of an Internet protocol for electronic data interchange (EDI), the Electronic Data Exchange Working Group (EDEWG) prepared an Internet EDI Plan, which addresses the implementation, testing, and certification practices for the transfer of EDI transactions over the Internet.

(c) The Bureau of Fixed Utility Services recommends that the Commission adopt the draft Order seeking comments regarding the reasonableness of the practices set forth in the document "Internet EDI Plan."

10. **MOTION BY: Commissioner** Chm. Quain

SECONDED: Commissioner Bloom

Commissioner Brownell - Yes
Commissioner Wilson - Yes
Commissioner Fitzpatrick - Yes

CONTENT OF MOTION: Staff recommendation adopted.

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA PUBLIC UTILITY COMMISSION
P.O. BOX 3265, HARRISBURG, PA 17105-3265

IN REPLY PLEASE
REFER TO OUR FILE
M-00960890F0015

JUNE 8, 2000

JURISDICTIONAL ELECTRIC DISTRIBUTION COMPANIES,
LICENSED ELECTRIC GENERATION SUPPLIERS:

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

To Whom It May Concern:

This is to advise you that the Commission in Public Meeting on June 8, 2000 in the above-entitled proceeding has adopted an Order.

An Order has been enclosed for your records.

Very truly yours,

James J. McNulty,
Secretary

smk
Enclosure

PENNSYLVANIA
PUBLIC UTILITY COMMISSION
Harrisburg, PA. 17105-3265

Public Meeting held June 8, 2000

Commissioners Present:

John M. Quain, Chairman
Robert K. Bloom, Vice Chairman
Nora Mead Brownell
Aaron Wilson, Jr.
Terrance J. Fitzpatrick

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

Docket Number:
M-00960890, F.0015

ORDER

BY THE COMMISSION:

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) in the transfer and exchange of electronic data relating to customer information. By Orders adopted on June 18, 1998, August 13, 1998, September 17, 1998, November 4, 1998, February 11, 1999, March 18, 1999, June 10, 1999, October 15, 1999, and April 14, 2000, the Commission approved numerous standards submitted by EDEWG governing the electronic exchange of data.

By Order entered October 15, 1999, the Commission directed all EDCs and licensed EGSs to implement Internet EDI exchanges no later than June 30, 2000. In this Order, EDCs were required to select by December 31, 1999, either the Gas Industry Standards Board Electronic Data Delivery Mechanism (GISB EDM), the EDIINT AS1 standard or the EDIINT AS2 standard as their Internet protocol for the transmission of EDI data. All EDCs reported to this Commission that they would implement the GISB EDM Internet protocol, and a few EDCs indicated their intent to eventually migrate to EDIINT AS2 when it becomes available.

To respond to these requirements, the EDEWG formed an Internet EDI Subgroup in December 1999 to address the migration of EDI from the Value Added Network (VAN) to the Internet. This Subgroup also reviewed the GISB EDM Standard v1.4 and discovered a need for specific guidelines pertaining to implementation, testing, and certification. On May 25, 2000, the Subgroup submitted the attached Internet EDI Plan to the EDEWG, which adopted it and submitted it to the Commission for final approval prior to implementation. This Commission commends the members of the Internet Subgroup and extends our appreciation to them for developing a uniform approach for the exchange of EDI over the Internet.

Before the Internet EDI Plan is approved or implemented, we are seeking comments regarding the reasonableness of the practices set forth. Specifically, this Commission has not previously addressed the method for payment of VAN charges to a trading partner by a non-compliant party. To facilitate the non-Internet party picking up all VAN charges (pursuant to Order entered October 15, 1999), the Subgroup recommends that parties that do not implement Internet EDI are required to maintain a VAN mailbox on their trading partner's VAN. (See

Additional EDEWG Assumptions No. 21) We are interested in comments on this specific method and all other assumptions and practices addressed by the Internet EDI Plan. In view of the June 30, 2000 deadline for implementation, we encourage interested parties to submit written comments no later than June 15, 2000; **THEREFORE,**

IT IS ORDERED:

1. That this Order along with the Internet EDI Plan be issued to the public for comment.

2. That a comment period ending on June 15, 2000 is hereby established.

3. That written comments, an original and 15 copies, shall be submitted to the Secretary, Pennsylvania Public Utility Commission, P. O. Box 3265, Harrisburg, PA 17105-3265. No reply comments will be permitted. Comments should specifically reference the above-captioned docket number.

4. 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 Trial Staff. Additionally, it shall be posted on the Commission's website and shall be made available to all other interested parties.

5. That a final Order shall be issued following the receipt and evaluation of comments filed in accordance with this Order.

BY THE COMMISSION,

James J. McNulty

James J. McNulty
Secretary

(SEAL)

ORDER ADOPTED: June 8, 2000

ORDER ENTERED: JUN - 8 2000

Attachment

INTERNET EDI PLAN

Pennsylvania Electronic Data Exchange Working Group (EDEWG)

Version 1.0
May, 2000

Executive Summary

This document defines the business processes and rules that will be followed by participants in the deregulated Electric marketplace in Pennsylvania, as defined by EDEWG.
This document does NOT supercede any PUC orders or Utility settlements.

Document History

Date/Version	**Summary of Changes**
May 18th, 2000 Version 1.0	• Version 1.0 finalized on EDEWG teleconference • Removed 'Final Draft' Indicator • Inserted page numbers • Inserted this Document History section

High-level Summary of PUC Internet EDI Orders

1. Acceptable EDEWG Internet EDI platforms are GISB, EDIINT AS1, and EDIINT AS2.
2. Any party that does not implement an EDEWG Internet EDI solution is responsible for its trading partners VAN charges.
3. Where trading partners have implemented two different acceptable Internet EDI platforms that are not compatible, the parties will continue to split VAN charges.
4. All Utilities were required to state their Internet EDI platform by 12/31/1999, and to implement Internet EDI by 7/1/2000.
5. All Suppliers are required to implement Internet EDI by 7/1/2000.

Additional EDEWG Assumptions

1. Some Utilities will require trading partner agreements, however all Utilities will allow Internet EDI exchanges prior to a trading partner agreement being signed. EDEWG is considering a date by which parties must complete a trading partner agreement.
2. Utilities will notify current trading partner Suppliers of the availability of testing, and the method to schedule testing. If Suppliers are not ready to test when the Utility schedules them to test, the Supplier risks paying VAN charges.
3. All Utilities and Suppliers will complete internal tests of their Internet EDI systems, including the tests defined in Appendix A.
4. All Utilities are recommended to host daily teleconferences with the Suppliers in testing. At a minimum, feedback from the EDC to the supplier regarding testing feedback is required.

5. Internet EDI exchanges will follow rules for exchanging EDI data as defined in the sections of the GISB EDM Version 1.4 outlined in Appendix B, unless explicitly stated in this document.
6. Each party is required to send transactions according to timelines identified in Section 3L of the EDEWG Revised Plan. A back office failure (e.g. an FTP from the mainframe to the GISB server fails) does not change this requirement.
7. If a trading partner's Internet EDI solution is not functioning for 5 consecutive business days, they could be responsible for putting in a VAN solution and paying all VAN charges. Differences that cannot be resolved between trading partners shall be presented to the PA PUC for resolution.
8. All trading partners are encouraged to resolve Internet EDI problems with their trading partners. A dispute is a problem where the two trading partners cannot agree on who is responsible for the problem and/or how to fix the problem. Any unresolved disputes over Internet EDI performance and liability for VAN charges will be presented to the PUC for resolution.
9. During the first 30 calendar days of production usage of the Internet EDI protocol with each new partner, any VAN charges that are incurred while resolving Internet connection, transmission, or encryption problems will continue to be split.
10. All EDEWG transactions are to be treated as confidential, and must be encrypted when sent across the Internet. Receipt of un-encrypted 'clear-text' transactions should be treated as an exchange failure that needs to be fixed. CLEAR-TEXT EXCHANGE FAILURES SHOULD NOT BE IGNORED! See Appendix B.
11. In Bill-Ready territories where the Utilities support an automatic fail-over to the VAN, the metering agent will not be responsible to extend the document due date as a result of an "exchange failure". Continued exchange failures should not be considered normal business. **SUPPLIERS IN BILL-READY TERRITORIES NEED TO UNDERSTAND THE RISKS ASSOCIATED WITH EXCHANGE FAILURES, AND SHOULD PLAN APPROPRIATELY.**
12. Each party is required by the EDEWG Revised Plan to retain copies of X12-compliant transactions. See the EDEWG Revised Plan for more details.
13. Each party should maintain one production URL and one test URL, at a minimum. Rules of use will be patterned after today's use of VAN mailboxes.
14. Parties will continue to send EDI X12 997 functional acknowledgements. The GISB HTTP response only indicates that some file was received at a specified time. It does not verify that the file could be decrypted, and is a valid readable EDI X12 file with regard to content and structure, as does the 997. They serve two separate purposes, and both are used.

15. The same timestamp anchor as currently used for PA Choice EDI transactions will be used for GISB-based exchanges. (Eastern Prevailing Time: EST, utilizing Daylight Savings Time). See Appendix B.
16. GISB encryption depends on the PGP versions used by each trading partner being compatible. The recommendation is to use the most current version (6.5.2), however both parties do not require the same version, as newer versions provide backward-compatibility.
17. The GISB EDM requires the use of the RSA algorithm. See Appendix B.
18. GISB recommends use of 1024-bit public key. See Appendix B.
19. Public keys should be changed annually. Notice should be given to a trading partner when changing keys. It is recommended that regularly scheduled non-emergency public key changes should include a 30-day notice.
20. When trading partners cutover to the Internet, all transactions will be sent via the Internet. Parties can optionally send some transactions via the VAN and others via the Internet if both parties agree.
21. Parties that do not implement Internet EDI are required to maintain a VAN mailbox on their trading partners VAN. This is to facilitate the non-Internet party picking up all VAN charges.
22. Parties that implement AS1 or AS2 will be audited by the PUC for verification that it was implemented. If AS1 or AS2 is proven successfully implemented, and the trading partner cannot exchange with AS1 or AS2, the default will be for the parties to use the VAN, and charges will continue to be split as they are today. If AS1 or AS2 is not implemented as stated, that party will be responsible for all VAN charges
23. Parties recognize that some VAN's perform data manipulation (for example, changing terminators on a inbound document), and that this service goes away when the VAN is no longer used. All parties are encouraged to research whether their VAN is providing this service to them.
24. Parties are required to communicate GISB server maintenance schedules to their trading partners. This could be done via e-mail and/or web server.

Summary of Failures and Fail-over Standards

1. A **protocol failure** occurs any time a sending party's GISB server cannot connect to the receiving party's GISB server. For example, if a server tries to connect to a server and fails, or tries to post a file and fails, this is a protocol failure.
2. An **exchange failure** is when a sending party's GISB server has had continual protocol failures over a two-hour period. Each party is required to try at least 3 times over the two-hour period before flagging an exchange failure.
3. E-Mail will be used to notify partners of protocol and exchange failures. This will assist in rectifying and documenting problems.

4. When a protocol failure occurs, it is recommended that the sending party wait 60 minutes, then retry the GISB transfer. If a second protocol failure occurs, the sending party should wait another 60 minutes, then retry the GISB transfer. For example, the first protocol failure happens at 1:00am, the second happens at 2:00am, and the third happens at 3:00am.
5. Automatic failover systems are not required by this plan. An automatic failover would expedite transactions when there is an exchange failure by routing transactions through the VAN. Some Utilities will support automatic fail-over to VAN's in the case of an exchange failure. A Supplier is not mandated to support automatic fail-over to VAN's.

Example

For example, at 1am my GISB server tries to post a file on your GISB server, but your server is down. I note a protocol failure at 1am. I wait some period of time and try again. If your server is still down, I note another protocol failure. I continue trying (at least 3 times) for two hours. If I still cannot connect after two hours, I note an Exchange failure.

As soon as I note a Protocol failure, I send a Protocol Failure e-mail to your specified GISB administration mailbox. This gives the receiving party a notification that there is a problem and could be used to troubleshoot and fix the problem prior to an exchange failure.

As soon as I note an Exchange failure, I send an Exchange Failure e-mail to your specified GISB administration mailbox. This gives the receiving party a notification that there is a problem, and initiates any manual or automated processes to rectify the problem.

Where supported and agreed by trading partners, an automatic failover process will reroute transactions through the VAN.

EDEWG INTERNET EDI TEST PLAN

Testing Assumptions

1. This abbreviated Internet EDI test is for trading partners that have already completed Level 2 testing with each other over the VAN. THIS TEST PLAN DOES NOT REPLACE THE FULL LEVEL 2 TEST PLAN THAT MUST BE CONDUCTED TO TEST THE BUSINESS PROCESSES BEHIND THE TRANSACTION EXCHANGE.
2. The full test plan for Level 2 certification will be modified to reflect use of the Internet for future Level 2 testing between parties that have not completed Level 2 testing with each other. EDEWG has not yet agreed on the rules for new market entrants regarding their ability to choose which protocol they will use for the test. These will be developed at a later date.
3. Initially, Internet EDI testing will be conducted with existing trading partners; i.e. trading partners who are already trading via the VAN. Only Level 2 certified EGS's are eligible for Internet EDI testing.
4. This test will not include EGS Consolidated billing transaction tests.
5. The Internet EDI will be performed with a sample of one outbound production file per trading partner.
6. Each Utility can define batches to help facilitate testing.
7. Each Utility will communicate to current Supplier trading partners its Internet EDI test plan, any trading partner agreements, and Internet EDI testing batch schedule dates.
8. Each party will provide a contact and an SMTP address to which manual and automated protocol and exchange failure messages are sent.
9. Each Supplier will maintain the pace of the test batch as published by the Utility, or risk being pushed into the next testing batch.
10. Each party may make exceptions or additions to this test plan, however they should be presented to EDEWG prior to 5/15/2000.
11. Each Utility will add Internet EDI items to their FAQ, including URL's, protocol and exchange failure process and contacts, test exceptions.

Testing Goals

1. Establish Internet EDI connectivity between trading partners, including HTTP connections and encryption compatibility.
2. Validate that normal production EDI files can be sent.
3. Validate that X12-compliant transaction data payloads are being delivered after decryption.
4. Validate that HTTP and X12-compliant 997 functional acknowledgements are being delivered.

5. Validate that protocol failures are handled properly.
6. Validate that exchange failures are handled properly.
7. Validate that encryption/decryption failures are handled properly.

Testing Process

1. The Utility will notify the Supplier with the date they will begin testing.
2. The Utility will conduct a kickoff testing discussion. The kickoff discussion should include identification by each party of what production exchanges will be captured and sent for testing. The test should be completed in approximately one week.
3. Each trading partner will identify which files will be/were captured for testing purposes. Each party will modify their production file by changing the ISA information to indicate that this is a test file, including the sender and receiver information, and the ISA13 production/test flag. Each party will indicate how the file will be modified in the initial kickoff meeting and the testing profile.
4. Each party will send these files to the other party through Internet EDI, and notify the testing contact of the trading party that the files were sent.
5. Each trading partner should run these files through their translator to confirm that the files were not corrupted. The files may be processed further, however this is not required
6. Each trading partner will simulate a protocol failure, triggering the appropriate automated notices to the identified trading partner contacts.
7. Each trading partner will simulate an exchange failure, triggering the appropriate automated and manual notices to the identified trading partner contacts.
8. Each trading partner will simulate an encryption/decryption failure, triggering the appropriate automated and manual notices to the identified trading partner contacts.
9. Each trading partner will send a formal notice via e-mail to the trading partner when Internet EDI capability is certified, and will copy edewg@puc.paonline.com.

Appendix A – Recommended Internal Tests

This is a list of tests that should be conducted by each party prior to testing with a trading partner.

1. Stress Test – Ability to receive large production files from a trading partner.
2. Failover test -- Test any automated processes triggered by a protocol or exchange failure.

Appendix B – Relevant Sections of the GISB EDM Version 1.4

Based on EDEWG's review of the GISB EDM Version 1.4, the following sections were determined to be relevant and controlling for EDEWG's implementation of GISB:

1. In the Section entitled BUSINESS PROCESS AND PRACTICES, Subsection C. Electronic Delivery Mechanism Related Standards, the Sub-Subsection entitled Standards: Standards 4.3.7 through 4.3.15 inclusive.

2. The Section entitled TECHNICAL IMPLEMENTATION - INTERNET EDI/EDM & BATCH FF/EDM, subject to the following modifications and clarifications:

   2.1 - Ignore all references to "BATCH FF/EDM", "FF/EDM", "deadlines", "pipelines", and "nominations".

   2.2 - In the Data Dictionary For Internet EDI, the Format of the Business Name transaction-set refers to specific 8-character codes which are not relevant for our purposes. The Internet EDI Subgroup will develop a list of relevant codes.

   2.3 - Under the Subsection entitled SENDING TRANSACTIONS, Sub-Subsection entitled Client Specifications, the reference to Central Time (Central Standard / Central Daylight) should be changed to Eastern Time (Eastern Standard / Eastern Daylight).

   2.4 - Under the Subsection entitled RECEIVING TRANSACTIONS, the Sub-Subsection entitled URL/CGI Implementation Guidelines is informational in nature only and has no force and effect. This Sub-Subsection shall not be construed as to impose any requirements on any EDC or EGS.

   2.5 - Under the Subsection entitled RECEIVING TRANSACTIONS, Sub-Subsection entitled Server Specifications, the reference to Central Time (Central Standard / Central Daylight) should be changed to Eastern Time (Eastern Standard / Eastern Daylight).

3. Appendix A
4. Appendix B

The full 3-page assessment regarding the relevancy of the different sections of the GISB EDM Version 1.4 to EDEWG is online at http://choice.imark-it.com/1dot4.htm. The GISB EDM Version 1.4 is available at http://www.gisb.org.

Appendix C – Sample Test Scripts

This appendix includes two sample test scripts submitted by different parties. They are provided for your information, and should not be viewed as required.

Test Script Sample #1

1. Include certificate generation / set-up / expire / gen new / re-import / as part of testing.
2. Include password generation / set-up / expire / gen new / re-import / as part of testing.
3. Include testing of manually-initiated batch browser. This can help debug initial set-up and may be needed for exception processing.

Testing in following sequence makes debugging a lot easier:

1. In the clear text message
2. in the clear EDI message, into translator, 997 back, Flat file inspected
3. in the clear EDI message, into translator, 997 back, Flat file inspected, return HTML message response in the clear
4. Encrypt same EDI message / decrypt / into translator, 997 back, Flat file inspected, return HTML message response encrypted
5. Sign & Encrypt same EDI message / Check signature / decrypt / into translator, 997 back, Flat file inspected, return HTML message response encrypted & Signed
6. Send 5 above with errors in the EDI file Make sure can recon 997 (not garbled) and check in bound HTML response manually
7. Test automated parsing of HTML response codes and notifications sent & application action taken
8. Inspect internal log files to make sure properly recording sequence of events and timestamps
9. Check timestamps and Transaction Id are what was expected
10. Queue multiple files at once to test for race conditions with timestamp granularity

Also test following negative test cases:

1. Bad URL destination
2. Bad User Id
3. Bad password
4. Wrong timezone timestamp

5. Wrong encryption key
6. Bad signature
7. Expired certificate
8. Session timeout waiting for HTML response
9. Processing a negative HTML message response code

Test Script Sample #2

Tests to be conducted after the trading partners (identified as Host and Trading Partner) have exchanged URL, PGP private key, and X12 ISA/GS information. The test sequence can be initiated from either the LDC or ESP, as agreed by the partners.

Test Event and Acceptance Criteria	Completion Date	Status (Pass/Fail)
1.0 Successful transfer of outbound data from Host's translator to Host's GISB EDM server (Optional test, at the discretion of the testing party) 1.1 Back end system successfully places translated outbound X12 data in the outbound directory on the GISB EDM system. *Compare file in outbound directory to file sent from backend system to validate that they are the same.*		
2.0 Successful send of large production X12 file from the Host to the Trading Partner 2.1 Valid X12 test file signed, encrypted, and sent to Trading Partner. *Place the test file in the Host's outbound directory and send the file. Verify with Trading Partner that the file was received and correctly decrypted.* 2.2 Timestamped response received from Trading Partner. *Verify that the file was sent and the timestamp was received.*		
3.0 Successful receipt of upload from a Trading Partner to the Host's GISB EDM server 3.1 X12 file received, decrypted, authenticated, and placed in inbound directory *Look in the Host's inbound directory and verify that the file was received and correctly decrypted.* 3.2 Trading Partner received timestamp with correct status information *Verify with Trading Partner that they received the timestamp.*		
4.0 Successful transfer of inbound data to backend system (Optional test, at the discretion of the testing party) 4.1 Backend successfully retrieves file 4.2 Inbound file successfully run through translator 4.3 Backend system deletes file on GISB EDM system after successful transfer		
5.0 Successful delivery of GISB standard error message to Trading Partner 5.1 Trading Partner sends X12 file with wrong DUNS number in "to" field. *Verify that a timestamp was sent indicating an error in the HTTP header.* 5.2 Trading Partner sends X12 file encrypted with wrong key. *Verify that a GISB standard error file was sent. Contact Trading Partner and verify that they received the error file.*		
6.0 Proper processing of GISB standard error messages received from Trading Partner 6.1 Send file to Trading Partner indicating wrong DUNS number in the "to" field *Verify receipt of a timestamp indicating an error in the HTTP header.* 6.2 Send file encrypted with wrong PGP key to Trading Partner *Encrypt a test file with a key other than the Trading Partner's public key. Send a test file using the bad key. After the test, make sure to replace the Trading Partner's key.* 6.3 Receive error file from Trading Partner indicating decryption failure. *Verify that a GISB standard error file was received.*		