DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. RM95–9–000]

Open Access Same-time Information System and Standards of Conduct; Order Issuing Revised OASIS Standards and Protocols Document

Issued: September 10, 1996.

Before Commissioners: Elizabeth Anne Moler, Chair; Vicky A. Bailey, James J. Hoecker, William L. Massey, and Donald F. Santa, Jr.

As announced in Order No. 889,[1] after consideration of suggested changes advanced by the How Working Group and other interested persons, we are issuing revisions to the standards and formats for OASIS sites prescribed in the OASIS Standards and Protocols document.[2] This action is not intended to prejudge any of the substantive issues raised in the pending requests for rehearing filed in response to Order No. 8890.[3]

Background

In Order No. 889, we stated that it is essential to establish standards and protocols that will ensure that the OASIS presents information in a consistent and uniform manner. However, in Order No. 889 we recognized that the initial standards and formats contained in the Standards and Protocols document are not complete and require further development. Accordingly, we invited the How Working Group—an industry led coalition of diverse interests established by the industry to develop consensus on ''how'' to develop an OASIS—to review the document and report to us on its progress in correcting any deficiencies in the document.[4] We also stated that, after reviewing the additional report we anticipated receiving from the How Working Group (along with comments from any interested person), we would issue a revised Standards and Protocols document as soon as possible thereafter, to allow transmission providers to implement operational Phase I OASIS sites by November 1, 1996. 61 FR at 21738, 21755–56.

As requested, on June 7, 1996, the How Working Group submitted a report presenting its suggested edits to the initial standards and Protocols document. On June 11, 1996, the Commission provided notice that the How Working Group's June 7, 1996 report was available for public review and comment.

The How Working Group continued its efforts to reach consensus and, on July 3, 1996, submitted a report suggesting further changes to the Standards and Protocols document.

On July 5, 1996, the Joint Transmission Service Information Network (JTSIN) filed comments suggesting revisions to the version of the Standards and Protocols document put out for comment on June 11, 1996. On July 19, 1996, Power System Engineering Inc. (PSE) filed comments on this same document.

On July 31, 1996, in response to the JTSIN comments, the How Working Group submitted corrections to its earlier submittal, suggesting further changes to the Standards and Protocols document. These corrections incorporate suggestions made by JTSIN and are endorsed by JTSIN.

The How Working Group requests that he Commission quickly release a revised Standards and Protocols document or grant a delay in the startup date for Phase I OASIA compliance. The How Working Group states that it avoided suggesting more substantive changes to OASIS functionality or design because it was not possible to evaluate changes of this type (and reach consensus) while meeting the Commission's November 1, 1996 startup date for Phase I OASIS implementation.

Discussion

The successive submittals from the How Working Group added further refinements and improvements with each iteration. Our review, therefore, will concentrate on the group's latest iteration, submitted on July 31, 1996.[5] We find that these revisions greatly improve the OASIS Standards and Protocols document that accompanied issuance of Order No. 889, by resolving additional issues and by harmonizing the text to determinations made in Order No. 889. Therefore, with the minor exceptions noted below, we will issue a revised Standards and Protocols document consistent with the How Working Group's recommendations.[6]

Turning to the July 31, 1996 How Working Group report, we find that it has been improved to the extent that it now requires only a few minor revisions. First, in various places in the Standards and Protocols document, we will replace the term ''customer'', used by the How Working Group, with the term ''user'', whenever the group being referenced includes OASIS users who may not be customers.[7]

Second, we have revised the suggested language in § 3.4(d) to match more closely the language in Order No. 889 that requires the Transmission Provider to post information about resales on the same display page, using the same tables, as similar capacity being sold by it.

Third, in § 3.4(h), we have not included the proposed change from ''90 days'' to ''10 days'' because we reserve the issue of whether to revise the retention period for on-line audit log postings for the order we will issue addressing the pending requests for rehearing.

Additionally, we have made several minor edits for clarity or simplicity. Specifically, under § 2.1(c) we have changed ''chose'' to ''choose'' as the present tense better fits this sentence. In § 3.6(b), we deleted ''once again'' as unnecessary. In § 4.1.1(a), we added ''providing'' for clarity. In § 4.2.1(a), we changed ''to'' to ''with''. In the example at the end of § 4.2.1(c), we changed ''time'' to ''endtime'' to agree with the Data Element Dictionary. We made the same change in the example of a query in §§ 4.4.1 and 4.4.2. In § 5.7, we changed ''Buy/Sell'' to ''Purchase'' to better match Order No. 889.

We have also made several nonsubstantive revisions to the Data Element Dictionary for clarity. Specifically, under the definition of ''CUSTOMER–DUNS'' restricted values, we have added ''DUNS''. Under ''DATA–ROWS'' restricted values, we have changed ''Number or numbers'' to ''Positive Number''. Under ''SERVICE—DESCRIPTION'' definition of data element, we have changed ''Inform'' to ''Information''. Under ''STATUS''

[1] Open Access Same-Time Information System and Standards of Conduct, Final Rule, Order No. 889, FERC Stats. & Regs. ¶ 31,037, 61 FR 21737 (May 10, 1996).

[2] This is the short title for Standards and Communication Protocols for Open Access Same-Time Information System (OASIS) and accompanying Data Element Dictionary, 61 FR at 21770–21846, appended to Order No. 889.

[3] We reserve the right to make further modifications to the Standards and Protocols document as necessary to conform to our determinations on rehearing.

[4] 61 FR at 21740–41, 21762. We also directed the How Working Group to attach any comments it received from any interested persons with opposing views.

[5] As this iteration fully addresses JTSIN's comments, includes revisions based on JTSIN's comments, and has been endorsed by JTSIN, we need not separately address JTSIN's comments.

[6] We also are attaching a version of the revised Standards and Protocols document that shows the changes that we are making to the How Working Group's July 31, 1996 report. This attachment is not being published in the Federal Register but is available through the Commission Issuance Posting System (see, *infra,* n.9) and from the Commission's Public Reference Room.

[7] See Standards and Protocols document in the Table of Contents at § 3.6 and in the text at §§ 3.3(c), 3.4(a), 3.4(b), 3.4(e), 3.4(h), 3.5(b), 3.6, 4.2.4.2(2), 4.3, 4.3.2(a), 4.3.3(a), 5.3, 5.6, 5.9(b), and 5.10(a).

restricted values, we have deleted the references to ''reassigned'', ''scheduled'', and ''curtailed'' so that the values match the categories in the definition of data element. Under the Field Format for SELLER–DUNS, we have changed the maximum number of characters to 9 to agree with the maximum number of characters for other DUNS numbers.

Turning to the comments from PSE, a participant in the How Working Group process, its comments were submitted as ''informal comments'' to Staff that, with PSE's approval, were added to the public record in this proceeding.

In their comments, PSE points out that Section I of the Standards and Protocols document, which discusses the purposes of OASIS, does not include customers requesting service through an OASIS. We have modified the language to include this function. The remaining issues raised by PSE, such as OASIS access and registration issues, do not relate solely to the contents of the Standards and Protocols document. Rather, they concern issues that, in our judgment, involve Phase II implementation, which we will consider later, or relate to issues pending on rehearing of Order No. 889.[8]

The revised Standards and Protocols document will be made available at the Commission's Public Reference Room and will be published in the Federal Register. It also will be available through the Commission Issuance Posting System (CIPS), which can be reached by telephone (modem dialup) at 1–800–856–3920.[9] Dialing this number gives the caller a menu, from which the caller can choose CIPS or other menu choices.

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[8] In Order No. 889, see 61 FR at 21741, the Commission discussed its preference for consensus recommendations on technical implementation issues. We encourage future commenters to consider bringing their ideas to the How Working Group for its consideration in the first instance, so that ideas can be screened and improved through peer review, before being addressed by the Commission.

[9] If you encounter problems in accessing CIPS, you may call 202–208–2474 to seek assistance. CIPS also can be accessed via the FedWorld system through dialup modems or over the Internet.

By modem:

Dial 703–321–3339 and logon to the FedWorld system. After logging on to the FedWorld system, choose f. Government and Regulatory and then type: /go FERC.

By Internet:

Option 1

Telnet to: fedworld.gov, Select [1] FedWorld option, Logon to the FedWorld system, Choose f. Government and Regulatory, Type: /go FERC.

Option 2

Point your Web Browser to: http://www.fedworld.gov, Scroll down the page to select FedWorld Telnet Site, Select [1] FedWorld option, Logon to the FedWorld system, Choose f. Government and Regulatory, Type: /go FERC.

Docket No. RM95-9

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FEDERAL ENERGY REGULATORY COMMISSION

STANDARDS

AND

COMMUNICATION PROTOCOLS

FOR

OPEN ACCESS SAME-TIME INFORMATION SYSTEM

(OASIS)

Version 1.1

(September 5, 1996)

The public burden for the development and initial operation of this information requirement is estimated to average 1,879 reporting hours and 418 record keeping hours per public utility. The estimate includes the time required to review and implement the standards, develop the necessary software, search existing data sources, gather and maintain the data, complete and review the information. Send comments regarding this burden estimate or any other aspect of this information requirement, including suggestions for reducing the burden, to each of the following:

Federal Energy Regulatory Commission
Attention: Michael Miller, Information Services Division
888 First Street, N.E.
Washington, DC 20426

Office of Management and Budget
Office of Information and Regulatory Affairs
Attention: Desk Officer for the Federal Energy Regulatory Commission
Washington, DC 20503

You shall not be penalized for failure to respond to this collection of information unless the collection of information displays a valid OMB control number.

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GENERAL INFORMATION

GENERAL INFORMATION

I. Purpose

In Order No. 888 the Commission requires public utilities to provide comparable access to transmission services and transmission system information. Order No. 889 amends the Commission's regulations, by adding 18 CFR Section 37, to require utilities to provide information about the availability of transmission service on an Open Access Same-Time Information System (OASIS). This information will be provided both through displays and through standardized files that users can download to their own computers. Certain information will also be uploaded through standardized forms and files transmitted from Customers' computers to the OASIS. The file uploads will allow customers to request primary transmission service. They also will allow customers to request transmission service for resale and ancillary services. The regulations require public utilities to comply with standardized procedures and communication protocols governing the means by which the information is made available. This document contains the standardized data sets that show the information that must be provided, standard operating procedures and the protocols for communication of that information.

II. Who Must Comply

All jurisdictional public utilities that are required to maintain an OASIS under Part 37 of the Commission's regulations must comply with these standards and communication protocols.

III. Implementation Date

Utilities must implement these standards and protocols by November 1, 1996.

IV. Development Of The Standards And Communication Protocols

The standards and communication protocols were developed by the electric utility industry through a working group facilitated by the Electric Power Research Institute. This working group included representatives from all major segments of the electric utility industry, such as utilities and marketers, as well as other interested parties such as computer and software firms. The standards and communication protocols represent a broad agreement of the working group.

As the industry obtains experience with OASIS and the new operating environment created by Order No. 888, the standards and communication protocols will need to be revised. The Commission has requested the industry to continue to develop standards and identify necessary changes. The Commission will provide all interested parties with notice and an opportunity for comment on proposed changes to this document.

V. OASIS STANDARDS AND COMMUNICATION PROTOCOLS

1. INTRODUCTION

1.1 DEFINITION OF TERMS

The following definitions are offered to clarify discussions of the OASIS in this document.

a. **Transmission Services Information (TS Information)** is transmission and ancillary services information that must be made available by public utilities on a non-discriminatory basis to meet the regulatory requirements of transmission open access.

b. **Open Access Same-Time Information System (OASIS)** comprises the computer systems and associated communications facilities that public utilities are required to provide for the purpose of making available to all transmission users comparable interactions with TS Information.

c. **Open Access Same-Time Information System Node (OASIS Node)** is a subsystem of the OASIS. It is one computer system in the (OASIS) that provides access to TS Information to a Transmission Customer.

d. **Transmission Provider (TP or Primary Provider)** is the public utility (or its designated agent) that owns, operates or controls facilities used for the transmission of electric energy in interstate commerce. (This is the same term as is used in Part 35.3).

e. **Transmission Customer (TC or Customer)** is any eligible Customer (or its designated agent) that can or does execute a transmission service agreement or can or does receive transmission service. (This is the same term as is used in Part 35.3).

f. **Secondary Transmission Provider (ST, Reseller, or Secondary Provider)** is any Customer who offers to sell transmission capacity it has purchased. (This is the same as Reseller in Part 37).

g. **Transmission Services Information Provider (TSIP)** is a Transmission Provider or an agent to whom the Transmission Provider has delegated the responsibility of meeting any of the requirements of Part 37. (This is the same as Responsible Party in Part 37).

h. **Value-Added Transmission Services Information Provider (VTSIP)** is an entity who uses TS Information in the same manner as a Customer and provides value-added information services to its Customers.

2. NETWORK ARCHITECTURE REQUIREMENTS

2.1 ARCHITECTURE OF OASIS NODES

a. **Permit Use of Any OASIS Node Computers:** TSIPs shall be permitted to use any computer systems as an OASIS Node, so long as they meet the OASIS requirements.

b. **Permit Use of Any Customer Computers:** OASIS Nodes shall permit the use by Customers of any commonly available computer systems, as long as they support the required communication links to the Internet.

c. **Permit the Offering of Value-Added Services:** TSIPs are required, upon request, to provide their Customers the use of private network connections on a cost recovery basis. Additional services which are beyond the scope of the minimum OASIS requirements are also permitted. When provided, these private connections and additional services shall be offered on a fair and non-discriminatory basis to all Customers who might choose to use these services.

d. **Permit Use of Existing Communications Facilities:** In implementing the OASIS, the use of existing communications facilities shall be permitted. The use of OASIS communication facilities for the exchange of information beyond that required for open transmission access (e.g., transfer of system security or operations data between regional control centers) shall also be permitted, provided that such use does not negatively impact the exchange of open transmission access data and is consistent with the Standards of Conduct in Part 37.

e. **Single or Multiple Providers per Node:** An OASIS Node may support a single individual Primary Provider (plus any Secondary Providers) or may support many Primary Providers.

2.2 INTERNET-BASED OASIS NETWORK

a. **Internet Compatibility:** All OASIS Nodes shall support the use of internet tools, internet directory services, and internet communication protocols necessary to support the Information Access requirements stated in Section 4.

b. **Connection through the Public Internet:** Connection of OASIS Nodes to the public Internet is required so that Users may access them through Internet links. This connection shall be made through a firewall to improve security.

c. **Connection to a Private Internet Network:** OASIS Nodes shall support private connections to any OASIS User (User) who requests such a connection. The TSIP is permitted to charge the User, based on cost, for these connections. The same internet tools shall be required for these private networks as are required for the public

Internet. Private connections must be provided to all users on a fair and nondiscriminatory basis.

d. **Internet Communications Channel:** The OASIS Nodes shall utilize a communication channel to the Internet which is adequate to support the performance requirements given the number of Users subscribed to the Providers on the Node (see section 5.3).

2.3 COMMUNICATION STANDARDS REQUIRED

a. **Point-to-Point Protocol (PPP) and Internet Protocol Control Protocol (IPCP)** (reference RFCs 1331 and 1332) shall be supported for private internet network dial-up connections.

b. **Serial Line Internet Protocol (SLIP)** (reference RFC 1055) shall be supported for private internet network dial-up connections.

c. **Transport Control Protocol and Internet Protocol (TCP/IP)** shall be the only protocol set used between OASIS Nodes whenever they are directly interconnected, or for Users using private leased line internet network connections.

d. **Hyper Text Transport Protocol (HTTP)** shall be supported on the OASIS Node so that Users can use it to select information for viewing displays and for downloading and uploading files electronically.

e. **Internet Protocol Address:** All OASIS Nodes are required to use an IP address registered with the Internet Network Information Center (InterNIC), even if private connections are used.

2.4 INTERNET TOOL REQUIREMENTS

Support for the following specific internet tools is required, both for use over the public Internet as well as for any private connections between Users and OASIS Nodes:

a. **Hypertext Markup Language (HTML),** at least version 3, and optionally Secure Sockets Layer (SSL), shall be used by TSIPs as a standard tool for presenting information to Users.

b. **HTML Forms** shall be provided by the TSIPs to allow Customers to enter information to the OASIS Node.

c. **Domain Name Service (DNS)** (ref. RFC 1034, 1035) shall be provided as a minimum by the TSIPs (or their Internet Service Provider) for the resolution of IP addresses to allow Users to navigate easily between OASIS Nodes.

d. **Simple Network Management Protocol (SNMP)** is recommended but not required to provide tools for operating and managing the network, if private interconnections between OASIS Nodes are established.

e. **The Primary Provider shall support E-mail** for exchanges with Customers, including the sending of attachments. The protocols supported shall include, as a minimum, the Simple Messaging Transfer Protocol (SMTP), Post Office Protocol (POP), and Multipurpose Internet Mail Extensions (MIME).

2.5 NAVIGATION AND INTERCONNECTIVITY BETWEEN OASIS NODES

a. **World Wide Web Browsers:** TSIPs shall permit Users to navigate using WWW browsers for accessing different sets of TS Information from one Provider, or for getting to TS Information from different Providers on the same OASIS Node. These navigation methods shall not favor User access to any Provider over another Provider, including Secondary Providers.

b. **Internet Interconnection across OASIS Nodes:** Navigation tools shall not only support navigation within the TSIP's Node, but also across interconnected OASIS Nodes. This navigation capability across interconnected Nodes shall, as a minimum, be possible through the public Internet.

3. INFORMATION ACCESS REQUIREMENTS

3.1 REGISTRATION AND LOGIN REQUIREMENTS

a. **Location of Providers:** To provide Users with the information necessary to access the desired Provider, all Primary Providers shall register their OASIS Node URL address with www.tsin.com. This URL address should include the unique four letter acronym the Primary Provider will use as the PRIMARY_PROVIDER_CODE.

b. **Initial User Registration:** TSIPs shall require Users to register with a Primary Provider before they are permitted to access the Provider's TS Information. There must be a reference pointing to registration procedures on each Primary Provider's home page. Registration procedures may vary with the administrative requirements of each Primary Provider.

c. **Initial Access Privileges:** Initial registration shall permit a User only the minimum Access Privileges. A User and a Primary Provider shall mutually determine what access privilege the User is permitted: the TSIP shall set a User's Access Privilege as authorized by the Primary Provider.

d. **User Login:** After registration, Users shall be required to login every time they establish a dial-up connection. If a direct, permanent connection has been established,

Users shall be required to login initially or any time the connection is lost. Use of alternative forms of login and authentication using certificates and public key standards is acceptable.

e. **User Logout:** Users shall be automatically logged out any time they are disconnected. Users may logout voluntarily.

3.2 SERVICE LEVEL AGREEMENTS

Service Level Agreements: It is recognized that Users will have different requirements for frequency of access, performance, etc., based on their unique business needs. To accommodate these differing requirements, TSIPs shall be required to establish a "Service Level Agreement" with each User which specifies the terms and conditions for access to the information posted by the Providers. The default Service Level Agreement shall be Internet access with the OASIS Node meeting all minimum performance requirements.

3.3 ACCESS TO INFORMATION

a. **Display:** TSIPs shall format all TS Information in HTML 3.0 format such that it may be viewed and read directly by Users without requiring them to download it. This information shall be in clear English as much as possible, with the definitions of any mnemonics or abbreviations available on-line. The minimum information that is to be displayed is provided in the templates in Section 4.3.

b. **Read-Only Access to TS Information:** For security reasons, Users shall have read-only access to the TS Information. They shall not be permitted to enter any information except where explicitly allowed, such as HTML transaction request forms or by the templates in Section 4.3.

c. **Downloading Capability:** Users shall be able to download from an OASIS Node the TS Information in electronic format as a file. The rules for formatting of this data are described in Section 4.2.

d. **On-Line Data Entry on Forms:** Customers shall be permitted to fill out on-line the HTML forms supplied by the TSIPs, for requesting the purchase of services and for posting of products for sale (by Customers who are resellers). Customers shall also be permitted to fill-out and post Want-Ads.

e. **Uploading Capability:** Customers shall be able to upload to OASIS Nodes the filled-out forms. TSIPs shall ensure that these uploaded forms are handled identically to forms filled out on-line. TSIPs shall provide forms that support the "file" input type available in HTML 3.0. This capability shall permit a Customer to upload a file (or

files) using standard Web browsers by providing an input space to specify a file stored on the Customer's hard disk.

f. **Selection of TS Information:** Users shall be able to dynamically select the TS Information they want to view and/or download. This selection shall be, as a minimum, through navigation to text displays, the use of pull-down menus to select information for display, data entry into forms for initiating queries, and the selection of files to download via menus.

3.4 PROVIDER UPDATING REQUIREMENTS

The following are the Provider update requirements:

a. **Provider Posting of TS Information**: Each Provider (including Secondary Providers and Value-Added Providers) shall be responsible for writing (posting) and updating TS Information on their OASIS node. No User shall be permitted to modify a Provider's Information.

b. **OASIS Node Space for Secondary Provider**: To permit Users to readily find TS Information for the transmission systems that they are interested in, TSIPs shall provide database space on their OASIS Node for all Secondary Providers who have purchased, and who request to resell, transmission access rights for the power systems of the Primary Providers supported by that Node.

c. **Secondary Provider Posting to Primary Provider Node**: The Secondary Providers shall post the relevant TS Information on the OASIS Node associated with each Primary Provider from whom the transmission access rights were originally purchased.

d. **Secondary Provider Posting Capabilities**: The TSIPs shall ensure that the Secondary Providers shall be able to post their TS Information to the appropriate OASIS Nodes using the same tools and capabilities as the Customers, meet the same performance criteria as the Primary Providers, and allow users to view these postings on the same display page, using the same tables, as similar capacity being sold by the Primary Providers.

e. **Free-Form Posting of non-TS Information**: The TSIP shall ensure that non-TS Information, such as Want-Ads, may be posted by Providers and Customers, and that this information is easily accessible by all Users. The TSIP shall be allowed to limit the volume and/or to charge for the posting of non-TS Information.

f. **Time Stamps**: All TS Information shall be associated with a time stamp to show when it was posted to the OASIS Node.

g. **Transaction Tracking by an Assignment Reference Number**: All requests for purchase of transmission or ancillary services will be marked by a unique accounting number, called an assignment reference.

h. **Time-Stamped OASIS Audit Log**: All posting of TS Information, all updating of TS Information, all User logins and disconnects, all User download requests, all Service Requests, and all other transactions shall be time stamped and stored in an OASIS Audit Log. This OASIS Audit Log shall be the official record of interactions, and shall be maintained on-line for download for at least 90 days. Changes in the values of posted Capacity (Available Transfer Capability) must be stored in the on-line Audit Log for 90 days. Audit records must be maintained for 3 years off-line and available in electronic form within seven days of a Customer request.

i. **Studies:** A summary description with dates, and programs used of all transmission studies used to prepare data for the Primary Provider's ATC and TTC calculation will be provided along with information as to how to obtain the study data and results.

3.5 ACCESS TO CHANGED INFORMATION

a. **General Message & Log:** TSIPs shall post a general message and log that may be read by Users. The message shall state that the Provider has updated some information, and shall contain (or point to) a reverse chronological log of those changes. This log may be the same as the Audit Log. The User may use the manual capability to see the message.

b. **TSIP Notification Design Responsibilities:** The TSIP shall avoid a design that could cause serious performance problems by necessitating frequent requests for information from many Users.

3.6 USER INTERACTION WITH AN OASIS NODE

There are three basic types of User interactions which must be supported by the OASIS Node. These interactions are defined in Section 4.3.

a. **Query/Response:** The simplest level of interactions is the query of posted information and the corresponding response. The User may determine the scope of the information queried by specifying values, through a HTML form, a URL or an uploaded file, using Query Variables and their associated input values as defined with each template in Section 4.3. The response will be either a HTML display or a record oriented file, depending on the output format that the User requests.

The TSIP may establish procedures to restrict the size of the response, if an overly broad query could result in a response which degrades the overall performance of the OASIS Node for their Users.

b. **Purchase Request:** The second type of Customer interaction is the submittal of a request to purchase a service. The Customer completes an input form, a URL string or uploads a file and submits it to the OASIS Node. The uploaded file can either be a series of query variables or a record oriented file.

The request is processed by the Seller of the service, possibly off-line from the OASIS Node, and the status is updated accordingly.

If a purchase request is approved by the Seller, then it must be again confirmed by the Customer. Once the Customer confirms an approved purchase, a reservation for those services is considered to exist, unless later the reservation is reassigned or displaced.

c. **Upload and Modify Postings:** Customers who wish to resell their rights may upload a form, create the appropriate URL or upload a file to post services for sale. A similar process applies to eligible Third Party Sellers of ancillary services. The products are posted by the TSIP. The seller may monitor the status of the services by requesting status information. Similarly the Seller may modify its posted transmission services by submitting a service modification request through a form, a URL query or by uploading a file.

4. INTERFACE REQUIREMENTS

4.1 INFORMATION MODEL CONCEPTS

4.1.1 ASCII-Based Information Model

a. **ASCII-Based OASIS Templates:** For providing information to Users, TSIPs shall use the specified OASIS Templates. These Templates define the information which, as a minimum, must be presented to Users, both in the form of graphical displays and as downloaded files. Users shall be able to request Template information using query-response data flows. The OASIS Templates are described in section 4.3. The Data Element Dictionary, which defines the data elements in the OASIS Templates, is provided in Appendix A.

Additional information may be presented in a display or a file at the discretion of the TSIP. However, no User shall be obligated or expected to recognize or use this additional information. As stated above, although the minimal contents of the displays are precisely defined, the actual graphical display formats of the TS information are beyond the scope of the OASIS requirements.

b. **ASCII-Based OASIS File Structures:** For uploading requests from and downloading information to Users, TSIPs shall use specific file structures that are defined for

OASIS Template information (see section 4.2). These file structures are based on the use of headers which contain the Query Variable information, including the name of the OASIS Template. These headers thus determine the contents and the format of the data that follows.

4.2 OASIS NODE CONVENTIONS AND STRUCTURES

4.2.1 OASIS Node Naming Requirements

The following are the OASIS Node naming requirements:

a. **Node Naming Convention:** In order to provide a consistent method for locating an OASIS Node, the standard Internet naming convention shall be used. All OASIS Node names shall be unique. Each Primary Provider OASIS Node and home directory shall be registered with the OASIS Management Organization at the web site http://www.tsin.com. OASIS Node names shall be stored in a DNS name directory, which shall be accessible by Users as an HTML page.

b. **URL Structure:** The OASIS Node naming conventions shall use standard URL structures.

c. **Primary Provider Node Home Directory:** The home directory name on an OASIS Node shall be "OASIS" to identify that the directory is related to the OASIS. The directory of each Primary Provider shall be listed under the "OASIS" directory:

http://(OASIS Node name)/OASIS/(PRIMARY_PROVIDER_CODE)

A pointer to registration information shall be located on the Primary Provider's home page.

Common Gateway Interface (CGI) scripts shall be located in the directory "data" as follows:

http://(OASIS Node name)/OASIS/ (PRIMARY_PROVIDER_CODE) /data/(cgi script name)?(query variables)

Where:

(OASIS Node name) is the World Wide Web URL address of the OASIS Information Provider.
PRIMARY_PROVIDER_CODE is the 4 character acronym of the primary provider.
(cgi script name) is the template name or other cgi script name as specified by the Information Provider.
(query variables) a list of query variable with their settings.

Example:

To request the hourly schedule template at Primary Provider WXYZ Co.

http://www.wxyz.com/oasis/wxyz/data/schedule ?templ=schedule& ver=1& fmt=data &btime=19960412040000PD &endtime=19960412100000PD& pprov=wxyz ...

4.2.2 Data Element Dictionary

The following are the requirements for the Data Element Dictionary:

a. **Definition of OASIS Information Elements:** All OASIS Information elements shall be defined in the Data Element Dictionary which will be stored in the OASIS Node directory:

http://(OASIS Node Name)/OASIS/(PRIMARY_PROVIDER_CODE)/(datadic.html | datadict.txt).

Where:

datadic.html is the HTML version of the data element dictionary
datadic.txt is the ASCII text version of the data element dictionary

The Data Element Dictionary is defined in Appendix A.

Some local data element names, such as PATH_NAME, may be unique to Primary Provider. Names which must be uniquely identified by a Primary Provider must be listed on-line on the OASIS Node (see LIST template in Section 4.3) The LIST provides Users with valid names for such properties as Path Name, POR, POD, etc.. In posting OASIS information, TSIPs shall use only the names listed in the Data Element Dictionary and/or a LIST of names provided in the OASIS.

4.2.3 General Rules for OASIS Templates

Section 4.3 lists the set of OASIS Templates. These OASIS Templates are intended to be used precisely as shown for download and upload of data. For on-line display, all relevant information must be provided but flexibility is permitted as to how the data are displayed. The construction of the OASIS Templates shall follow the rules described below:

a. **Unique OASIS Template Name:** Each type of OASIS Template shall be identified with a unique name which shall be displayed to the User whenever the OASIS Template is accessed.

b. **Source Information:** Each OASIS Template shall identify the source of its information by including or linking to the name of the Primary Provider, the Secondary Provider, or the Customer who provided the information.

c. **Time Stamp:** Each OASIS Template shall include a time stamp indicating when it was created or last updated.

d. **Column Headings:** OASIS Template column headings shall define the elementary Data Element Dictionary entries for the data values. The order of the column headings shall define the order that the values are uploaded or downloaded. Within a table, the ordering of some column headings may be selected by Users from pull-down menus. For tables with selectable columns, the number of columns displayed or selected for download shall be determined by entry into a specified field.

e. **Rows:** The table rows below the column headings shall represent the data being presented.

f. **Row Wrap:** If the width of tables is larger than can be displayed in readable size on a single screen, the rows shall either wrap on the screen or shall be accessible through horizontal scrolling.

g. **Documentation:** OASIS Information shall be in non-cryptic English, with all mnemonics defined in the Data Element Dictionary or a glossary of terms. TSIPs shall provide on-line descriptions and help screens to assist Users understanding the displayed information. Documentation of all formats, contents, and mnemonics shall be available both as displays and as files which can be downloaded electronically.

- HTML "Hot-Links" or other pointer mechanisms may be provided for column headings in OASIS Templates which permit the User to access documentation describing the meaning, type, and format of the data in the column.
- HTML "Hot-Links" or other pointer mechanisms may be provided for data in the OASIS Templates to explanations, comments, constraints, and other notes.
- In order to meet the "User-Friendly" goal and permit the flexibility of the OASIS to expand to meet new requirements, the OASIS Templates shall be as self-descriptive as possible.

4.2.4 User Request and Response Procedures

There are four methods that a user can request information or upload data from an OASIS Node.

1. **Using prepared HTML Forms** through a web browser at the Primary Provider's Node. This will be the easiest way to obtain information and should be the choice of most casual users and for simple requests. The input format may differ between nodes.

2. **Using URL strings.** This is an extension of a web address that allows a query string to be appended to the web address of the Primary Provider. This method is useful for creating requests manually or requests bookmarked using the HTML forms and then modified.

3. **Uploading a file containing a URL string.** This method allows a user to prepare a file with query variable similar to information contained in a URL string. This is useful for preparing longer requests or uploading data off-line. If the User uses the input query variables as defined in each template the same query can be used between multiple Primary Providers by only changing the Primary Provider's name in the query.

4. **Uploading a file containing ASCII delimitated template records.** This method allows a user to upload data with information contained in a template in record format. Each file contains a header and then one or more records containing additional template information. This format is consistent with the format that a file can be downloaded. This method would only be used for templates where the request section is marked INPUT.

There are two methods for data to be sent by an OASIS node and received by a User in response to a query.

1. **HTML Displays.** If the User requests the response to have the format of "DISPLAY" then the response from the Primary provider's Node will be a web page using the HTML format. This will be the default for requests that are prepared using HTML forms.

2. **Download File.** If the User requests the response to have the format of "DATA" then the response from the Primary Provider will be a set of data in record format with a header, followed by one or more records containing additional template information.

4.2.4.1 User Request or Data Upload Formats

1. Request or Data Upload using HTML forms

The format of the HTML of the displays is left to the Primary Provider and is not standardized. The content of each template of Section 4.3 must be made available through the displays of applicable data for the Primary Provider's node. The HTML forms will consist of fill in blanks, buttons and pull down displays consistent with HTML Version 3. The forms will produce a query string using the get or post methods. If the get method is used, a User can bookmark the query and reuse it. The query variables used in the HTML forms are not standardized and bookmarked queries may not work across different Primary Providers.

2. Request or Data Uploads using URL strings

All Primary Provider nodes will support standard query variables as indicated in the Input section of each template of Section 4.3. If a User sends a request using a URL string as shown in Section 4.2.1 c, to any Primary Provider then the request for information or data upload will be processed.

A request for information, using a URL string, in an OASIS Template to a User site shall be formatted as follows. A set of header query variables:

VERSION=*nn.n*&
TEMPLATE=*(template name)*&
OUTPUT_FORMAT=aaaa&
PRIMARY_PROVIDER=aaaa&
PRIMARY_PROVIDER_DUNS=nnnnnnnnn&

Followed by Query Variables to specify specific template data. Data elements not specified will take on default values. These additional Query Variables shall be prefixed with an ampersand (&), suffixed with an equal sign (=), and followed by the appropriate parameters.

If repeated, specific values are given for a Query Variable, the variable name will be suffixed with a digit starting with "1" and increasing by one for each repeated variable, for example:

&PATH1=ABC-XYZ &PATH2=ABC-RST

3. Request or Data Uploads using file containing a URL string

A file containing a URL string such as shown in 4.2.1 c can be uploaded using methods such as fetch_http. The format of a URL string is identical to that in the previous method, but the data is contained in a file which can be uploaded.

4. **Upload ASCII Delimited Template Records:** Customers and Providers shall be able to upload OASIS Templates in ASCII code with carriage control and line feed and with no other special embedded codes.

Query Variables or Column Headers shall be used to define what data is being uploaded. Each Query Variable shall be followed by an equals sign (=) and the parameters associated with the variable.

Each record shall be separated by a carriage return plus line feed (↵). The fields within a record shall be delimited by a comma (,). Text fields shall be enclosed with double quotes (").

Every ASCII delimited upload file reflecting an input OASIS Template (as opposed to a query file requesting Template information) shall contain the following header records in the indicated order.

VERSION=*nn.n*↵
TEMPLATE=(template name)↵
OUTPUT_FORMAT=*aaaa*↵
PRIMARY_PROVIDER=*aaaaaaaaaaaaaaaaaaaaaaaa*↵
PRIMARY_PROVIDER_DUNS=*nnnnnnnnn*↵
DATA_ROWS=*nnn*↵
COLUMN_HEADERS=*aaaa.....aaaaaa*↵

The DATA_ROWS record contains the number of data records following the COLUMN_HEADERS.

The COLUMN_HEADERS record contains a column for each field that is required in the Template, in the order shown in the Template. The full template element name should be used in the COLUMN_HEADER, enclosed in double quotes (") and separated by a comma (,), see section 4.4 for examples. The Template information then follows as records which correspond one-to-one with the column headings.

Data Compression: Data compression of large uploaded files shall be supported, using ZIP compression methods.

Default User Directory: The default User directory for upload of files shall be /OASIS/(PRIMARY_PROVIDER_CODE)/upload
Where: PRIMARY_PROVIDER_CODE is the 4 character acronym of the Primary Provider.

Examples of these request and responses are shown in Section 4.4.

4.2.4.2 Response File Format and Procedures

1. HTML Displays

The format of the HTML displays are left to the Primary Provider. The content of the displays must have as a minimum the information contained in the templates of Section 4.3.

2. Downloaded Data Files

The response to a request for the download of Template information into a file at the User site shall conform to the following rules:

a. Download ASCII Delimited Files: Users shall always be able to download all OASIS Template information in ASCII with no special embedded codes, other than carriage control and line feed.

Query Variables shall be used to define what data is being downloaded. Each Query Variable (containing the response to the query) shall be followed by an equal sign (=) and the parameters associated with the variable.

Each downloaded record shall be separated by a carriage return plus line feed (↵). The fields within a record shall be delimited by a comma (,). Text fields shall be enclosed with double quotes (").

b. Data Compression: Data compression of downloadable files shall be supported, at least for static files, using ZIP compression methods.

c. Non-ASCII Formats: Formats in addition to ASCII may be used (at the TSIP's option). If formats other than ASCII are available for downloading or uploading specific data elements, these formats shall be indicated in the Data Element Dictionary for those data elements.

d. File Download Header Records:

Every download file for an OASIS Template shall start with the following header records in the indicated order.

REQUEST_STATUS=*nnn*↵
TIME_STAMP=*nnnnnnnnnnnnnnaa*↵
VERSION=*nn.n*↵
TEMPLATE=*nnnnnnnnnnnnnn*↵
OUTPUT_FORMAT=*nnnnnnnnnnnnnn*↵

PRIMARY_PROVIDER=*aaaaaaaaaaaaaaaaaaaaaaaa*↵
PRIMARY_PROVIDER_DUNS=*nnnnnnnnn*↵
DATA_ROWS=*nnn*↵
COLUMN_HEADERS=*aaaa.....aaaaaa*↵

The DATA_ROWS record contains the number of data records following the COLUMN_HEADERS. The COLUMN_HEADERS record contains the template element name for each field that is required in the Template, in the exact order as listed in the Template. Each element name is enclosed in double quotes (") and separated by a comma, (,), see examples in section 4.4.

The Template information then follows as records which correspond one-to-one with the column headings.

4.3 TEMPLATE DESCRIPTIONS

The following OASIS Templates are required as a minimum. The definitions of the data elements are listed in the Data Element Dictionary in Appendix A.

TSIPs must provide a more detailed supplemental definition of the list of Sellers, Paths, Point of Receipt (POR), Point of Delivery (POD), Capacity Types, Ancillary Service Types and Templates on-line, clarifying how the terms are being used (see LIST template). If POR and POD are not used, then Path Name must include directionality.

Many of the Templates represent query-response interactions between the User and the OASIS Node. These interactions are indicated by the "Query" and "Response" section respectively of each template. Some, as noted in their descriptions, are Input information, sent from the User to the OASIS Node.

4.3.1 Template Summary

The following table provides a summary of the process areas, and templates to be used by Users to query information that will be downloaded or to upload information to the Primary Providers. These processes define the minimum set of functions that must be supported by an OASIS Node.

Process Area	Process Name	Template(s)
4.3.2 Query/Response of Posted Services Being Offered	Query/Response Hourly Transmission Capacity Offerings	houroffering

	Query/Response Daily Transmission Capacity Offerings	dayoffering
	Query/Response Monthly Transmission Capacity Offerings	monthoffering
	Query/Response Yearly Transmission Capacity Offerings	yearoffering
	Query/Response Ancillary Service Offerings	ancoffering
4.3.3 Query/Response of Services Information	Query/Response Transmission Services	transserv
4.3.4 Query/Response of Schedules and Curtailments	Query/Response Transmission Schedules	schedule
	Query/Response Curtailments	curtail
4.3.5 Query/Response of Lists of Information	Query/Response List of Sellers, Paths, PORs, PODs, Capacity Types, Ancillary Service Types, Templates	list
4.3.6 Query/Response of Audit Log	Query/Response Audit Log	auditlog
4.3.7 Purchase Transmission Services	Request Purchase of Transmission Services (Input)	transrequest
	Query/Response Status of Transmission Service Request	transstatus
	Seller Approves Purchase (Input)	transsell
	Customer Confirm/Withdraw Purchase of Transmission Service (Input)	transcust
4.3.8 Seller Posting of Transmission Service	Seller Post Transmission Service for Sale (Input)	transpost
	Seller Modify (Remove) Transmission Service for Sale (Input)	transupdate
	Seller Reassign Rights (Input)	transassign
4.3.9 Purchase of Ancillary Service	Request Purchase of Ancillary Service (Input)	ancrequest

	Query/Response Status of Ancillary Service Request	ancstatus
	Seller Approves Purchase of Ancillary Service (Input)	ancsell
	Customer Accept/Withdraw Purchase of Ancillary Service (Input)	anccust
4.3.10 Seller Post Ancillary Service	Seller Post Ancillary Service (Input)	ancpost
	Seller Modify (Remove) Ancillary Service for Sale (Input)	ancupdate
4.3.11 Informal Messages	Post Want Ads (Input)	messagepost
	Query/Response Want Ads	message
	Delete Want Ad (Input)	messagedelete
	Query/Response Standards of Conduct and Personnel Transfers	stdconduct

4.3.2 Query/Response of Posted Services Being Offered

The following five Templates define the minimum information to be posted on services offered for sale. The first four Templates are for transmission services; hourly, daily, monthly and yearly. At a minimum the hourly, daily, monthly and yearly capacity templates must include, for each posted path, the Primary Provider's TTC, firm ATC and non-firm ATC, if provided in the tariff. Additional services may be offered for weekly or seasonal services, at the option of the Primary Provider by adding similar templates. In addition to serving as offers to provide services, the first four Templates also indicate Available Transfer Capability.

a. **Hourly Transmission Capacity Offerings Available for Purchase** (houroffering) is used to provide hourly transmission services that are posted for sale. A User may query information about hourly services available from all sellers.
Template: **houroffering**

1. **Query**

The Query must include the first five fields, shown in Section 4.2.4.1, and any combination of the remaining Query Variables, shown below. BEGTIME and ENDTIME can be used to set a time window of services.
BEGTIME_OF_LAST_UPDATE can be used to specify all services updated since a specific point in time. RETURN_TZ allows a User to set the time zone of the response data.

PATH_NAME (or PATH, PATH1 & PATH2, etc)
SELLER (or SELLER1 & SELLER2, etc)
SELLER_DUNS (or SELDUNS1 & SELDUNS2, etc)
POINT_OF_RECEIPT (or POR, POR1 & POR2, etc)
POINT_OF_DELIVERY (or POD, POD1 & POD2, etc)
CAPACITY_TYPE (or CAPTYPE1 & CAPTYPE2, etc)
BEGTIME (Valid only to the hour)
ENDTIME (Valid only to the hour)
BEGTIME_OF_LAST_UPDATE (only if TIME_OF_LAST_UPDATE is posted by record)
RETURN_TZ

2. **Response**

The response is one or more records showing the requested hourly service information. Note that the Customer will receive as a series of records spanning all the SELLERs, PATH_NAMEs, PORs, PODs, CAPACITY_TYPEs and the HOURs specified in the query. The SALE_REF is a value provided by the SELLER to identify the transmission service product he is selling. All other Template elements are as defined in the Data Element Dictionary.

TIME_OF_LAST_UPDATE
SELLER
SELLER_DUNS
PATH_NAME
POINT_OF_RECEIPT
POINT_OF_DELIVERY
INTERFACE_TYPE
DATE_HOUR
CAPACITY
CAPACITY_TYPE
SALE_REF
PRICE (Price at which service is being offered)
PRICE_UNITS
SELLER_NAME
SELLER_PHONE
SELLER_FAX
SELLER_E-MAIL
SELLER_COMMENTS (Explain discounts and other items here)

b. **Daily Transmission Capacity Offerings Available for Purchase** (dayoffering) is used to provide the daily transmission services that are available for sale. This

Template is identical to the houroffering Template, except the services are offered on a daily basis.

Template: **dayoffering**

1. **Query**

PATH_NAME	(or PATH, PATH1 & PATH2, etc)
SELLER	(or SELLER1 & SELLER2, etc)
SELLER_DUNS	(or SELDUNS1 & SELDUNS2, etc)
POINT_OF_RECEIPT	(or POR, POR1 & POR2, etc)
POINT_OF_DELIVERY	(or POD, POD1 & POD2, etc)
CAPACITY_TYPE	(or CAPTYPE1 & CAPTYPE2, etc)
BEGTIME	(Valid to the day)
ENDTIME	(Valid to the day)
BEGTIME_OF_LAST_UPDATE	(only if TIME_OF_LAST_UPDATE is posted by record)
RETURN_TZ	

2. **Response**

TIME_OF_LAST_UPDATE	
SELLER	
SELLER_DUNS	
PATH_NAME	
POINT_OF_RECEIPT	
POINT_OF_DELIVERY	
INTERFACE_TYPE	
DATE	
CAPACITY	
CAPACITY_TYPE	
SALE_REF	
PRICE	
PRICE_UNITS	
SELLER_NAME	
SELLER_PHONE	
SELLER_FAX	
SELLER_E-MAIL	
SELLER_COMMENTS	(Explain discounts and other terms here)

c. **Monthly Transmission Capacity Offerings Available for Purchase** (monthoffering) is used to provide the monthly transmission services that are available for sale. This Template is identical to the houroffering Template, except the services are offered on a monthly basis.

Template: **monthoffering**

1. **Query**

PATH_NAME	(or PATH, PATH1 & PATH2, etc)
SELLER	(or SELLER1 & SELLER2, etc)
SELLER_DUNS	(or SELDUNS1 & SELDUNS2, etc)
POINT_OF_RECEIPT	(or POR, POR1 & POR2, etc)
POINT_OF_DELIVERY	(or POD, POD1 & POD2, etc)
CAPACITY_TYPE	(or CAPTYPE1 & CAPTYPE2, etc)
BEGTIME	(Valid to the day, only month used)
ENDTIME	(Valid to the day, only month used)
BEGTIME_OF_LAST_UPDATE	
RETURN_TZ	

2. **Response**

TIME_OF_LAST_UPDATE
SELLER
SELLER_DUNS
PATH_NAME
POINT_OF_RECEIPT
POINT_OF_DELIVERY
INTERFACE_TYPE
MONTH
CAPACITY
CAPACITY_TYPE
SALE_REF
PRICE
PRICE_UNITS
SELLER_NAME
SELLER_PHONE
SELLER_FAX
SELLER_E-MAIL
SELLER_COMMENTS (Explain discounts and other terms here)

d. **Yearly Transmission Capacity Offerings Available for Purchase** (yearoffering) is used to provide the yearly transmission services that are available for sale. This Template is identical to the houroffering Template, except the services are offered on a yearly basis. This Template would be used in a case that yearly or seasonal studies had been completed for future years and is optional otherwise.

Template: **yearoffering**

1. **Query**

PATH_NAME	(or PATH, PATH1 & PATH2, etc)
SELLER	(or SELLER1 & SELLER2, etc)
SELLER_DUNS	(or SELDUNS1 & SELDUNS2, etc)
POINT_OF_RECEIPT	(or POR, POR1 & POR2, etc)
POINT_OF_DELIVERY	(or POD, POD1 & POD2, etc)
CAPACITY_TYPE	(or CAPTYPE1 & CAPTYPE2, etc)
BEGTIME	(Valid to the day, only month used)
ENDTIME	(Valid to the day, only month used)
BEGTIME_OF_LAST_UPDATE	
RETURN_TZ	

2. **Response**

TIME_OF_LAST_UPDATE	
SELLER	
SELLER_DUNS	
PATH_NAME	
POINT_OF_RECEIPT	
POINT_OF_DELIVERY	
INTERFACE_TYPE	
MONTH	
CAPACITY	
CAPACITY_TYPE	
SALE_REF	
PRICE	
PRICE_UNITS	
SELLER_NAME	
SELLER_PHONE	
SELLER_FAX	
SELLER_E-MAIL	
SELLER_COMMENTS	(Explain discounts and other terms here)

e. **Ancillary Services Available for Purchase** (ancoffering) is used to provide information regarding the ancillary services that are available for sale by all sellers (both Primary Provider and Third Party Sellers).

In the Query, the first five header fields, shown in Section 4.2.4.1, are required and the others, shown below, may be used to specify the scope of the information to be requested.

Template: **ancoffering**

1. **Query**

SELLER (or SELLER1 & SELLER2, etc)
SELLER_DUNS (or SELDUNS1 & SELDUNS2, etc)
CONTROL_AREA
ANCILLARY_SERVICE_TYPE (or ANCTYPE1 & ANCTYPE2, etc)
BEGTIME (Valid to the hour)
ENDTIME (Valid to the hour)
BEGTIME_OF_LAST_UPDATE
RETURN_TZ

2. **Response**

TIME_OF_LAST_UPDATE
SELLER
SELLER_DUNS
CONTROL_AREA
ANCILLARY_SERVICE_TYPE
SERVICE_DESCRIPTION
BEGDATE_HOUR
ENDDATE_HOUR
SELLER_NAME
SELLER_PHONE
SELLER_FAX
SELLER_E-MAIL
PRICE
PRICE_UNITS
SALE_REF
SELLER_COMMENTS (Explain discounts and other terms here)

4.3.3 Query/Response of Services Information

a. **Transmission Services** (transserv) is used to provide additional information regarding the transmission services CAPACITY_TYPEs that are available for sale by a Provider in the Templates in Section 4.3.2. This Template is used to summarize tariff information for the convenience of the User. Use of this Template is optional.

Template: **transserv**

1. **Query**

CAPACITY_TYPE (or CAPTYPE1 & CAPTYPE2)
BEGTIME_OF_LAST_UPDATE

2. **Response**

TIME_OF_LAST_UPDATE
CAPACITY_TYPE
SERVICE_DESCRIPTION
TARIFF

4.3.4 Query/Response of Schedules and Curtailments

a. **Hourly Schedule** (schedule) is used to show what a Provider's scheduled transmission capacity usage actually was for specific Paths. All the information provided is derived from that in the transmission reservation (see Template transstatus), except CAPACITY_SCHEDULED, which is the amount of the reservation which was scheduled. Posting of the schedules is organized around the transmission reservations, not the energy schedules. This may require the Primary Provider to map schedules back to the reservation. These records would have to be created for all reservations/schedules done off the OASIS during the operations scheduling period.

Template: **schedule**

1. **Query**

PATH_NAME	(or PATH, PATH1 & PATH2, etc)
SELLER	(or SELLER1 & SELLER2, etc)
SELLER_DUNS	(or SELDUNS1 & SELDUNS2, etc)
CUSTOMER	
CUSTOMER_DUNS	
POINT_OF_RECEIPT	(or POR, POR1 & POR2, etc)
POINT_OF_DELIVERY	(or POD, POD1 & POD2, etc)
CAPACITY_TYPE	(or CAPTYPE1 & CAPTYPE2, etc)
BEGTIME	
ENDTIME	
BEGTIME_OF_LAST_UPDATE	
ASSIGNMENT_REF	
RETURN_TZ	

2. **Response**

TIME_OF_LAST_UPDATE
SELLER
SELLER_DUNS
PATH_NAME
POINT_OF_RECEIPT

POINT_OF_DELIVERY
INTERFACE_TYPE
SOURCE
SINK
CUSTOMER
CUSTOMER_DUNS
DATE_HOUR
CAPACITY (reserved)
CAPACITY_SCHEDULED
CAPACITY_TYPE
PRICE
PRICE_UNITS
ASSIGNMENT_REF (Last rights holder)

b. **Curtailment/Interruption** (curtail) provides additional information about the actual curtailment of transmission reservations that have been scheduled for energy exchange. All fields are derived from the reservation except the CAPACITY_CURTAILED, CURTAILMENT_REASON and CURTAILMENT_OPTIONS. These fields provide information on the reasons for the curtailment, procedures to be followed and options for the Customer, if any, to relieve the curtailment.

Template: **curtail**

1. **Query**

PATH_NAME (or PATH, PATH1 & PATH2, etc)
SELLER (or SELLER1 & SELLER2, etc)
SELLER_DUNS (or SELDUNS1 & SELDUNS2, etc)
CUSTOMER
CUSTOMER_DUNS
POINT_OF_RECEIPT (or POR, POR1 & POR2, etc)
POINT_OF_DELIVERY (or POD, POD1 & POD2, etc)
CAPACITY_TYPE (or CAPTYPE1 & CAPTYPE2, etc)
BEGTIME
ENDTIME
BEGTIME_OF_LAST_UPDATE
ASSIGNMENT_REF
RETURN_TZ

2. **Response**

TIME_OF_LAST_UPDATE
SELLER

SELLER_DUNS
PATH_NAME
POINT_OF_RECEIPT
POINT_OF_DELIVERY
CUSTOMER
CUSTOMER_DUNS
BEGTIME (Begin time of curtailment)
ENDTIME (End time of curtailment)
CAPACITY (reserved)
CAPACITY_SCHEDULED
CAPACITY_CURTAILED
CAPACITY_TYPE
CURTAILMENT_REASON
CURTAILMENT_PROCEDURES
CURTAILMENT_OPTIONS
ASSIGNMENT_REF

4.3.5 Query/Response of Lists of Information

a. **List** (list) is used to provide lists of valid names of SELLERs, PATHs, PORs, PODs, CAPACITY_TYPEs, ANCILLARY_SERVICE_TYPEs and TEMPLATEs. These names may be used to query information, post or request services.

Template: **list**

1. **Query**

LIST_NAME (=List of SELLERs, List of PATHs, List of PORs, List of PODs, List of CAPACITY_TYPEs, List of ANCILLARY SERVICE_TYPEs, TEMPLATEs)
BEGTIME_OF_LAST_UPDATE

2. **Response**

TIME_OF_LAST_UPDATE
LIST_NAME
LIST_ITEM
LIST_ITEM_DESCRIPTION

4.3.6 Query/Response to obtain the Audit log

a. **Audit Log Information** (auditlog) is used to provide a means of accessing the required audit information. The TSIP will maintain two types of logs:

1) Log of all changes to posted TS Information, such as CAPACITY. This log will record as a minimum the time of the change, the Template name, the name of the Template data element changed and the old and new values of the Template data element.

2) A complete record of all transaction events, such as those contained in the Templates 4.3.8, 4.3.9 and 4.3.10. For transaction event logs, the response will include: TIME_STAMP, TEMPLATE, ELEMENT_NAME, AND NEW_DATA. In this case the value of OLD_DATA in not applicable.

Template: **auditlog**

1. **Query**

BEGTIME (search against audit log)
ENDTIME (search against audit log)
RETURN_TZ

2. **Response**

ASSIGNMENT_REF or POSTING_REF
TIME_STAMP
TEMPLATE
ELEMENT_NAME (for data elements whose values have changed)
OLD_DATA
NEW_DATA

4.3.7 Purchase Transmission Services

The following Templates shall be used by Customers and Sellers to transact purchases of services.

- The Template (transrequest) shall be used by a customer to enter a request for specific transmission services from a specific Seller.

- The Template (transstatus) shall be used by both Customers and Sellers to monitor the status of their transactions in progress. This Template shall also be used by any Users to review the status of specified transactions. In this case, the identity of the Customers in the transactions which have not been completed shall not be shown. Negotiation of the transactions may take place outside of the OASIS.

- The Template (transsell) shall be used by a Reseller to formally enter the approval or disapproval of a transaction and indicate which rights are to be reassigned. A Primary Provider may, but is not required, to enter transaction approval or disapproval using this Template.

- The Customer shall use the transstatus Template to view the Seller's decision.

- After receiving notification of the transaction being approved by the Seller, the Template (transcust) shall be used by the Customer to formally enter the confirmation or withdrawal of the offer to purchase services.

- The Reseller shall use the transstatus Template to view the Customer's decision.

- For deals consummated off the OASIS, after the Customer has accepted the offering, the Template (transassign) may be used by the Reseller to notify the Primary Provider of the transfer of rights to the Customer.

The TSIP shall assign a unique reference identifier for each Customer request to purchase capacity or services. This identifier will be used to track the request through various stages. This ASSIGNMENT_REF is kept with the service through out its life. Whenever the service is resold, a new ASSIGNMENT_REF number is assigned, but previous ASSIGNMENT_REF numbers are also kept so that a chain of all transactions related to the service can be maintained.

Sellers may aggregate portions of several previous purchases to create a new service, if this capability is provided by the Transmission Services Information Provider. Sellers, including Transmission Providers, can aggregate their posting by using a unique number, SALE_REF.

Customers can track their purchases through unique values that they provide, DEAL_REF and REQUEST_REF.

a. **Customer Capacity Purchase Request** (Input) (transrequest) is used by the Customer to request the purchase of transmission services. The response simply acknowledges that the Customer's request was received by the OASIS Node. It does not imply that the Seller has received the request.

When the request is received at the OASIS Node, the TSIP assigns a unique value to the ASSIGNMENT_REF, which will be used to track all transactions related to this specific transmission service being requested.

Specification of a value YES in the PRECONFIRMED field authorizes the TSIP to automatically change the STATUS field in the transstatus template to CONFIRMED when that request is ACCEPTED by the Seller.

Template: **transrequest**

1. **Input** (Upload template)

SELLER (Primary or Reseller)
SELLER_DUNS
CUSTOMER
CUSTOMER_DUNS
PATH_NAME
POINT_OF_RECEIPT
POINT_OF_DELIVERY
SOURCE
SINK
CAPACITY
CAPACITY_TYPE
SALE_REF
BEGTIME (Valid only hour)
ENDTIME (Valid only hour)
PRICE
PRICE_UNITS
PRECONFIRMED
CUSTOMER_NAME
CUSTOMER_PHONE
CUSTOMER_FAX
CUSTOMER_E-MAIL
REQUEST_REF
DEAL_REF
CUSTOMER_COMMENTS

2. **Response** (acknowledgement)

ASSIGNMENT_REF (assigned by TSIP)
SELLER
SELLER_DUNS
CUSTOMER
CUSTOMER_DUNS
PATH_NAME
POINT_OF_RECEIPT
POINT_OF_DELIVERY
SOURCE
SINK
CAPACITY
CAPACITY_TYPE
SALE_REF

BEGTIME
ENDTIME
PRICE
PRICE_UNITS
PRECONFIRMED
CUSTOMER_NAME
CUSTOMER_PHONE
CUSTOMER_FAX
CUSTOMER_E-MAIL
REQUEST_REF
DEAL_REF
CUSTOMER_COMMENTS

b. **Status of Customer Purchase Request** (transstatus) is provided upon the request of a Customer or a Provider to indicate the current status of one or more transactions.

When a Customer requests this Template with his own name indicated, all active purchase requests for that Customer are provided. Only the authorized Customer is permitted to view this information in this manner. All others will have the customer identification blocked for the first 30 days.

When a Seller requests this Template with his own name indicated, all active requests for purchasing services from that Seller are retrieved.

Other fields, such as SOURCE and SINK, may be masked to comply with FERC regulations and Primary Provider tariff.

If neither a specific Customer's name nor a specific Seller's name is indicated, then the status of all transactions for the requested Path(s) are shown, but with the Customers' names not provided for any uncompleted transactions.

QUEUED =	initial status assigned by TSIP on receipt of "customer capacity purchase request"
RECEIVED=	reassigned by TP to acknowledge QUEUED requests and indicate the service request is being evaluated
STUDY=	assigned by TP to indicate some level of study is required or being performed to evaluate service request
ACCEPTED=	assigned by TP to indicate service request has been approved/accepted
REFUSED=	assigned by TP to indicate service request has been denied, SELLER_COMMENTS should be used to communicate reason for denial of service

CONFIRMED=	assigned by TC in response to TP posting "ACCEPTED" status, to confirm service. Once a request has been "CONFIRMED", a transmission service reservation exits
WITHDRAWN=	assigned by TC at any point in request evaluation to withdraw the request from any further action
DISPLACED=	assigned by TP when a "CONFIRMED" request from a TC is displaced by a longer term request and the TC has exercised right of first refusal (ie. refused to match terms of new request)

Template: **transstatus**

1. **Query**

SELLER	(or SELLER1 & SELLER2, etc)
SELLER_DUNS	(or SELDUNS1 & SELDUNS2, etc)
CUSTOMER	
CUSTOMER_DUNS	
PATH_NAME	(or PATH, PATH1 & PATH2, etc)
POINT_OF_RECEIPT	(or POR, POR1 & POR2, etc)
POINT_OF_DELIVERY	(or POD, POD1 & POD2, etc)
CAPACITY_TYPE	(or CAPTYPE, CAPTYPE1 & CAPTYPE2, etc)
ASSIGNMENT_REF	
REASSIGNED_REF	
SALE_REF	
REQUEST_REF	
DEAL_REF	
STATUS	
BEGTIME	(Beginning time of service)
ENDTIME	
BEGDATE_SEC_QUEUED	(Beginning time queue)
ENDDATE_SEC_QUEUED	
BEGTIME_OF_LAST_UPDATE	
RETURN_TZ	

2. **Response**

TIME_OF_LAST_UPDATE
ASSIGNMENT_REF
SELLER (PRIMARY or RESELLER)
SELLER_DUNS
CUSTOMER
CUSTOMER_DUNS
PATH_NAME

POINT_OF_RECEIPT
POINT_OF_DELIVERY
SOURCE
SINK
CAPACITY (total reservation)
CAPACITY_TYPE
BEGDATE_HOUR
ENDDATE_HOUR
PRICE
PRICE_UNITS
PRECONFIRMED
SALE_REF
REQUEST_REF
DEAL_REF
STATUS= **RECEIVED, QUEUED, STUDY, ACCEPTED, REFUSED, CONFIRMED, WITHDRAWN, DISPLACED**
STATUS_COMMENTS
DATE_SEC_QUEUED
PRIMARY_PROVIDER_COMMENTS
SELLER_COMMENTS
CUSTOMER_COMMENTS
SELLER_NAME
SELLER_PHONE
SELLER_FAX
SELLER_E-MAIL
CUSTOMER_NAME
CUSTOMER_PHONE
CUSTOMER_FAX
CUSTOMER_E-MAIL
REASSIGNED_REF
REASSIGNED_CAPACITY (Capacity from each previous transaction)
REASSIGNED_BEGDATE_HOUR
REASSIGNED_ENDDATE_HOUR

c. **Seller Approval of Purchase (Input-Template Upload)** (transsell) is input by a Seller to modify the status and queue of a request by a Customer. Note there is no response template required, since the seller can view the transstatus template. If preconfirmed then seller can only change values of data elements, STATUS, STATUS_COMMENTS, SELLER_COMMENTS, REASSIGNED_REF,REASSIGNED_BEGDATE_HOUR and REASSIGNED_ENDDATE_HOUR.

Template: **transsell**

1. **Input** (Template Upload)

SELLER (Primary or Reseller)
SELLER_DUNS
CUSTOMER
CUSTOMER_DUNS
PATH_NAME
POINT_OF_RECEIPT
POINT_OF_DELIVERY
SOURCE
SINK
CAPACITY (Total reservation acknowledged)
CAPACITY_TYPE
ASSIGNMENT_REF (Required)
BEGTIME (Valid only to hour)
ENDTIME (Valid only to hour)
SALE_REF
REQUEST_REF
DEAL_REF
PRICE
PRICE_UNITS
STATUS= **Received, Study, Accepted, Refused**
STATUS_COMMENTS
SELLER_COMMENTS
REASSIGNED_REF
REASSIGNED_CAPACITY (Previous capacity to be reassigned)
REASSIGNED_BEGDATE_HOUR
REASSIGNED_ENDDATE_HOUR

d. Customer Confirmation of Purchase (Input) (transcust) is input by the Customer to state his agreement or withdrawal of a purchase after the Seller has indicated that the purchase request is approved. Only the STATUS, STATUS_COMMENTS and CUSTOMER_COMMENTS data elements can be modified in this template.

Template: **transcust**

1. **Input (Upload Template)**

SELLER (Primary or Reseller)
SELLER_DUNS
CUSTOMER
CUSTOMER_DUNS
PATH_NAME
POINT_OF_RECEIPT

POINT_OF_DELIVERY
SOURCE
SINK
CAPACITY
CAPACITY_TYPE
ASSIGNMENT_REF (Required)
BEGTIME (Valid only to hour)
ENDTIME (Valid only to hour)
REQUEST_REF
SALE_REF
DEAL_REF
PRICE
PRICE_UNITS
STATUS= **Confirmed, Withdrawn**
STATUS_COMMENTS
CUSTOMER_COMMENTS

4.3.8 Seller Posting of Transmission Services

Sellers shall use the following templates for providing sell information. They may aggregate portions of several previous purchases to create a new service, if this capability is provided by the Transmission Services Information Provider:

a. **Seller Capacity Posting (Input)** (transpost) shall be used by the Seller to post the transmission capacity for resale on to the OASIS Node.

Template: **transpost**

1. **Input**

SELLER
SELLER_DUNS
PATH_NAME
POINT_OF_RECEIPT
POINT_OF_DELIVERY
INTERFACE_TYPE
BEGTIME (Valid only to hour)
ENDTIME (Valid only to hour)
CAPACITY (Total being posted)
CAPACITY_TYPE
SELLER_COMMENTS
SELLER_NAME
SELLER_PHONE
SELLER_FAX

SELLER_E-MAIL
SALE_REF
PRICE
PRICE_UNITS

2. **Response (Acknowledgement)**

POSTING_REF (Assigned by TSIP)
SELLER
SELLER_DUNS
PATH_NAME
POINT_OF_RECEIPT
POINT_OF_DELIVERY
INTERFACE_TYPE
BEGTIME
ENDTIME
CAPACITY (Total being posted)
CAPACITY_TYPE
SELLER_COMMENTS
SELLER_NAME
SELLER_PHONE
SELLER_FAX
SELLER_E-MAIL
SALE_REF
PRICE
PRICE_UNITS

b. Seller Capacity Modify (Input) (transupdate) shall be used by a Seller to modify a posting of transmission capacity.

Template: **transupdate**

1. **Input** (Template Upload)

SELLER	
SELLER_DUNS	
PATH_NAME	
POINT_OF_RECEIPT	(only if modified)
POINT_OF_DELIVERY	(only if modified)
INTERFACE_TYPE	(only if modified)
POSTING_REF	(Must be provided)
BEGTIME	(only if modified)
ENDTIME	(only if modified)
CAPACITY	(only if modified)

CAPACITY_TYPE	(only if modified)
SELLER_COMMENTS	(only if modified)
SELLER_NAME	(only if modified)
SELLER_PHONE	(only if modified)
SELLER_FAX	(only if modified)
SELLER_E-MAIL	(only if modified)
SALE_REF	
PRICE	(only if modified)
PRICE_UNITS	(only if modified)

2. **Response** (acknowledgement)

SELLER
SELLER_DUNS
PATH_NAME
POINT_OF_RECEIPT
POINT_OF_DELIVERY
INTERFACE_TYPE
POSTING_REF
BEGTIME
ENDTIME
CAPACITY
CAPACITY_TYPE
SELLER_COMMENTS
SELLER_NAME
SELLER_PHONE
SELLER_FAX
SELLER_E-MAIL
SALE_REF
PRICE
PRICE_UNITS

c. **Seller to Reassign Service Rights to Another Customer (Input)** (transassign) is used by the seller to ask the Transmission Services Information Provider to reassign some or all of the seller's rights to Services to another Customer, for seller confirmed transactions that have occurred off the OASIS. The TSIP shall assign a unique ASSIGNMENT_REF in the response (acknowledgement) and enter the status CONFIRMED as viewed in the transstatus template.

Template: **transassign**

1. **Input (Upload Template)**

SELLER (Primary or Reseller)

SELLER_DUNS
CUSTOMER
CUSTOMER_DUNS
PATH_NAME
POINT_OF_RECEIPT
POINT_OF_DELIVERY
SOURCE
SINK
CAPACITY
CAPACITY_TYPE
BEGTIME (Valid only to hour)
ENDTIME (Valid only to hour)
PRICE
PRICE_UNITS
CUSTOMER_NAME
CUSTOMER_PHONE
CUSTOMER_FAX
CUSTOMER_E-MAIL
DATE_SEC_QUEUED
SALE_REF
REASSIGNED_REF
REASSIGNED_CAPACITY (Capacity being sold from each previous assignment)
REASSIGNED_BEGDATE_HOUR
REASSIGNED_ENDDATE_HOUR
SELLER_COMMENTS

2. **Response (acknowledgement)**

ASSIGNMENT_REF (assigned by information provider)
SELLER (Primary or Reseller)
SELLER_DUNS
CUSTOMER
CUSTOMER_DUNS
PATH_NAME
POINT_OF_RECEIPT
POINT_OF_DELIVERY
SOURCE
SINK
CAPACITY (Total capacity being reassigned)
CAPACITY_TYPE
BEGTIME
ENDTIME
PRICE

PRICE_UNITS
CUSTOMER_NAME
CUSTOMER_PHONE
CUSTOMER_FAX
CUSTOMER_E-MAIL
DATE_SEC_QUEUED
SALE_REF
REASSIGNED_REF
REASSIGNED_CAPACITY (Capacity being sold from each previous assignment)
REASSIGNED_BEGDATE_HOUR
REASSIGNED_ENDDATE_HOUR
SELLER_COMMENTS

4.3.9 Purchase of Ancillary Services

a. **Customer Requests to Purchase Ancillary Services** (ancrequest) (Input, Template Upload) is used by the customer to purchase ancillary services that have been posted by a seller of those services.

1. **Input (Template Upload)**

Template: **ancrequest**

SELLER (or SELLER1 & SELLER2, etc)
SELLER_DUNS (or SELDUNS1 & SELDUNS2, etc)
CUSTOMER
CUSTOMER_DUNS
CONTROL_AREA
ANCILLARY_SERVICE_TYPE
SERVICE_DESCRIPTION
BEGTIME (Valid to the hour)
ENDTIME (Valid to the hour)
PRICE
PRICE_UNITS
PRECONFIRMED
CUSTOMER_NAME
CUSTOMER_PHONE
CUSTOMER_FAX
CUSTOMER_E-MAIL
CUSTOMER_COMMENTS
SALE_REF
DEAL_REF
REQUEST_REF

2. **Response** (acknowledgement)

ASSIGNMENT_REF (assigned by TSIP)
SELLER
SELLER_DUNS
CUSTOMER
CUSTOMER_DUNS
CONTROL_AREA
ANCILLARY_SERVICE_TYPE
SERVICE_DESCRIPTION
BEGTIME (Valid to the hour)
ENDTIME (Valid to the hour)
PRICE
PRICE_UNITS
PRECONFIRMED
CUSTOMER_NAME
CUSTOMER_PHONE
CUSTOMER_FAX
CUSTOMER_E-MAIL
CUSTOMER_COMMENTS
SALE_REF
DEAL_REF
REQUEST_REF

b. **Ancillary Services Status** (ancstatus) is used to provide the status of purchase requests regarding the ancillary services that are available for sale by all Service Providers.

Template: **ancstatus**

1. **Query**

SELLER (or SELLER1 & SELLER2, etc)
SELLER_DUNS (or SELDUNS1 & SELDUNS2, etc)
CUSTOMER
CUSTOMER_DUNS
CONTROL_AREA
ANCILLARY_SERVICE_TYPE
BEGTIME (Valid to the hour)
ENDTIME (Valid to the hour)
BEGDATE_SEC_QUEUED
ENDDATE_SEC_QUEUED
BEGTIME_OF_LAST_UPDATE (only if TIME_OF_LAST_UPDATE is posted by record)

ASSIGNMENT_REF
REASSIGNED_REF
SALE_REF
DEAL_REF
REQUEST_REF
STATUS
RETURN_TZ

2. **Response**

TIME_OF_LAST_UPDATE
SELLER
SELLER_DUNS
CUSTOMER
CUSTOMER_DUNS
CONTROL_AREA
ANCILLARY_SERVICE_TYPE
SERVICE_DESCRIPTION
BEGDATE_HOUR
ENDDATE_HOUR
SELLER_NAME
SELLER_PHONE
SELLER_FAX
SELLER_E-MAIL
CUSTOMER_NAME
CUSTOMER_PHONE
CUSTOMER_FAX
CUSTOMER_E-MAIL
PRICE
PRICE_UNITS
PRECONFIRMED
STATUS= **QUEUED, RECEIVED, ACCEPTED, REFUSED, CONFIRMED, WITHDRAWN**
STATUS_COMMENTS
SELLER_COMMENTS
DATE_SEC_QUEUED
CUSTOMER_COMMENTS
PRIMARY_PROVIDER_COMMENTS
ASSIGNMENT_REF
REASSIGNED_REF
SALE_REF
DEAL_REF
REQUEST_REF

c. **Seller Approves Ancillary Service** (ancsell) (Input, Template Upload) is used by the seller to confirm acceptance after the seller has approved the purchase of ancillary service. Note there is no response for this Input, since the Seller can query the ancstatus Template.

Template: **ancsell**

1. **Input (Template Upload)**

SELLER
SELLER_DUNS
CUSTOMER
CUSTOMER_DUNS
CONTROL_AREA
ANCILLARY_SERVICE_TYPE
SERVICE_DESCRIPTION
BEGTIME (Valid to the hour)
ENDTIME (Valid to the hour)
PRICE
PRICE_UNITS
STATUS= **Received, Accepted, Refused**
STATUS_COMMENTS
SELLER_COMMENTS
ASSIGNMENT_REF (Required)
REASSIGNED_REF
SALE_REF
DEAL_REF
REQUEST_REF

d. **Customer accepts Ancillary Service** (anccust) (Input, Template Upload) is used by the customer to confirm acceptance after the seller has approved the purchase of ancillary service. Note there is no response for this Input, since the Customer can query the ancstatus Template.

Template: **anccust**

1. **Input (Template Upload)**

SELLER
SELLER_DUNS
CUSTOMER
CUSTOMER_DUNS
CONTROL_AREA
ANCILLARY_SERVICE_TYPE

SERVICE_DESCRIPTION
BEGTIME (Valid to the hour)
ENDTIME (Valid to the hour)
PRICE
PRICE_UNITS
STATUS= **Confirmed, Withdrawn**
STATUS_COMMENTS
CUSTOMER_COMMENTS
ASSIGNMENT_REF (required)
SALE_REF
DEAL_REF
REQUEST_REF

4.3.10 Seller Post Ancillary Services

a. **Seller Ancillary Services Posting** (ancpost) (Input, Template Upload) is used by the seller to post information regarding the different services that are available for sale by third party sellers of ancillary services.

Template: **ancpost**

1. **Input (Template Upload)**

SELLER
SELLER_DUNS
CONTROL_AREA
ANCILLARY_SERVICE_TYPE
SERVICE_DESCRIPTION
BEGTIME (Valid to the hour)
ENDTIME (Valid to the hour)
SELLER_NAME
SELLER_PHONE
SELLER_FAX
SELLER_E-MAIL
PRICE
PRICE_UNITS
SELLER_COMMENTS
SALE_REF

2. **Response (acknowledgement)**

POSTING_REF (Assigned by TSIP)
SELLER
SELLER_DUNS

CONTROL_AREA
ANCILLARY_SERVICE_TYPE
SERVICE_DESCRIPTION
BEGTIME
ENDTIME
SELLER_NAME
SELLER_PHONE
SELLER_FAX
SELLER_E-MAIL
PRICE
PRICE_UNITS
SELLER_COMMENTS
SALE_REF

b. **Seller Modify Ancillary Services Posting** (ancupdate) (Input, Template Upload) is used by the seller to modify posted information regarding ancillary services that are available for sale by a third party seller. To remove an offering the BEGTIME=0 and the ENDTIME=0.

Template: **ancupdate**

1. **Input (Template Upload)**

SELLER
SELLER_DUNS
CONTROL_AREA
ANCILLARY_SERVICE_TYPE
SERVICE_DESCRIPTION
BEGTIME (Valid for the hour)
ENDTIME (Valid for the hour)
SELLER_NAME
SELLER_PHONE
SELLER_FAX
SELLER_E-MAIL
PRICE
PRICE_UNITS
SELLER_COMMENTS
POSTING_REF (Required)
SALE_REF

2. **Response (acknowledgement)**

SELLER
SELLER_DUNS

CONTROL_AREA
ANCILLARY_SERVICE_TYPE
SERVICE_DESCRIPTION
BEGTIME
ENDTIME
SELLER_NAME
SELLER_PHONE
SELLER_FAX
SELLER_E-MAIL
PRICE
PRICE_UNITS
SELLER_COMMENTS
POSTING_REF
SALE_REF

4.3.11 Informal Messages

a. Provider/Customer Want Ads and Informal Message Posting Request (Input) (messagepost) is used by Providers and Customers who wish to post a message.

Template: **messagepost**

1. **Input** (template upload)

CUSTOMER
CUSTOMER_DUNS
CUSTOMER_NAME must be specified
CUSTOMER_PHONE must be specified (if FAX or E-MAIL is blank)
CUSTOMER_FAX must be specified (if PHONE or E-MAIL is blank)
CUSTOMER_E-MAIL must be specified (if PHONE or FAX is blank)
MESSAGE must be specified
DATE_SEC_POSTED
DATE_SEC_EXPIRES

2. **Response** (acknowledgement)

POSTING_REF (assigned by information provider)
CUSTOMER
CUSTOMER_DUNS
CUSTOMER_NAME
CUSTOMER_PHONE
CUSTOMER_FAX
CUSTOMER_E-MAIL
MESSAGE

DATE_SEC_POSTED
DATE_SEC_EXPIRES

b. **Message** (message) is used to view a posted Want Ad or Informal Message.

Template: **message**

1. **Query**

CUSTOMER
CUSTOMER_DUNS
POSTING_REF
BEGTIME_OF_LAST_POSTING

2. **Response**

TIME_OF_LAST_UPDATE
CUSTOMER
CUSTOMER_DUNS
DATE_SEC_POSTED
DATE_SEC_EXPIRES
CUSTOMER_NAME
CUSTOMER_PHONE
CUSTOMER_FAX
CUSTOMER_E-MAIL
POSTING_REF
MESSAGE

c. **Provider/Sellers Message Delete Request (Input)** (messagedelete) is used by Providers and Sellers who wish to delete their message. The POSTING_REF number is used to determine which message.

Template: **messagedelete**

1. **Input** (Template upload)

CUSTOMER
CUSTOMER_DUNS
DATE_SEC_POSTED
DATE_SEC_EXPIRES
POSTING_REF (required)

d. **Standards of Conduct and Personnel Transfers (stdconduct).**

Template: **stdconduct**

1. **Query**

   BEGTIME_OF_LAST_UPDATE

2. **Response**

   TIME_OF_LAST_UPDATE
   STANDARDS_OR_PERSONNEL_ISSUES

4.4 FILE REQUEST AND FILE DOWNLOAD EXAMPLES

4.4.1 File Example for Hourly Offering

Example of the request to Primary Provider, aaa, and response for Seller, wxyz, for PATH_NAME "W/AAAA/PATH-ABC//" for April 10, 1996 from 8 a.m. to 3 p.m. (Note that the PATH_NAME consists of a REGION_CODE, PRIMARY_PROVIDER_CODE, PATH_CODE, and an OPTIONAL_CODE, separated with a slash, "/".)

The request is in the form of a URL query string and the response is a ASCII delimited file.

1. **Query**

http://(OASIS Node name)/OASIS/aaa/data/houroffering? ver=1.0&templ=houroffering& fmt=data&pprov=aaa &pprovduns=123456789& path=W/AAA/ABC// &seller=WXYZ &selerduns=987654321& POR=aaa& POD=bbb& captype1=hourly-firm &captype2=hourly-non-firm &tz=PD& btime=19960410080000PD& endtime=19960410150000PD

2. **Response Data**

REQUEST-STATUS=200 ↵ (*Successful*)
TIME_STAMP="19960409113526PD" ↵
VERSION=1.0↵
TEMPLATE="houroffering"↵
OUTPUT_FORMAT="DATA" ↵
PRIMARY_PROVIDER=AAA↵
PRIMARY_PROVIDER_DUNS=123456789↵
DATA_ROWS=16↵
COLUMN_HEADERS="TIME_OF_LAST_UPDATE","SELLER",SELLER_DUNS""PATH_NAME"
,"POINT_OF_RECEIPT","POINT_OF_DELIVERY","INTERFACE_TYPE","DATE_HOUR","CAP
ACITY","CAPACITY_TYPE","SALE_REF","PRICE","PRICE_UNITS","SELLER_NAME","SELL
ER_PHONE","SELLER_FAX","SELLER-E-MAIL","SELLER_COMMENTS" ↵
"19960409030000PD","WXYZ",987654321,"W/AAA/ABC//","N/A","N/A","E","1996040800PD",300,"HOURLY-
FIRM","N/A","N/A",1.25,"MW","N/A","N/A","N/A","N/A","10% DISCOUNT" ↵

"19960409030000PD","WXYZ",987654321,"W/AAA/ABC//","N/A","N/A","E","1996040800PD",300,"HOURLY-NON-FIRM","N/A","N/A",1.25,"MW","N/A","N/A","N/A","N/A","10% DISCOUNT" ↵
"19960409030000PD","WXYZ",987654321,"W/AAA/ABC//","N/A","N/A","E","1996040900PD",300,"HOURLY-FIRM","N/A","N/A",1.25,"MW","N/A","N/A","N/A","N/A","10% DISCOUNT" ↵
"19960409030000PD","WXYZ",987654321,"W/AAA/ABC//","N/A","N/A","E","1996040900PD",300,"HOURLY-NON-FIRM","N/A","N/A",1.25,"MW","N/A","N/A","N/A","N/A","10% DISCOUNT" ↵
"19960409030000PD","WXYZ",987654321,"W/AAA/ABC//","N/A","N/A","E","1996041000PD",300,"HOURLY-FIRM","N/A","N/A",1.25,"MW","N/A","N/A","N/A","N/A","10% DISCOUNT" ↵
"19960409030000PD","WXYZ",987654321,"W/AAA/ABC//","N/A","N/A","E","1996041000PD",300,"HOURLY-NON-FIRM","N/A","N/A",1.25,"MW","N/A","N/A","N/A","N/A","10% DISCOUNT" ↵
"19960409030000PD","WXYZ",987654321,"W/AAA/ABC//","N/A","N/A","E","1996041100PD",300,"HOURLY-FIRM","N/A","N/A",1.25,"MW","N/A","N/A","N/A","N/A","10% DISCOUNT" ↵
.
.
.
"19960409030000PD","WXYZ",987654321,"W/AAA/ABC//","N/A","N/A","E","1996041500PD",300,"HOURLY-FIRM","N/A","N/A",1.25,"MW","N/A","N/A","N/A","N/A","10% DISCOUNT" ↵
"19960409030000PD","WXYZ",987654321,"W/AAA/ABC//","N/A","N/A","E","1996041500PD",300,"HOURLY-NON-FIRM","N/A","N/A",1.25,"MW","N/A","N/A","N/A","N/A","10% DISCOUNT" ↵

4.4.2 File Example for Hourly Schedule Data

This example shows a request for the hourly schedule data from Primary Provider, aaa, related to the seller, wxyz, for the period 10 a.m. to 3 p.m. on April 10, 1996.

There are two identical requests examples using two slightly different methods.
The first request is using a HTTP URL request string through a HTML GET method. The second request is a similar example using fetch_http from a file using a POST method.

1. **Query**

URL Request (HTTP method=GET)

http://(OASIS Node name)/OASIS/aaa/data/schedule? ver=1.0& pprov=AAA& templ=schedule& fmt=data &pprovduns=123456789 &path=W/AAA/ABC//& seller=WXYZ &por=BBB &pod=CCC& tz=PD& btime=19960410100000PD& endtime=19960410150000PD

URL Request (HTTP method=POST)

$ fetch_http http://(OASIS Node name)/OASIS/aaa/data/OASISdata -f *c:/OASIS/wxyz/upload/in-file.txt*

Where *in-file.txt* contains the following:
ver=1.0& pprov=AAA& templ=schedule& fmt=data &pprovduns=123456789 &path=W/AAA/ABC//& seller=WXYZ &por=BBB &pod=CCC& tz=PD& btime=19960410010000PD& endtime=19960410150000PD

2. **Response Data**

REQUEST-STATUS=200↵
TIME_STAMP=19960410114702PD↵
VERSION=1.0↵

```
TEMPLATE="schedule"↵
OUTPUT_FORMAT="DATA" ↵
PRIMARY_PROVIDER="AAA"↵
PRIMARY_PROVIDER_DUNS=123456789↵
DATA_ROWS=6↵
COLUMN_HEADERS="TIME_OF_LAST_UPDATE","SELLER",'SELLER_DUNS","PATH_NAME","POINT_OF_RECEIP
T","POINT_OF_DELIVERY","INTERFACE_TYPE","SOURCE","SINK","CUSTOMER","CUSTOMER_DUNS","DATE_HO
UR","CAPACITY","CAPACITY_SCHEDULED","CAPACITY_TYPE","PRICE","PRICE_UNITS","ASSIGNMENT_REF"
↵
"19960409030000pd","wxyz",987654321,"W/AAA/ABC//","BBB","CCC","E","source","sink","WXYZ","0987654321","199
604100800PD",300,300,"HOURLY-FIRM",1.00,"MW",856743↵
        ...↵
        ...↵

"19960409030000pd","wxyz",987654321,"W/AAA/ABC//","BBB","CCC","E","source","sink","WXYZ","0987654321","199
604100140PD",200,200,"HOURLY-FIRM",1.00,"MW",856743↵
"19960409030000pd","wxyz",987654321,"W/AAA/ABC//","BBB","CCC","E","source","sink","WXYZ","0987654321","199
604101500PD",200,200,"HOURLY-FIRM",1.00,"MW",856743↵
```

4.4.3 Customer Posting a Transmission Service Offering

This example shows how a Customer would post for sale a transmission service that was previously purchased. The Seller would create a file and upload the file using the FETCH_HTTP program to send a file to the OASIS node of the Primary Provider.

1. **File post.txt**

```
VERSION=1.0↵
TEMPLATE="transpost"↵
OUTPUT_FORMAT="DATA" ↵
PRIMARY_PROVIDER=AAA↵
PRIMARY_PROVIDER_DUNS=123456789↵
DATA_ROWS=1↵
COLUMN_HEADERS="SELLER",SELLER_DUNS""PATH_NAME","POINT_OF
_RECEIPT","POINT_OF_DELIVERY","INTERFACE_TYPE","BEGTIME","END
TIME","CAPACITY","CAPACITY_TYPE","SELLER_COMMENTS","SELLER_N
AME",SELLER_PHONE",SELLER_FAX",SELLER-E-MAIL","SALE_REF",
"PRICE","PRICE_UNITS" ↵
"WXYZ",987654321,"W/AAA/ABC//","N/A","N/A","E","1996040800PD","1996041800PD,150,"HOURLY-
FIRM","N/A/","WXYZ","408-555-1212","415-555-1213","JSMITH@WXYZ.COM","wxyz1234","4567122, .90,"MW/HR" ↵
```

FETCH_HTTP Command to send posting

```
$ fetch_http http:///(OASIS Node name)/OASIS/abcd/data/transrequest -f
c:/OASIS/abcd/upload/post.txt
```

2. **Response Data**

```
REQUEST-STATUS=200 ↵ (Successful)
```

TIME_STAMP="19960409113526PD" ↵
VERSION=1.0↵
TEMPLATE="transpost"↵
OUTPUT_FORMAT="DATA" ↵
PRIMARY_PROVIDER=AAA↵
PRIMARY_PROVIDER_DUNS=123456789↵
DATA_ROWS=1↵
COLUMN_HEADERS="SELLER",SELLER_DUNS""PATH_NAME","POINT_OF_RECEIPT","PO
INT_OF_DELIVERY","INTERFACE_TYPE","BEGTIME","ENDTIME","CAPACITY","CAPACIT
Y_TYPE","SELLER_COMMENTS","SELLER_NAME",SELLER_PHONE",SELLER_FAX",SELLE
R-E-MAIL","SALE_REF", "PRICE"<"PRICE_UNITS" ↵
"WXYZ",987654321,"W/AAA/ABC//","N/A","N/A","E","1996040800PD","1996041800PD,150,"HOURLY-
FIRM","N/A/","WXYZ","408-555-1212","415-555-1213","JSMITH@WXYZ.COM","wxyz1234","4567122, .90,"MW/HR" ↵

4.4.4 Example of Re-aggregating Purchasing Services using Reassignment

The following examples do not show the complete Template information, but only show those elements of the Template of interest to this example.

a. Customer #1, "Best Energy" requests the purchase of 150 MW Firm ATC for 8 a.m. to 5 p.m. for $1.00 from a Primary Provider (transrequest).

TEMPLATE="transrequest"
CUSTOMER="Best Energy"
CAPACITY=150
CAPACITY_TYPE="HOURLY-FIRM"
BEGTIME="1996050708000000PD"
ENDTIME="1996050717000000PD"
PRICE="$1.00"

The Information Provider assigns ASSIGNMENT_REF = 5000 on acknowledgment.

b. Customer #1 purchases 120 MW ATC Non-firm for 3 p.m. to 9 p.m. for $.90 (transrequest). The Information Provider assigns the ASSIGNMENT_REF=5001 when the request for purchase is made and is shown in the acknowledgement.

TEMPLATE="transrequest"
CUSTOMER="Best_Energy"
CAPACITY=120
CAPACITY_TYPE="HOURLY-NON-FIRM"
BEGTIME="1996050715000000PD"
ENDTIME="1996050721000000PD"
PRICE="$1.05"

c. Customer #1 becomes Seller #1 and post the Transmission service of 100 MW ATC Non-firm capacity from 8 a.m. to 9 p.m. for resale at $.90/MW-hour.

TEMPLATE="transpost"
SELLER="Best_Energy"
CAPACITY=100
CAPACITY_TYPE="HOURLY-NON-FIRM"

BEGTIME="1996050708000000PD"
ENDTIME="1996050721000000PD"
SALE_REF="BEST100"
PRICE=.90
PRICE_UNITS=MW-HR
SELLER_COMMENTS="aggregating two previous purchases"

d. Customer #2 then requests purchase of 100 MW Non-firm from Reseller #1 from 8 a.m. to 6 p.m. for $0.90/MW-hour (transrequest).

TEMPLATE="transrequest"
CUSTOMER="Wholesale Power Co."
SELLER="Best_Energy"
CAPACITY=100
CAPACITY_TYPE="NON-FIRM"
BEGTIME="1996050708000000PD"
ENDTIME="1996050721000000PD"
SALE_REF="BEST100"
DEAL_REF="WPC100"
PRICE=.90
PRICE_UNITS=MW-HR
CUSTOMER_COMMENTS="Only need service until 6 p.m."

The Information Provider provides the ASSIGNMENT_REF=5002 for this transaction.

e. Seller informs the Information Provider of the reassignment of the previous transmission rights when the seller accepts the customer purchase request (transsell).

TEMPLATE="transsell"
CUSTOMER="Wholesale Power Co."
SELLER="Best_Energy"
ASSIGNMENT_REF=5002
STATUS="Accepted"
REASSIGNED_REF1=5000
REASSIGNED_CAPACITY1=100
REASSIGNED_BEGDATE_HOUR1="199605070800PD"
REASSIGNED_ENDDATE_HOUR1="199605071700PD"

REASSIGNED_REF2=5001
REASSIGNED_CAPACITY2=100
REASSIGNED_BEGDATE_HOUR2="199605071700PD"
REASSIGNED_ENDDATE_HOUR2="199605071800PD"

4.5 INFORMATION SUPPORTED BY WEB PAGE

There must be a Web page on each OASIS node with information on requesting the text file of the tariffs and service agreements.

5. PERFORMANCE REQUIREMENTS

A critical aspect of any system is its performance. Performance encompasses many issues, such as security, sizing, response to user requests, availability, backup, and other parameters that are critical for the system to function as desired. The following sections cover the performance requirements for the OASIS.

5.1 SECURITY

Breaches of security include many inadvertent or possibly even planned actions. Therefore, several requirements shall be implemented by the TSIPs to avoid these problems:

a. **Provider Update of TS Information:** Only Providers, including Secondary Providers, shall be permitted to update their own TS Information.

b. **Customer Input Only ASCII Text:** TSIPs shall be permitted to require that inputs from Customers shall be filtered to permit only strict ASCII text (strip bit 8 from each byte).

c. **Provider Updating Over Public Facilities:** If public facilities are involved in the connection between a Provider and the OASIS Node, the Provider shall be able to update his TS Information only through the use of ASCII or through encrypted files.

d. **User Registration and Login:** All Users shall be required to register and login to a Provider's Account before accessing that Provider's TS Information.

e. **User Passwords:** All Users shall enter their personal password when they wish access to TS Information beyond the lowest Access Privilege.

f. **Service Request Transactions:** Whenever Service Request transactions are implemented entirely over the OASIS, both an individual Customer password for the

request, and an individual Provider password for the notification of acceptance shall be required.

g. **Data Encryption:** Sophisticated data encryption techniques and the "secure id" mechanisms being used on the public Internet shall be used to transfer sensitive data across the Internet and directly between OASIS Nodes.

h. **Viruses:** TSIPs shall be responsible for protecting the OASIS Nodes from viruses.

i. **Performance Log:** TSIPs shall keep a log on User usage of OASIS resources.

j. **Disconnection:** TSIPs shall be allowed to disconnect any User who is degrading the performance of the OASIS Node through the excessive use of resources, beyond what is permitted in their Service Level Agreement.

k. **Premature Access:** The TSIP log shall also be used to ensure that Users who are affiliated with the Provider's company (or any other User) do not have access to TS information before it is publicly available.

l. **Firewalls:** TSIPs shall employ security measures such as firewalls to minimize the possibility that unauthorized users shall access or modify TS Information or reach into Provider or User systems. Interfaces through Public Data Networks or the Internet shall be permitted as long as these security requirements are met.

m. **Certificates and Public Key Standards (optional):** Use of alternative forms of login and authentication using certificates and public key standards is acceptable.

5.2 ACCESS PRIVILEGES

Users shall be assigned different Access Privileges based on external agreements between the User and the Provider. These Access Privileges are associated with individual Users rather than just a company, to ensure that only authorized Users within a company have the appropriate access.

The following Access Privileges shall be available as a minimum:

a. **Access Privilege Read-Only:** The User may only read publicly available TS Information.

b. **Access Privilege for Transactions:** The Customer is authorized to transact Service Requests.

c. **Access Privilege Read/Write:** A Secondary Provider shall have write access to his own Provider Account on an OASIS Node.

5.3 OASIS RESPONSE TIME REQUIREMENTS

TSIPs can only be responsible for the response capabilities of two portions of the Internet-based OASIS network:

- The response capabilities of the OASIS Node server to process interactions with Users
- The bandwidth of the connection(s) between the OASIS Node server and the Internet.

Therefore, the OASIS response time requirements are as follows:

a. **OASIS Node Server Response Time:** The OASIS Node server shall be capable of supporting its connection(s) to Users with an average aggregate data rate of at least "A" bits per second. "A" is defined as follows:

$$A = N * R \text{ bits/sec}$$

where:

$$N = 5\% \text{ of registered Customers.}$$

and

$$R = 28{,}800 \text{ bits/sec per Customer.}$$

b. **OASIS Node Network Connection Bandwidth:** The bandwidth "B" of the OASIS Node connection(s) to the Internet shall be at least:

$$B = 2 * A \text{ bits/sec}$$

c. **Time to Meet Response Requirements:** The minimum time responses shall be met **within 1 month of User registration** for any single new User. If more than 10 new Users register in one month, 2 months lead time shall be permitted to expand/ upgrade the OASIS Node to meet the response requirements.

5.4 OASIS PROVIDER ACCOUNT AVAILABILITY

The following are the OASIS Provider Account availability requirements:

a. **OASIS Provider Account Availability:** The availability of each OASIS Provider account on an OASIS Node shall be at least **98.0%** (downtime of about 7 days per year).

Availability is defined as:

$$\% \text{ Availability} = \frac{(1 - \text{Cumulative Provider Account Downtime})}{\text{Total Time}} * 100$$

A Provider account shall be considered to be down, and downtime shall be accumulated, upon occurrence of any of the following:

1. One or more Users cannot link and log on to the Provider account. The downtime accumulated shall be calculated as:
   - Σ **for affected Users of 1/n * (Login Time)**, which is the time used by each affected User to try to link and log on to the Provider account, and where "n" is the total number of Users actively registered for that Provider account.

2. One or more Users can not access TS Information once they have logged on to a Provider account. The downtime accumulated shall be calculated as:
   - Σ **for affected Users of 1/n * (Access Time)**, which is the time used by each affected User to try to access data, and where "n" is the total number of Users actively registered for that Provider.

3. A **five (5) minute** penalty shall be added to the cumulative downtime for every time a User loses their connection to a Provider's account due to an OASIS Node momentary failure or problem.

5.5 BACKUP AND RECOVERY

The following backup and recovery requirements shall be met:

a. **Normal Backup of TS Information:** Backup of TS Information and equipment shall be provided within the OASIS Nodes so that no data or transaction logs are lost or become inaccessible by Users due to any single point of failure. Backed up data shall be no older than **30 seconds**. Single points of failure include the loss of one:

   - Disk drive or other storage device
   - Processor
   - Inter-processor communications (e.g. LAN)
   - Inter-OASIS communications
   - Software application
   - Database
   - Communication ports for access by Users
   - Any other single item which affects the access of TS Information by Users

b. **Spurious Failure Recovery Time:** After a spurious failure situation, all affected Users shall regain access to all TS Information **within 30 minutes**. A spurious failure is a temporary loss of services which can be overcome by rebooting a system or restarting a program. Permanent loss of any physical component is considered a catastrophic failure.

c. **Long-Term Backup:** Permanent loss of critical data due to a catastrophic failure shall be minimized through off-line storage on a **daily basis** and through off-site data storage on a **periodic basis.**

d. **Catastrophic Failure Recovery:** Recovery from a catastrophic failure or loss of an OASIS Node may be provided through the use of alternate OASIS Nodes which meet the same availability and response time requirements. TSIPs may set up prior agreements with other TSIPs as to which Nodes will act as backups to which other Nodes, and what procedure will be used to undertake the recovery. Recovery from a catastrophic failure shall be designed to be achieved **within 24 hours.**

5.6 TIME SYNCHRONIZATION

The following are the time requirements:

a. **Time Synchronization:** Time shall be synchronized on OASIS Nodes such that all time stamps will be accurate to within ± 0.5 second of official time. This synchronization may be handled over the network using NTP, or may be synchronized locally using time standard signals (e.g. WWVB, GPS equipment).

b. **Network Time Protocol (NTP):** OASIS Nodes shall support the Internet tool for time synchronization, Network Time Protocol (NTP), which is described in RFC-1305, version 3, so that Users shall be able to request the display and the downloading of current time on an OASIS Node for purposes of user applications which might be sensitive to OASIS time.

5.7 TS INFORMATION TIMING REQUIREMENTS

The TS Information timing requirements are as follows, except they are waived during emergencies.

a. **TS Information Availability:** The most recent Provider TS information shall be available on the OASIS Node within 5 minutes of its required posting time at least 98% of the time. The remaining 2% of the time the TS Information shall be available within 10 minutes of its scheduled posting time.

b. **Notification of Posted or Changed TS Information:** Notification of TS Information posted or changed by a Provider shall be made available within 60 seconds to the log.

c. **Acknowledgment by the TSIP:** Acknowledgment by the TSIP of the receipt of User Purchase requests shall occur within 1 minute. The actual negotiations and agreements on Purchase requests do not have time constraints.

5.8 TS INFORMATION ACCURACY

The following requirements relate to the accuracy of the TS information:

a. **TS Information Reasonability:** TS information posted and updated by the Provider shall be validated for reasonability and consistency through the use of limit checks and other validation methods.

b. **TS Information Accuracy:** Although precise measures of accuracy are difficult to establish, Providers shall use their best efforts to provide accurate information.

5.9 PERFORMANCE AUDITING

The following are the performance auditing requirements:

a. **User Help Desk Support**: TSIPs shall provide a "Help Desk" that is available at least during normal business hours (local time zone) and normal work days.

b. **Monitoring Performance Parameters:** TSIPs shall use their best efforts to monitor performance parameters. Any User shall be able to read or download these performance statistics.

5.10 MIGRATION REQUIREMENTS

The following are the migration requirements:

a. **Support for Legacy Capabilities:** Any time mandated upgrades or modifications to OASIS capabilities and tools are made to the OASIS, TSIPs shall continue to support the existing capabilities and tools for at least 3 months. This overlap will permit Users the time to upgrade their own systems to reflect these changes.

Appendix A

Data Element Dictionary

September 5, 1996

Version 1.1

Data Dictionary Element Name	Alias	Field Format : minimum characters {type of ASCII} maximum characters	Restricted Values	Definition of Data Element
ANCILLARY_SERVICE_ TYPE	ANCTYPE	1{ALPHANUMERIC}20	Free-form text	A reference to the ancillary service types defined by the Primary Provider or Seller.
ASSIGNMENT_REF	AREF	1{ALPHANUMERIC}12	Unique value	A unique reference number assigned by a Transmission Information Provider to provide a unique record for each transmission or ancillary service request. A single transmission or ancillary service request will be over a contiguous time period, i.e from a BEGTIME to an ENDTIME.
BEGDATE_HOUR	BEGHOUR	12{ALPHANUMIC}12	Valid date and time to hours: yyyy+mo+dd+hh +tz	Beginning Date, time, and time zone. Military time is used. Example: 1996021201PS
BEGDATE_SEC_QUEUED	BQUEUED	16{ALPHANUMERIC}16	Valid date and time to seconds: yyyy+mo+dd+hh +mm+ss+tz	Beginning date and time of queue.
BEGTIME	BTIME	16{ALPHANUMERIC}16	Valid Date and Time to seconds: yyyy+mo+dd+hh +mm+ss+tz	Beginning date and time. Note that for some templates when used as a query variable the time may be only valid up to the hour, day or month. If more data is given than is valid, the hour, day or month will be used to make the date and time inclusive, i.e. date or time will be truncated to valid hour, day or month.
BEGTIME_OF_LAST_POSTING	BLPOST	16{ALPHANUMERIC}16	Valid date and time to seconds: yyyy+mo+dd+hh +mm+ss+tz	Date and time to seconds that messages were posted. May be used to search for messages posted since a specific point in time.
BEGTIME_OF_LAST_UPDATE	BLUPDATE	16{ALPHANUMERIC}16	Valid date and time to seconds: yyyy+mo+dd+hh +mm+ss+tz	Date and time to seconds that data was last updated. May be used to search data updated since a specific point in time.
CAPACITY	CAP	1{NUMERIC}12	Non-negative number in units of MW	Transfer capability is the measure of the ability of the interconnected electric system to readily move or transfer power from one area to another over all transmission lines (or paths) between those areas under specified system conditions. In this context "area" may be an individual electric system, powerpool, control area, subregion, or NERC region or portion thereof.

Data Dictionary Element Name	Alias	Field Format : minimum characters {type of ASCII} maximum characters	Restricted Values	Definition of Data Element
CAPACITY_CURTAILED	CAPCUR	1{NUMERIC}12	Non-negative number in units of MW	The amount of transfer capability curtailed by the Primary provider for emergency reasons
CAPACITY_SCHEDULED	CAPSCH	1{NUMERIC}12	Non-negative number in units of MW	Transfer capability scheduled on each path
CAPACITY_TYPE	CAPTYPE	1{ALPHANUMERIC}50	Valid name from CAPACITY_TYPE in LIST template	The type of transfer capability being referenced. *Examples include Hourly-Total-Transmission-Capacity, Daily-Firm, Monthly-Non-Firm,* Hourly-*Firm-On-Peak, Daily-Firm-Off-Peak, Yearly-Non-Firm-On-Peak, Monthly-Non-Firm-Off-Peak*
COLUMN_HEADERS	HEADERS	1{ALPHANUMERIC}Limited to all the elements names in one Template	Headers surrounded with " and separated by commas. Limited to valid Template element names. Should use full element name and not alias.	Example: COLUMN_HEADER="PATH_NAME","POINT_OF_RECEIPT","POINT_OF_DELIVERY","SOURCE","SINK"
CONTROL_AREA	AREA	1{ALPHANUMERIC}20	Valid name of a control area	A part of the power system with metered tie lines and capable of matching generation and load while meeting scheduled interchange. Location of Ancillary Services is my CONTROL_AREA.
CURTAILMENT_OPTIONS	CUROPT	1{ALPHANUMERIC}80	Free form text	Customer options, if any, to avoid curtailment
CURTAILMENT_PROCEDURES	CURPROC	1{ALPHANUMERIC}80	Free form text	Curtailment procedures to be followed in the event of a curtailment
CURTAILMENT_REASON	CURREAS	1{ALPHANUMERIC}80	Free-form text	Reason for curtailment of service.
CUSTOMER	CUST	1{ALPHANUMERIC}25	Unique value	Any entity (or its designated agent) that is eligible to view OASIS information, to execute a service agreement, and/or to receive transmission service.
CUSTOMER_COMMENTS	CUSTCOM	1{ALPHANUMERIC} 80	Free-form text	Informative text.
CUSTOMER_DUNS	CUSTDUNS	1{NUMERIC}9	Unique DUNS number	Unique DUNS number for a Customer
CUSTOMER_E-MAIL	CUSTEMAIL	1{ALPHANUMERIC}25	Valid Internet E-Mail address	Internet E-Mail address of Customer contact person
CUSTOMER_FAX	CUSTFAX	14{ALPHANUMERIC}20	Area code and telephone number, plus any extensions (aaa)-nnn-nnnn xnnnn	FAX phone number of Customer contact person

Data Dictionary Element Name	Alias	Field Format : minimum characters {type of ASCII} maximum characters	Restricted Values	Definition of Data Element
CUSTOMER_NAME	CUSTNAME	1{ALPHANUMERIC}25	Free form text	Name of Customer contact person
CUSTOMER_PHONE	CUSTPHON	14{ALPHANUMERIC}20	Area code and telephone number, plus any extensions (aaa)-nnn-nnnn xnnnn	Telephone of Customer contact person
DATA_ROWS	ROWS	1{NUMERIC} unlimited	Positive Number	Number of records (rows) of data exclusive of header information that are to be uploaded or downloaded in a file.
DATE	DATE	8{ALPHANUMERIC}8	Valid date yyyy+mo+dd	Year, month and day: Example for April 12, 1996: 19960412
DATE_HOUR	HOUR	12{ALPHANUMERIC}12	Valid date and hour yyyy+mo+dd+hh +tz	Date and hour. Example for April 12, 1996 at 12:14 p.m. Pacific Standard Time: 1996041212PS
DATE_SEC_EXPIRES	TIMEEXP	16{ALPHANUMERIC}16	Valid date and time in seconds yyyy+mo+dd+hh +mm+ss+tz	Date and time to seconds a message or service offer expires and is no longer posted
DATE_SEC_POSTED	TIMEPSTD	16{ALPHANUMERIC}16	Valid date and time in seconds yyyy+mo+dd+hh +mm+ss+tz	Date and time to seconds a message or service offered was posted
DATE_SEC_QUEUED	QUEUED	16{ALPHANUMERIC}16	Valid date and time in seconds yyyy+mo+dd+hh +mm+ss+tz	For a valid request, this is the same time as the TIME_STAMP for a customer request. That is the time when the request is received by the TSIP.
DEAL_REF	DREF	1{ALPHANUMERIC}12	Unique value, Assigned by Customer	The unique reference assigned by a Customer to two or more service purchases to identify each of them as related to others in the same power service deal. These requests may be related to each other in time sequence through a single Provider, or as a series of wheels through multiple Providers, or a combination of both time and wheels. The User uses the DEAL_REF to uniquely identify a combination of requests relating to a particular deal.
ELEMENT_NAME	ELEMENT	1{ALPHANUMERIC}40	Valid template element name	Template element name as indicated in data dictionary
ENDDATE_HOUR	ENDHOUR	12{ALPHANUMERIC}12	Valid date and time to hour: yyyy+mo+dd +hh+tz	Date and time to hour

Data Dictionary Element Name	Alias	Field Format : minimum characters {type of ASCII} maximum characters	Restricted Values	Definition of Data Element
ENDDATE_SEC_QUEUED	EQUEUED	16{ALPHANUMERIC}16	Valid date and time yyyy+mo+dd+hh +mm+ss+tz	End date and time of queue
ENDTIME	ENDTIME	16{ALPHANUMERIC}16	Valid date and time yyyy+mo+dd+hh +mm+ss+tz	End date and time. Note that for some templates when used as a query variable the time may be only valid up to the hour, day or month. If more data is given than is valid, the hour, day or month will be used to make the date and time inclusive, i.e. date or time will be increased to include ENDTIME.
INTERFACE_TYPE	INTERFACE	1{ALPHANUMERIC}1	I,E	Type of interface define by path: Internal (I) to a control area or External (E) to a control area
LIST_ITEM	ITEM	1{alphanumeric}50	Free form text	Item from list, such as list of SELLERs, list of PATHs, list of PORs, list of PODs, List of CAPACITY_TYPEs, List of ANCILLARY_SERVICES_TYPEs, List of TEMPLATEs
LIST_ITEM_DESCRIPTION	ITEMDESC	0{ALPHANUMERIC}100	Free form text	A detailed description of the LIST_ITEM
LIST_NAME	LIST	1{alphanumeric}25	SELLER, PATH, CAPACITY_TYPE,POR,POD, ANCILLARY_SERVICE_TYPE, STUDY TEMPLATE	Name of list
MESSAGE	MSG	1{ALPHANUMERIC}200	Free form text	An informative text message
MONTH	MONTH	6{ALPHANUMERIC}6	Valid date yyyy+mo	Date year + month. Example April 1996: 199604
NEW_DATA	NEWDATA	1{ALPHANUMERIC}200	Any valid date element value	For audit log, the new updated value of a template data element after update.
OLD_DATA	OLDDATA	1{ALPHANUMERIC}200	Any valid data element value	For audit log, the old value of a template data element prior to being updated. This element is not applicable in the audit log for transaction events.
OPTIONAL_CODE	N/A	0{ALPHANUMERIC}25	Unique path name within region	OPTIONAL_CODE - 25 chars, unique for Path. If used for directionality, then the first 12 characters shall represent POR, followed by '-', followed by 12 characters which shall represent POD. Used by PATH_NAME.
OUTPUT_FORMAT	FMT	4{ALPHANUMERIC}4	HTML, DATA	Format of response, either hypertext markup language for presentation using a web browser or text for use in a downloaded file.

Data Dictionary Element Name	Alias	Field Format : minimum characters {type of ASCII} maximum characters	Restricted Values	Definition of Data Element
PATH_CODE	N/A	0{ALPHANUMERIC}12	Unique code for each path as defined by primary provider	Unique code within a Region for each path. Used by PATH_NAME
PATH_NAME	PATH	5{ALPHANUMERIC}50	Unique value	The unique name assigned to a single transmission line or the set of one or more parallel transmission lines whose power transfer capabilities are strongly interrelated and must be determined in aggregate. These lines are typically described as being on a path, corridor or interconnection in some regions, or as crossing an interface or cut-plane in other regions. Multiple lines may be owned by different parties and require prorating of capability shares. The name is constructed from the following codes, with each code separated by a "/": REGION_CODE - 2 chars, unique to OASIS System PRIMARY_PROVIDER_CODE - 4 chars, unique within Region PATH_CODE - 12 chars, unique for Primary Provider OPTIONAL_CODE - 25 chars, unique for Path. If used for directionality, then the first 12 characters shall represent POR, followed by '-', followed by 12 characters which shall represent POD SPARE_CODE - 3 chars
POINT_OF_DELIVERY	POD	1{ALPHANUMERIC}12	Unique value within Primary Provider	Point of Delivery is one or more point(s) of interconnection on the Transmission Provider's transmission system where capacity and/or energy transmitted by the Transmission Provider will be made available to the Receiving Party. This is used along with Point of Receipt to define a Path and direction of flow on that path. For internal paths, this would be a specific location(s) in the area. For an external path, this may be an area-to-area interface.

Data Dictionary Element Name	Alias	Field Format : minimum characters {type of ASCII} maximum characters	Restricted Values	Definition of Data Element
POINT_OF_RECEIPT	POR	1{ALPHANUMERIC}12	Unique value within Primary Provider	Point of Receipt is one or more point(s) of interconnection on the Transmission Provider's transmission system where capacity and/or energy transmitted will be made available to the Transmission Provider by the Delivering Party. This is used along with Point of Delivery to define a Path and direction of flow on that path. For internal paths, this would be a specific location(s) in the area. For an external path, this may be an area-to-area interface.
POSTING_REF	POSTREF	1{ALPHANUMERIC}12	Unique Value	Assigned by TSIP when Service or Message is received by TSIP. Unique number can be used by the user to modify or delete the posting.
PRECONFIRMED	PRECONF	2{ALPHA}3	YES or NO	Used by Customer to preconfirm sale in template transrequest or ancrequest. If customer indicates sale is preconfirmed, then the response is YES and the customer does not need to confirm the sale.
PRICE	PRICE	1{NUMERIC}5 + '.' + 2{NUMERIC}2	Positive number with 2 decimals	The current offered price of a Service in dollars and cents. May be used by Sellers as well as Customers to designate a price offered.
PRICE_UNITS	UNITS	1(ALPHA)20	Free form text	The units used for PRICE. Examples: $/MRhr, $/MWmonth
PRIMARY_ PROVIDER	PPROV	1{ALPHANUMERIC}25	Unique value	Name of an Owner of transmission services
PRIMARY_PROVIDER_COMMENTS	PPROVCOM	1{ALPHANUMERIC} 80	Free-form text	Informative text. Usually entered by the Primary Provider through a back end system.
PRIMARY_PROVIDER_CODE	N/A	1{ALPHANUMERIC}4	Unique code	Unique code for each Primary Provider. Used by PATH_NAME and in URL. Registered as part of URL at www.tsin.com .
PRIMARY_PROVIDER_DUNS	PPROVDUNS	1{NUMERIC}9	Valid DUNS number	Unique code for each Primary and Secondary Provider. Provided by Dun and Bradstreet.
REASSIGNED_BEGDATE_HOUR	RASBHOUR	16ALPHANUMERIC}16	Valid date and time to seconds: yyyy+mo+dd+hh+tz	Beginning date and time of the reassigned transmission service

Data Dictionary Element Name	Alias	Field Format : minimum characters {type of ASCII} maximum characters	Restricted Values	Definition of Data Element
REASSIGNED_CAPACITY	RASCAP	1{NUMERIC}12	Positive number, cannot exceed previous assigned capacity	The amount of transfer capability that was reassigned from one entity to another.
REASSIGNED_ENDDATE_HOUR	RASEHOUR	16{ALPHANUMERIC}16	Valid date and time to hour: yyyy+mo+dd+hh+tz	Date and time of the end of the transmission service that is reassigned to another User.
REASSIGNED_REF	REREF	1{ALPHANUMERIC}12	Unique value	When customer makes a purchase of a transmission service that was posted for resale and a new ASSIGNMENT_REF number is issued the previous ASSIGNMENT_REF number now becomes the REASSIGNMENT_REF. Also used by SELLER when posting transmission or ancillary services for resale to show the previous assignment reference number.
REGION_CODE	N/A	1{ALPHANUMERIC}2	Unique within OASIS System	Defined for NERC regions, with the following defined: E - ECAR I - MAIN S - SERC T - ERCOT A - MAPP P - SPP M - MAAC N - NPCC W - WSCC Second character or digit reserved for subregion id as defined by each region.
REQUEST_REF	RREF	1{ALPHANUMERIC}12	Unique value	A reference uniquely assigned by a Customer to a request for service from a Provider.
REQUEST_STATUS	RSTATUS	1{NUMERIC}3 +0{ALPHA}20	Error number+ !Successful/ !Unsuccessful	Massage status indicating message was successful or error code if unsuccessful. Example: 200 !Successful
RETURN_TZ	TZ	2{ALPHANUMERIC}2	PD,PS,ED,ES,MD,MS,CD,CS	A time zone code. May be set by Customer in a query. Returned date and time data is converted to this time zone.

Data Dictionary Element Name	Alias	Field Format : minimum characters {type of ASCII} maximum characters	Restricted Values	Definition of Data Element
SALE_REF	SREF	1{ALPHANUMERIC}12	Unique value	Identifier which is set by seller (including Primary Provider) when posting a service for sale
SELLER	SELLER	1{ALPHANUMERIC}25	Unique value	Organization name of Primary Provider or Reseller.
SELLER_COMMENTS	SELCOM	1{ALPHANUMERIC} 80	Free-form text	Informative text provided by the Seller
SELLER_DUNS	SELDUNS	1{NUMERIC}9	Valid DUNS number	Unique Data Universal Numbering System provided by Dun and Bradstreet. Code for a Primary Provider or Seller.
SELLER_E-MAIL	SELEMAIL	5{ALPHANUMERIC}60	Valid network reference	E-Mail address of Seller contact person
SELLER_FAX	SELFAX	14{ALPHANUMERIC}20	Area code and telephone number, plus any extensions Example: (aaa)-nnn-nnnn xnnnn	The fax telephone number for contact person at Seller.
SELLER_NAME	SELNAME	1{ALPHANUMERIC}25	Free form text	The name of an individual contact person at the Seller.
SELLER_PHONE	SELPHONE	14{ALPHANUMERIC}20	Area code and telephone number, plus any extensions (aaa)-nnn-nnnn xnnnn	The telephone number of a contact person as a Seller
SERVICE_DESCRIPTION	SVCDESC	1{ALPHANUMERIC} 200	Free-form text	Information regarding a service.
SINK	SINK	0{ALPHANUMERIC}14	Valid area name	The area in which the SINK is located.
SOURCE	SOURCE	0{ALPHANUMERIC}14	Valid area name	The area in which the SOURCE is located.
SPARE_CODE	N/A	0{ALPHANUMERIC}3	Defined by region	Spare code to be used at a later time. Used by PATH_NAME
STANDARDS_OR_PERSONNEL_ISSUES	STDPERS	1{ALPHANUMERIC}800	Free form text	Informative text stating violations of Standards of Conduct or Transfer of Personnel by Primary Provider or text stating transfers of personnel between transmission, operations and marketing functions as required by the FERC Standards of Conduct.

Data Dictionary Element Name	Alias	Field Format : minimum characters {type of ASCII} maximum characters	Restricted Values	Definition of Data Element
STATUS	STATUS	5{ALPHANUMERIC}25	Valid field (QUEUED, RECEIVED, STUDY, ACCEPTED, REFUSED, CONFIRMED, WITHDRAWN, DISPLACED)	QUEUED - initial status assigned by TSIP on receipt of "customer capacity purchase request" RECEIVED- reassigned by TP to acknowledge QUEUED requests and indicate the service request is being evaluated STUDY- assigned by TP to indicate some level of study is required or being performed to evaluate service request ACCEPTED- assigned by TP to indicate service request has been approved/accepted REFUSED- assigned by TP to indicate service request has been denied, SELLER_COMMENTS should be used to communicate reason for denial of service CONFIRMED- assigned by TC in response to TP posting "ACCEPTED" status to confirm service WITHDRAWN- assigned by TC at any point in request evaluation to withdraw the request from any further action DISPLACED- assigned by TP when a "CONFIRMED" request from a TC is displaced by a longer term request and the TC has exercised right of first refusal (i.e. refused to match T&Cs of new request)
STATUS_COMMENTS	STACOM	1{ALPHANUMERIC} 80	Free form text	Informative text.
TARIFF	TARIFF	1{ALPHANUMERIC} 150	Free form text. Name and description of Tariff	Tariffs approved by FERC
TEMPLATE	TEMPL	1{ALPHANUMERIC}20	Valid Name of Template from Section 4.3 or from LIST template	The name of a logical collection of DATA_ELEMENTS in a User's interaction with an OASIS Node.
TIME_OF_LAST_UPDATE	TLUPDATE	16{ALPHANUMERIC}16	Valid date and time yyyy+mo+dd+hh+mm+ss+tz	Date and time to seconds that data was last updated on OASIS Node Example: 19960212145530PS
TIME_STAMP	TSTAMP	16{ALPHANUMERIC}16	Valid date and Time to seconds yyyy+mo+dd+hh+mm+ss+tz	Time a file of data is sent for download from an OASIS Node.
VERSION	VER	1{REAL NUMBER}6	Range of 1.0 to 9999.9	Specifies which version of the OASIS Standards and Communication Protocol to use when interpreting the request

The Commission orders: The Standards and Protocols document is hereby modified, as discussed in the body of this order.

By the Commission.

Lois D. Cashell,

Secretary.

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